NI 43-101 Technical Report – Feasibility Study Update Lac Knife Graphite Project Québec, Canada

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Focus Graphite Inc.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 EXECUTIVE SUMMARY

1.1 Introduction

Focus Graphite Inc. ("Focus" or "the Company") is a Kingston, Ontario, based company contemplating a project for the construction, installation and operation of a graphite mine and graphite ore processing facility ("the Lac Knife Graphite Project" or "the Project") to be located near Fermont, Québec. The Project will be developed based on a conventional open-pit, shovel and truck and drill and blast mining operation using mobile mining equipment powered by diesel engines. The Company is studying the development of a carbon free mining operation using zero-emission vehicles as these become more readily available and competitively priced.

Mineral resources were updated based on additional drilling conducted on the Lac Knife graphite deposit from 2014 to 2018 and these results formed the basis for the Feasibility Study Update ("FSU").

This National Instrument 43-101 ("NI 43-101") Technical Report ("Report") on the Lac Knife Graphite Project has been prepared at the request of Focus to present the FSU major findings.

The FSU Report was prepared by DRA Global Limited (DRA) with economic results completed on March 6, 2023.

The effective date of the Technical Report is March 6, 2023.

The Project is situated in Esmanville Township on NTS topographic map sheet 23B11, south of town of Fermont, in the Côte-Nord administrative region of Québec. The Project site is accessible via a combination of paved and gravel surface road from Fermont. The temporary exploration camp which is located on the western shore of Lac Knife, is within 45 km driving distance from Fermont. Road distance from Montreal to Lac Knife is approximately 1,300 km by all-season Highway 389, approximately 500 km from Baie-Comeau to Fermont. The Project is centered at 52°33'N and 67°11'W and covers 3,248.18 ha.

1.2 Land Tenure

The Project, owned 100% by Focus, consists of a group of 62 claims covering approximately 3,248 ha. There are no options, royalties, or other outstanding liens, encumbrances, or agreements. While there is no restriction related to the mineral tenure renewal, it is important to note that the claim block forms an enclave in the proposed Rivière Moisie aquatic reserve area.

1.3 Existing Infrastructure

Fermont, Québec, is the closest municipality, with about 2,300 inhabitants. Including the Towns of Labrador City and Wabush in Labrador, located approximately 30 km away, the regional population is approximately 9,400. These municipalities have the infrastructure to provide services for accommodations, community services, a skilled mining labour force, as well as mining contractors and related services. The Wabush airport is the nearest point for scheduled and charter flights from Sept-Îles, Québec, Montreal and Newfoundland-Labrador destinations with four scheduled airlines operating daily flights.

Two (2) railways systems serve the region. The Québec Cartier Railway Company is the privately-owned and operated railroad that links ArcelorMittal's Mont-Wright facility located approximately 15 km away from the Project to their Port Cartier pellet plant and port on the shore of the St. Lawrence River (416 km). The Québec North Shore and Labrador Railway Co., owned by the Iron Ore Company of Canada (IOCC) is a common-carrier railroad that links Labrador City located at approximately 30 km from the Project to the Port of Sept-Îles (360 km). The Hydro-Québec main power line serving Fermont and the local mines passes less than five kilometres east of the Project.

1.4 History

The Lac Knife showing was originally discovered in 1959 by D. L. Murphy during a geological survey conducted by the Québec Ministry of Energy and Resources. Interest in the discovery of a graphite deposit increased in the 1980s due to the price increase for natural graphite flakes. In 1987, La Société d'Exploration Minière Mazarin Inc. (Mazarin) and *Le Fonds d'exploration minière du Nouveau Québec (Le Fonds)* signed an exploration agreement. From the period between 1985 through to 1988, exploration activities consisted of prospecting, mapping, geophysical survey, and trenching. December 1989, Mazarin and Princeton Mining Corporation (Princeton) signed an agreement to bring the deposit into production. An extensive drilling campaign followed with bulk sampling and metallurgical testing. Prefeasibility and feasibility studies were carried out between 1989 and 1990. Princeton withdrew from the project in February 1990.

In August 1990, Cambior signed a joint venture for an equal partnership with Mazarin for the Lac Knife Project. Cambior retained Magloire Bérubé to review the original Mazarin mineral resource. In 1991, Mazarin hoped to bring the deposit in production, but the economy went into recession and graphite prices declined. In 2000, interest in the Lac Knife Project increased again as the graphite market was emerging for hydrogen fuel cells and other uses. In May 2000 UCAR Graph-Tech and Mazarin signed an agreement with the goal of starting production in 2004. However, the graphite market again declined due to an increased supply from Chinese producers and the Project did not proceed. In December 2003, Mazarin spun off its niobium, dolomite and graphite (Lac Knife) assets into Sequoia Minerals. Five months later, Cambior acquired Sequoia Minerals and in 2006, IAMGOLD purchased Cambior which included the Lac Knife asset.

Focus acquired the Project in August 2010 from IAMGOLD Corporation. Up to that point, 99 drill holes were completed on the site.

1.5 Geology and Mineralisation

The Lac Knife deposit is located in the Grenville Geological Province 38 km south-east from the Grenville front within the Gagnon group. Rocks in the Gagnon group are the metamorphosed equivalent of rocks from the Ferriman group in the Labrador Trough. Within the Ferriman group, slate and turbidic sediments of the Menihek formation were metamorphosed into quartz-biotite-garnet ± graphite gneiss, and pelitic-mica-graphite rich schist of the Nault Formation which hosts the Lac Knife deposit.

The Nault Formation at Lac Knife is described as a fine to medium grained, grey, quartzofeldspathic paragneiss with biotite, muscovite and locally garnet-kyanite, ± graphite, ± sulfides. Sulphur species consist principally of pyrrhotite, pyrite with minor chalcopyrite and sphalerite.

Two types of Gneissic rocks exist on the deposit: silicate and calcsilicate. The gneissic rocks are intruded by bands of quartz monzonite and pegmatite more or less parallel to the gneissosity ranging in width from a few centimetres to widths exceeding one metre. The distinction between the two gneisses is not reliably reflected in the drill core log as both types have similar amounts of graphite and sulphides, and the graphite flake distribution is also similar.

The original Mazarin interpretation of the deposit was based on a simple multiple folding sequence of one graphite layer. In 2012, Roche revised this interpretation by eliminating the fold hinges which resulted in a northerly trending sequence of isolated layers. Focus re-interpreted the deposit as a sequence of tight folds similar to the original Mazarin interpretation with the addition of an interpreted fault which cut-off and displaced the mineralization on the southeast side of the deposit.

The margins of the graphite lenses display a sharp and rapid grade change from <1% Cg in the unmineralized quartzo-feldspathic gneiss increasing to ~5% Cg or higher within the graphitic gneiss. With the exception of the usual shoulder samples, Focus typically did not sample drill core in the unmineralized zones nor within waste rock composed of quartzo-feldspathic gneiss.

Graphite occurs as flakes ranging from very fine grains up to 2 mm. Graphitic gneiss with grades generally less than 25% Cg are composed of independent grains with coarse to medium flakes larger than 0.7 mm or graphite inclusions interlayered with mica. With grades in excess of 25% Cg, the graphite is generally in fine independent grains less than 0.7 mm. Below 4% Cg, graphite tends to be scattered, fine grained inclusions in gangue minerals.

The mineralisation has been categorised by Focus into 3 types: massive (>60% graphite), semi-massive (20-60% graphite) and low grade (5-20% graphite) mineralization categories. All three types are intercalated within the mineralized envelope (repetition of several massive horizons with semi-massive and low-grade type horizons) with both edges of the deposit characterised by low grade type mineralization.

1.6 Exploration

Since 2014, following the completion of the NI 43-101 Report on the Lac Knife Graphite Feasibility Study, Quebec, Canada ("2014 FS"), exploration programs included: a due diligence evaluation, bulk sampling, LiDAR topographic surveys, ground geophysical surveys, and 2 diamond drilling exploration and definition drilling programs (2014 and 2018). Focus has contracted the services of IOS Services Géoscientifiques (IOS) of Chicoutimi, Québec to handle the exploration activity, logistics and sample preparation for the Project.

Three (3) soil sampling phases were conducted by IOS in 2018 and 2021 to obtain samples for environmental testing (multi-element, organic carbon, NO_2-NO_3, and hydrocarbon analyses). A total of over 513 soil samples were collected from 88 sites in the Project area.

Completion in summer 2021, under IOS' supervision of 15 shallow bore holes for geotechnical and hydrogeological characterization work, of which six (6) were twinned, for a total of 21 holes (Tremblay et al, in preparation).

The 2014 definition drilling portion called for thirty-nine (39) definition drill holes to tighten-up the FS resource definition area. The 2014 drilling campaign totaled 65 NQ-sized holes with a total metreage of 8,072 m.

The 2018 drilling campaign was designed to test the graphite potential in the deep western side of the open pit shell footprint as defined in the 2014 FS. A total of 10 drill holes were completed for a total length of 3,132 mm.

1.7 Mineral Processing and Testing

SGS Canada Inc. (SGS) at Lakefield, ON carried out bench scale and pilot plant testing on composite samples from the Lac Knife deposit. The design criteria data came from the drill core composite sample. The drill core composite sample was considered appropriate for the metallurgical work for the FSU. The following tests were carried out:

- Mineralogy;
- Crushing and Grinding Tests;
- Bench Scale Flotation Tests;
- Pilot Plant Test Work.

The mineralogical study by QEMSCAN identified graphite (21%), sulphides (17.3%), quartz (19.9%), clinopyroxene (11.4%), plagioclase (8.8%), mica (6.8%), carbonates (5.7%), orthoclase (4.9%), other silicates (1.9%) and chlorite (1.4%) as major minerals in the sample.

Crushing and grinding tests were done and were used for pilot plant equipment selection and set-up. Pilot plant data was used in the actual equipment design.

Bench scale tests were done for ore characterisation and flow sheet development.

The pilot plant test work optimised and confirmed the robustness of the flow sheet. The pilot plant data from Test #16 (PP-16) was the main source for design criteria, mass balance and equipment sizing. Some modifications were made to the flowsheet as part of the FSU.

The process consists of conventional one stage crushing. SAG mill and ball mill grinding with a coarse/flash flotation step in closed circuit with the ball mill. After ball mill grinding, a rougher flotation step is used for recovery of finer graphite flakes. The combined coarse and rougher flotation concentrate required upgrading. The upgrading steps were polishing, magnetic separation, primary cleaner flotation, screening into coarse and fine flakes, then polishing and cleaner flotation of each size fraction. The polishing step is the scrubbing of gangue minerals from the surface of graphite flakes by using ceramic media in tumbling mills. The PP-16 test results are given in Table 1.1, the -200-mesh fraction has been split into a -200+400 mesh and -200 mesh fractions based on fines polishing work performed in 2021.

Table 1.1– Size by Size Analysis of Final Graphite Concentrate (PP-16)

Concentrate Size Fraction	Weight (%)	Grade C(t) %
+48 mesh	10.0	99.7
-48+65 mesh	14.5	99.6
-65+80 mesh	8.5	99.8
-80+100 mesh	11.0	99.7
-100+150 mesh	20.4	99.3
-150+200 mesh	17.1	98.4
-200+400 mesh*	14.1	95.3
-400 mesh*	4.4	86.8
Total (Calculated)	**100.0**	**98.2**
Total Direct Assay	-	**97.8**

*Note:
The -200+400 mesh and -400 mesh fraction has been inferred based on PP-16 and the fines upgrading test work performed in 2021. The PP-16 -200 mesh material represent 18.6% of the weight with 93.3% C(t).

1.8 Mineral Resource Estimate

DRA completed a Mineral Resource Estimate (MRE) update for the Lac Knife Graphite Project located in the Esmanville Township, approximately 45 km from the town of Fermont.

This updated MRE follows infill and exploration drilling completed on the Project since the Feasibility Study (FS) published in 2014. A total of seventy-five (75) holes, with a cumulative length of 11,204 m, were drilled between 2014 and 2018, since the effective date of the previous MRE.

A total of sixty-five (65) holes, for a total meterage of 8,072 m, were drilled in 2014, of which twenty-six (26) holes were exploration holes and thirty-nine (39) were definition drilling to tighten-up the FS resource definition area. A total of ten (10) holes, for a cumulative length of 3,132 m, were later drilled in 2018 to test the graphite potential in the deep western side of the open pit shell footprint as defined in the 2014 FS.

The resource drill hole database used to perform the MRE update was supplied by IOS and contains 308 diamond drill holes with dips varying from -41º to -90º and drilled between 1989 and 2018. The total meterage of diamond drilling contained in the database is 33,322 m and includes 11,298 samples. Excluding the QA/QC sampling, a total meterage of 15,224 m was assayed to determine samples graphitic carbon content. Additionally, a total of 8,736 samples, still excluding the QA/QC samples, for a total meterage of 11,222 m, were assayed to determine their total sulphur content. Sampling for QA/QC purposes and the related results are discussed in Sections 11 and 12.

The MRE is based on the integration of geological, structural and grade information included in the resource drill hole database received and recorded solely from diamond core.

After the drilling database was audited and found suitable for its use to support a MRE, geology and Cg% grade were interpreted and modelled in 2D vertical cross sections followed by the construction of 3D wireframes of the mineralised zones. A rough cut-off grade of 3% Cg was used as a guide when delimiting the section polygons and 3D envelopes to discriminate contact limits between mineralised and un-mineralised zones.

A total of ten (10) mineralised envelopes were modeled, of which two (2) are the majority contributors in term of volume. Compositing was made at a fixed length of 1.5 m, which represents the statistical mode of the sampling length histogram.

The selected block size is 5 m × 5 m × 5 m and is based on the average drill spacing over the estimation domain, the projected mining equipment to be used and the shapes and sizes of the modelled geological envelopes. A majority coding principle was applied to code blocks falling within each geological solid. Geology and grades modelling, as well as resource estimation, were performed using the HxGN MinePlan 3D™ (previously MineSight™) package. Graphitic carbon (Cg%) was estimated using Inverse Distance Squared ("IDW2") which was found to be the more suitable estimation approach based on a thorough statistical and geostatistical analysis of grades. Following visual inspections of grades spatial distribution and the generation of cumulative probability plots, it has not been found relevant to apply a grade capping prior to compositing. Density was also interpolated using IDW2 based on a database of density measurements using water displacement according to surface dry ASTM-C127-07 protocol.

Three (3) successive passes were used to inform all blocks coded according to the majority coding principle and located within each mineralised envelope. The sizes of the search ellipsoid varied for each geological solid according to the results of variogram analysis performed. Search ellipses of variable orientations were also implemented to ensure a better match with the orientation of each geological solid.

For the first pass, and for all interpolated solids, the maximum and minimum number of composites to interpolate a block were respectively set to 15 and 9. The maximum number of composites allowed for a single hole was set to 3. Because of the combination of both constraints, at least three (3) holes were required to allow a block to be interpolated during this first pass. In the second pass, and for all interpolated solids, the maximum and minimum number of composites to interpolate a block were respectively set to 15 and 6. The maximum number of composites allowed for a single hole was set to 3.

Due to the combination of both constraints, at least two (2) holes were required to allow a block to be interpolated during this second pass. For the third pass, and for all interpolated solids, the maximum and minimum number of composites to interpolate a block were respectively set to 15 and 3. The maximum number of composites allowed for a single hole was set to 2. Because of the combination of both constraints, at least one (1) hole is required to allow a block to be interpolated during this third pass. A code matching approach was setup to ensure that search parameters and interpolation procedures are constrained to each mineralised solid.

A preliminary open pit shell was run on the estimated grade block model to constrain the resources and to support the Canadian Institute of Mining, Metallurgy and Petroleum's ("CIM") requirement that mineral resource should have a "reasonable prospect for eventual economic extraction". Only part of the mineralisation contained within the preliminary pit shell has been declared as Mineral Resource.

The Mineral Resource has been classified according to the CIM definitions for classification of Measured, Indicated, and Inferred Mineral Resources. All blocks falling within the preliminary resource pit shell and interpolated during the first and the second pass have been classified as Indicated Mineral Resources. All blocks interpolated during the third pass and falling within the preliminary resource pit shell have been classified as Inferred Mineral Resources. It has not been possible to define Measured Mineral Resources on the Lac Knife graphite deposit because of its structural complexity as revealed through the compilation and analysis of the results of the infill drilling program performed in 2014 after the lodging of the FS.

Schadrac Ibrango, P.Geo, PhD, MBA, consultant at DRA, is responsible for estimating the Mineral Resource. Dr. Ibrango is a Qualified Person ("QP"), independent of Focus, within the meaning of NI 43-101 – Standards of Disclosure for Mineral Projects of the Canadian Securities Administrators.

Applying a cut-off grade (COG) of 4% Cg, the disclosed MRE for the Project is 12.0 Mt of Indicated resources grading 15.34 % Cg for an estimated content of 1.7 Mt of in-situ natural flake graphite and 0.6 Mt of Inferred resources grading 16.90% Cg for an estimated content of 0.1 Mt of in-situ natural flake graphite (Table 1.2).

Table 1.2 – Lac Knife – Mineral Resources (4% Cg Cut-Off Grade)

Category	Tonnes (Mt)	Graphitic Carbon (%)	Concentrate (Mt)
Measured [1,2,3]	-	-	-
Indicated [1,2,3]	12.0	15.34	1.7
Total Measured and Indicated	**12.0**	**15.34**	**1.7**
Inferred [1,2,3,4]	0.6	16.90	0.1

1. Mineral Resources are inclusive of Mineral Reserves.
2. The Mineral Resources were estimated following the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
3. Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.
4. The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
5. Resources are constrained by a Pseudoflow-optimised pit shell using HxGn MinePlan software. Pit shell is define using 45-degree slope, $CAD 1,475/t concentrate sales price, $CAD 5.91/t ore mining costs, $CAD 34.42/t processing costs, $CAD 10.53/t G&A and $CAD 265.00/t for concentrate transportation costs, 90.7% process recovery, 97.8% concentrate grade and an assumed 50,000 tpy concentrate production.
6. The Effective Date is March 6, 2023.
7. Numbers may not add due to rounding.

1.9 Mineral Reserve Estimate

The open pit design includes 9,310 kt of Probable Mineral Reserves at a grade of 14.97% Cg. To access these reserves, 4,702 kt of overburden and 19,073 kt of waste rock must be mined. This total waste quantity of 23,775 kt results in a stripping ratio of 2.6 to 1. Table 1.3 presents the open pit mineral reserves for the Lac Knife deposit.

The Mineral Reserve Estimate for the Lac Knife deposit were estimated using the updated resource model that was prepared by DRA with an effective date of November 15, 2022. The Mineral

Reserves are the portion of the Measured and Indicated Mineral Resources that have been identified as being economically extractable and which incorporate mining losses and the addition of waste dilution.

Table 1.3 – Lac Knife Open Pit Mineral Reserves

Category	Tonnage (kt)	Cg Grade (%)
Proven	-	-
Probable	9,310	14.97
Proven & Probable	**9,310**	**14.97**

Notes:

1. Estimate of Mineral Reserves has been estimated by the Reserves QP.
2. The Mineral Reserves are reported in accordance with the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
3. The effective date of the estimate is March 6, 2023.
4. Mineral Reserves are included in Mineral Resources.
5. Pit shell was developed using a 45-degree pit slope, concentrate sales price of $1,375$/t concentrate, mining costs of $5.91 /t ore, $5.40 $/t waste, and 3.71$/t overburden, processing costs of 34.42 $/t processed, G&A cost of $10.53 $/t processed and transportation costs of 265 $/t concentrate, 90.7% process recovery and 97.8% concentrate grade and an assumed 50,000 tpa concentrate production.
6. The Mineral Reserves are inclusive of mining dilution and ore loss.
7. The open pit Mineral Reserves are estimated using a cut-off grade of 5.1 % Cg.
8. The strip ratio for the open pits is 2.6 to 1.
9. The Mineral Reserves are stated as dry tonnes processed at the crusher.
10. All figures are in metric tonnes.
11. Totals may not add due to rounding.

The pit optimisation analysis was completed using the MSOPit module of HxGN MinePlan®. The optimizer uses the Pseudoflow algorithm to determine the economic pit limits based on input of mining and processing costs, and revenue per block. In compliance with NI 43-101 guidelines regarding the Standards of Disclosure for Mineral Projects, only blocks classified in the Measured and Indicated categories drive the pit optimisation. Inferred resource blocks are treated as waste, bearing no economic value.

The pit optimisation analysis considered the Cg grades after mining dilution. Using the cost and operating parameters, a series of 23 pit shells was generated by varying the selling price (revenue factor) from $138 to $1,650/t of concentrate. The pit associated with a revenue factor of 0.60 was selected to guide the pit design. The chosen pit shell contains 10.6 Mt of Measured and Indicated Mineral Resources with a Cg grade of 15.79% and a stripping ratio of 1.9 to 1. This pit shell includes approximately 88 % of the Measured and Indicated Mineral Resources. The cut-off grade for the open pit was calculated to be 5.1% Cg.

An open pit was designed with an overall pit slope of 45° and 48° for the northeast and southwest walls respectively, based on based on a geotechnical study provided by Journeaux Assoc. in a report entitled "Preliminary Open Pit Slope Design – Lac Knife Deposit, July 24, 2014" and were adjusted to account for the shape of the pit. The pit has 10 m high benches, and the access ramp is 20 m wide with a maximum grade of 10%. The pit will be approximately 1,100 m long and 400 m wide at surface with a maximum pit depth from surface of 120 m. The open pit design includes 9,310 kt of Probable Mineral Reserves at a grade of 14,97% Cg. To access these reserves, 4,702 kt of overburden, 19,073 kt of waste rock must be mined. This total waste quantity of 23,775 kt results in a stripping ratio of 2.6 to 1.

1.10 Mining Methods

The mining method selected for the Project is a conventional open pit, truck and shovel, drill and blast operation. Vegetation, topsoil and overburden will be stripped and stockpiled for future reclamation use. The ore and waste rock will be mined with 10 m high benches, drilled, blasted, and loaded into rigid frame haul trucks with hydraulic excavators.

A topsoil and overburden stockpile has been designed on the west side of the open pit to the south of the plant site. Material that will be placed in this stockpile will be used for future reclamation. A waste rock pile has been designed between the plant site and the overburden stockpile. The waste rock pile will be built in 10 m high lifts and compacted by a bulldozer.

A mine plan was developed which supplies the required quantity of ore to produce 50,000 tonnes of concentrate per year for the 27-year life of mine (LOM) for the open pit. Mining will begin in a starter pit which will supply the majority of the run of mine ore for the first five (5) years of the operation. The purpose of the starter pit is to maximize the feed grade and minimize the strip ratio during the early years of production. The total material mined per year during the 27-year life of the open pit ranges from 760 kt in Year 1 to a maximum of 1,634 kt in Year 20. The average annual grade varies from 12.9 % to 17.6% Cg during the mine life.

The mining operations will be carried out by Focus personnel who will operate the mine all year round, seven (7) days per week, ten (10) hours per day. Overburden removal will take place during the winter to take advantage of the frozen ground conditions. Since the concentrator is designed to operate year-round both on the day and night shift, an ore stockpile was designed to maintain the run of mine ore feed to the plant during the nights and weekends.

The mine will use a fleet of five (5) to eleven (11), 40-tonne haul trucks, a hydraulic excavator with a 6 m^3 bucket, one (1) wheel loader, one (1) or two (2) track drills as well as a fleet of support and service equipment. Blasting will be carried out using bulk emulsion with a powder factor of 0.39 kg/t.

1.11 Recovery Methods

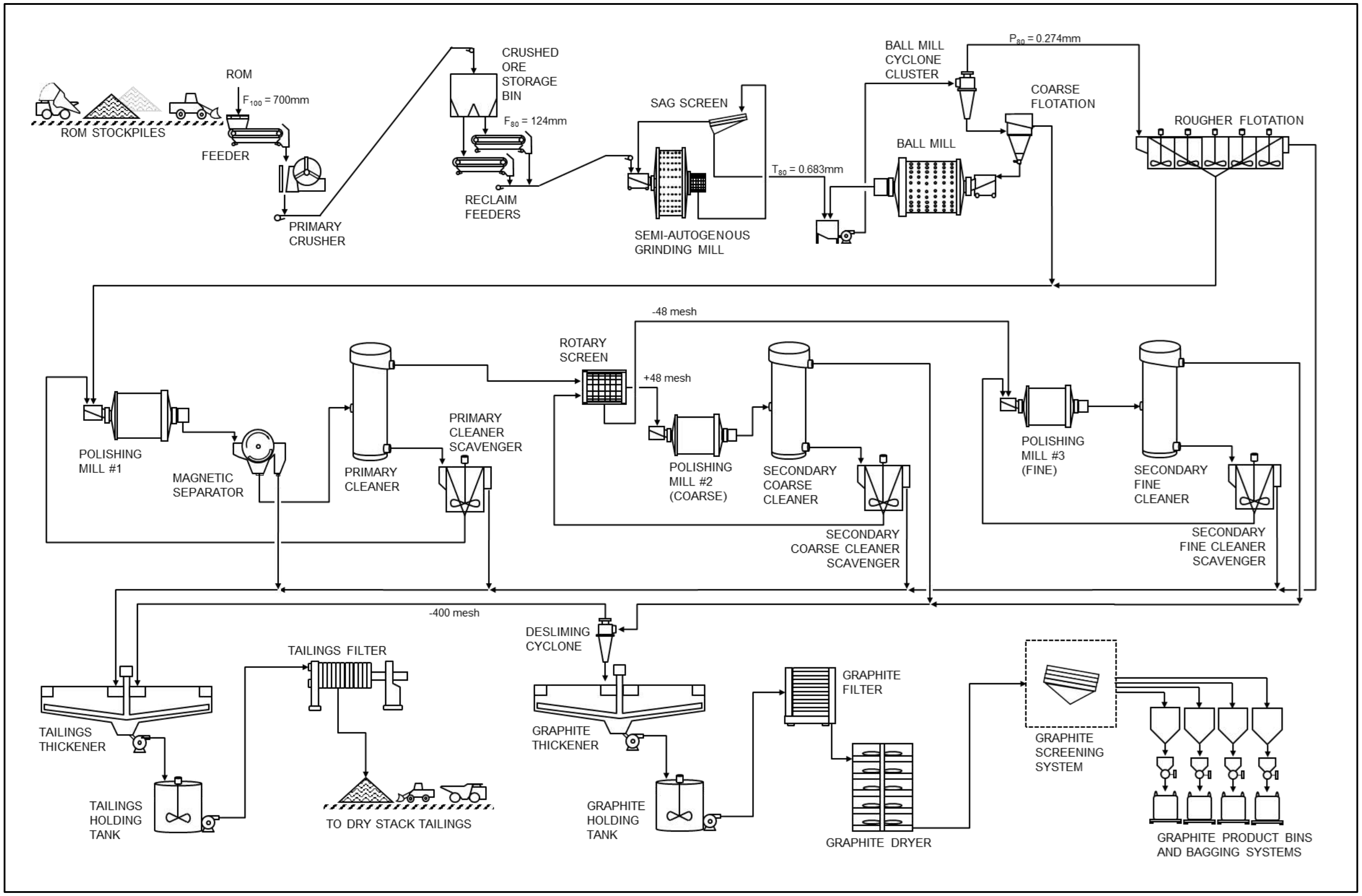
The Lac Knife concentrator is located near the open pit mine. As part of the FSU, the plant throughput was increased to produce 50,000 t/y of graphite, containing 47,781 t/y of high-grade salable concentrate. There is no current market for ultrafine (-400 mesh) graphite, and thus, it is assumed the balance is sent to tailings.

A simplified flow sheet is presented in Figure 1.1 and summarises the plant process. The ROM mineralised material will be transported to the primary jaw crusher. The crushed mineralised material is ground in a SAG mill. The SAG mill discharge is screened, and the screen oversize is returned to the SAG mill. The SAG screen undersize is pumped to the ball mill circuit. The ball mill is in closed circuit with the coarse/flash flotation cell and hydrocyclone. This arrangement will allow for removal of coarse graphite flakes as soon as they are liberated and helps maintain graphite flake integrity. The cyclone overflow is sent to rougher flotation. The rougher tailings are pumped to the final tailings pond. The combined coarse and rougher flotation concentrates are upgraded in a two-phase cleaning circuit to produce a high-quality graphite concentrate.

The combined coarse and rougher concentrates are polished in a polishing mill using ceramic media. The polishing mill scrubs the surface of the graphite flakes and thus removes the gangue minerals that were stuck to the flakes. The magnetic separation is to remove magnetic minerals that cannot be scrubbed off. The non-magnetic product is cleaned in the primary cleaner flotation column, before being screened and sent to the coarse and fine polishing circuits. The coarse and fine polishing circuits each contain a polishing mill and additional cleaner and scavenger flotation steps. The secondary fine cleaner concentrate and the secondary coarse concentrate are both pumped to the graphite concentrate thickener.

The final graphite concentrate 98.2%C(t) is filtered and dried to 0.1% moisture. After drying the product is dry screened and bagged in super sacks for transport. The flotation reagents are fuel oil and methyl isobutyl carbinol (MIBC).

Figure 1.1 – Simplified Front End Flow Sheet



Source: DRA, 2022

1.12 Infrastructure

Mining infrastructure, tailings management facility, as well as infrastructure and services have been added the mine and concentrator to complete the investment cost of the project.

The Lac Knife mine and processing plant substation will be fed through a new 34.5 kV overhead power line supplied and installed by Focus from the existing distribution point at the Normand substation.

The main access road will be developed based on the proposed new routing of Highway 389 thereby reducing the originally planned 28 km access road to 6 km.

In addition to site roads, water services, access to telecommunications, provisions have been made for ancillary buildings and facilities such as storage, office complex, change house and canteen.

Considering the proximity of a well-developed iron ore mining industry in the Fermont area and that the total workforce is not expected to exceed 109 people, no permanent camp has been provided for the Project. It is expected the nearby towns of Fermont or even Labrador City and Wabush will provide both work force and housing to the employees. Employees will be transported by company buses from Fermont over a distance of 35 km.

1.13 Tailings Storage and Water Management

Design studies were completed to assess tailings disposal requirements to safely store and manage the concentrator tailings from the Project. Options for management of process and other water flows on site were also assessed, to meet regulatory and international best practice guidelines for the Project's mine life.

A proposed site was identified prior to initiating the design studies for the Filtered Tailings Storage Facility (FTSF). The identified site was assessed against other potential locations within approximately 10 km radius from the mine to confirm that the selected site was the best alternative for the FTSF development. The assessment included a comparison of options for a range of factors including: the distance from the processing plant, environmental considerations (proximity to water bodies and the watershed), social considerations, regulatory and permitting and health and safety of workers and the public.

The FTSF site selected for the project is located about 2.0 km to the south-west of the open pit mine and the plant. The facilities included within the FTSF, and related infrastructure include the tailings containment impoundment area, a water storage pond and miscellaneous structures such as diversion channels or berms as required. The FTSF and water storage pond are fully lined and include measures for seepage collection and control.

The FTSF will be developed in stages over the operating life of the mine, to provide tailings disposal capacity as required. The operation of the FTSF will also allow for progressive reclamation of the facility, to reduce long-term post-closure costs. The operating plan has been developed to minimize the volume of free water which may be contained within the FTSF, with the water storage pond as the primary water management structure on site. The operational scheme proposes the transfer of free water from the FTSF to the water storage pond to allow for the sedimentation of fine particles and other minerals. Water will then be transferred from the polishing pond to the concentrator processing plant to be used for the mill's process needs or treated and discharged to the environment as required to maintain the site water balance.

1.14 Market Studies and Contracts

Benchmark Mineral Intelligence ("Benchmark") Flake Graphite Price Index is an independent marketing source who compiles international graphite prices for various commercial size fractions and concentrate purities. Benchmark was contracted to carry out an independent market study of the world supply and demand for flake graphite concentrate and provide a price forecast for the 2023-2027 period.

The demand for electric powered vehicles and the reduction of greenhouse gas emissions will see an increase in the demand for graphite flakes which is one of the major components of the batteries used for these vehicles.

Demand for locally supplied graphite will increase due to the demand, government support and easing the reliance on the China market for these products. Lac Knife graphite concentrates are very high grade and can be utilised in both the battery market as well as the high-end user markets which demand a higher selling price due to the lack of available high grade graphite flakes.

Based on this information, Focus has provided the price forecasts given in Table 1.4 for the Lac Knife graphite concentrates. The sensitivity analysis examines a range of prices that are 30% above and below the base case prices.

Table 1.4 – North America East Coast, Lac Knife Basket, Nominal

Concentrate Size Fraction	**Weight** (%)	**Grade** Cg%	**Price** USD/t
+48 mesh (Jumbo)	10.0	99.7	$2,040
–48+80 mesh (Large)	23.0	99.7	$1,868
–80+150 mesh (Intermediate)	31.4	99.4	$1,762
–150+400 mesh (Fine)	31.2	97.0	$1,579
–400 mesh (Tailings)	4.4	86.8	$0
Weighted Average	**100.0**	**98.2**	$1,679

1.15 Environment Studies Permitting and Social or Community Impact

In order to obtain its Certificate of Authorisation (CA) from the Quebec government, Focus must submit an Environmental and Social Impact Assessment (ESIA) study for the Lac Knife project. An ESIA study was initiated in 2013 with the consultation of two first nation (Innu) communities and several stakeholders potentially impacted by the Project. Consultation with the Uashat Mak-Mani-Utenam Innu band council led to the signing of a Pre-Development Agreement in October 2014. Focus submitted a first series of documents relating to the Lac Knife ESIA was to MELCCFP for review in 2014, subsequent to which the Company received two (2) series of questions.

The final set of documents related to the second series of questions is expected to be submitted in the fall of 2023. Current assessment of the Project's impacts is preliminary and will be detailed in the upcoming update of the ESIA study.

Several baseline studies have been completed since 2013 to set environmental reference values related to soils, lake sediments, surface water, groundwater, and noise. The Lac Knife area currently benefits from clean air owing to its remote location away from any human or industrial activities. Air quality modeling is underway to evaluate potential dispersion of contaminants, including dust, during the construction and operation phases. Geochemical characterization of soils and lake bottom sediments highlighted local, naturally occurring concentrations of certain metals exceeding the quality criteria recommended by the regulations. As there is no other industrial activity in the Lac Knife area, the sources of these metals are interpreted to be natural, and thus can be used as reference background.

Hydrogeochemical modelling is underway to assess ground water quality, which could be compared to the quality of contact water from the tailings and waste rock storage facility and develop conceptual approaches for the water treatment plant. Groundwater, which flows toward Lac Knife and the Pékans River sub-watershed, are naturally slightly acidic to locally alkaline and characterised by sulfide (S^{2-}), manganese (Mn) and mercury (Hg) concentrations higher than the usual quality criteria which will serve as a benchmark to monitor contamination through a set of 30 piezometers. A noise characterization study indicated that noise annoyance from operation is not to be expected by residents, although it may impact sensitive wildlife such as woodland caribou.

The Project is located within the Spruce Moss – East domain of the Continuous Boreal Forest sub-zone and is characterised by alternating small hills and depressions categorized as wetlands. In 2005, the Québec government proposed the creation of the Moisie River aquatic reserve (MRAR) protected area to protect the river's exceptional salmon habitat from hydroelectric development. The Lac Knife mining titles predate the onset of this aquatic reserve and is hence excluded but partly enclaved in the MRAR.

Several surveys were carried out since 2014 to inventory vegetation, amphibians, reptiles, mammals, fish, bats, and birds. Results shows that no vegetation species are considered as threatened, vulnerable or exotic invasive were observed in the Project area. The little brown bat and bald eagles, designated as threatened or vulnerable species, have been confirmed to inhabit near the mining site. Woodland caribou were not observed during field studies conducted recently.

Deforestation and site preparation as well as presence of infrastructure and machinery operations will impact the physical and biological environments surrounding the Project. Mitigation of the impacts predicted over the entire life of mine will be addressed by Focus in the coming months through the public consultation process.

Acidic mining drainage has been identified by Focus as a key issue since up to 30 % pyrrhotite and pyrite are associated with the graphite mineralization and host rocks. Leaching and kinetic testing carried out since 2012 showed that waste rock material ranged from non-potentially to potentially acid generating (PAG). Several metal contaminants are susceptible to be leached from waste rock due to acid generation. Ore and tailings samples have been classified as PAG and potentially leachable for several metals and sulphate up to concentrations that may exceed the groundwater quality criteria. Some ore samples showed potential for self-heating. The seriousness of this acid generation potential is enhanced by the proximity of the Project to the Aux-Pekans River sensitive ecosystem.

Non acid generating (NAG) waste rock and acid generating tailings will be stored into two (2) separate facilities. Waste rock will be recovered by a layer composed of overburden material and topsoil to provide a growth medium for vegetation. The tailings, composed of filtered residues containing less than 10% pore water, will be stacked dry and contained by berms of non-PAG waste rocks. Tailings will be layered with dolomitic marble interlayers to mitigate the generation of acid mine drainage.

This marble will be extracted from a quarry located near the Lac Knife mining site (Montagne-aux-Bouleaux) and will be periodically added to the tailings and waste rock. A geosynthetic liner and draining system will be installed underneath the tailings pile and the waste rocks, ore pads and water storage pond. A network of drainage canals will be installed at the base of these facilities to collect any runoff or seepage water to divert it to a water treatment plant. Closure activities for the FTSF will consist in capping the tailings with layers of sand and a geosynthetic liner followed by overburden material and topsoil to provide a growth medium for vegetation. The water storage pond will be drained and reclaimed.

Several parameters such as meteorology, atmospheric dust dispersion, hydrology, hydrogeology, groundwater and final effluent quality and vegetation will be monitored from before at the onset of mining operations and until the post-closure phase. A weather station will be installed near the mine site and atmospheric sampling stations will be positioned in strategic locations.

Observation wells located near infrastructure at risk of environmental contamination, will be used for post-restoration groundwater quality monitoring. The final effluent will be sampled periodically until metals and chemical contaminants reach the recommended concentrations mentioned in the Certificate of Authorization. The water treatment plant must be maintained in operation until long-term water quality is achieved in final effluent. A revegetation monitoring program will be maintained until recolonization has been achieved over reclaimed and perturbed natural areas.

Focus will rehabilitate the mining site to a state appropriate for use by adjacent communities including Fermont residents, First Nations and other future users of the territory. Such work will include removal of all infrastructures, revegetation of lands including of the tailings storage facility and water storage pond. A cost-benefit analysis will be undertaken to evaluate the possibility of back-filling the pit. If such a rehabilitation method is not possible, the pit will be filled with water and the surroundings will be secured.

1.16 Capital and Operating Costs

The Project scope covered in this Report is based on the construction of a greenfield mining and processing facility with an average mill feed capacity of 365,320 t/y of ore and producing 50,000 t/y of graphite concentrate.

The capital and operating cost estimates related to the mine, the concentrator, and all required facilities and infrastructure have been developed by DRA or consolidated from external sources.

The capital and the operating costs are reported in Canadian Dollars (“$”).

1.16.1 Capital Cost

The capital cost estimate (Capex) consists of the direct and indirect capital costs as well as contingency. Provision for sustaining capital is also included, mainly for tailings storage expansion. Amounts for closure and rehabilitation of the site and required working capital have been estimated as well.

The pre-production initial capital cost for the scope of work is $236.9 M, of which $181.6 M is direct cost, $30.3 M is indirect cost and $25.0 M is contingency. A provision of $49.6 M is also required for sustaining capital which excludes the amounts for closure and rehabilitation of the site and working capital.

Table 1.5 presents a summary of the pre-production initial capital and the sustaining capital costs for the Project.

Table 1.5 – Summary of the Investment Capex Estimate

Description	Pre-Prod Initial Capex ($ M)	Sustaining Capex ($ M)	Total Investment Capex ($ M)
Direct Costs			
Mine Development – Pre-stripping	8.5	0.0	8.5
Mining Equipment and Facilities	18.8	18.9	37.7
Crushing and Concentrating	99.3	0.5	99.8
Tailings Storage and Water Management	22.3	30.2	52.5
Concentrate Storage and Handling	1.8	0.0	1.8
Infrastructure	11.0	0.0	11.0
Power and Communications	19.9	0.0	19.9
Sub Total Direct Cost	**181.6**	**49.6**	**231.2**
Indirect Costs			
EPCM	16.0	0.0	16.0
Owner's Costs	14.3	0.0	14.3
Sub Total Indirect Cost	**30.3**	**0.0**	**30.3**
Contingency	25.0	0.0	25.0
Total	**236.9**	**49.6**	**286.5**

The totals may not add up due to rounding.

1.16.2 Operating Cost

Operating costs (Opex) have been developed for the Project and cover Mining, Processing, Site Services and Administration. The sources of information used to develop the Opex include in-house databases and outside sources particularly for materials, services and consumables. All amounts are in Canadian dollars ($), unless specified otherwise. The LOM average Opex, given as dollar per tonne of concentrate, is summarised in Table 1.6.

Table 1.6 – Summary of LOM Average Opex

Area	Avg Operating Cost ($/tonne of conc.)
Mining	129.77
Processing and Tailings	330.82
Tailings Cost	4.38
Plant Administration, Infrastructure & Tech. Serv.	95.78
Total Average Operating Costs	**560.75**

Table 1.7 presents the estimated personnel requirements for the Project. This workforce is comprised of staff as well as hourly employees. Supervisory personnel as well as the administration employees will work on a 5 days per week basis.

The hourly workforce at the plant will work on rotation to provide 24 hour per day coverage, 7 days per week. It is assumed that all employees will come from the area. The hourly workforce for the mining operations will be on a 10-hour, 7 day per week basis.

Table 1.7 – Total Personnel Requirement

Area	Number
Mining	30
Processing	60
Plant Administration, Infrastructure & Tech. Serv.	19
Total Manpower	**109**

1.17 Economic Analysis

The economic/financial analysis for the Project. is based on fourth quarter 2022 price projections in U.S. currency and cost estimates in Canadian currency. An exchange rate of 0.736 USD per CAD is assumed to convert USD market price projections and particular components of the pre-production Capex and Opex into CAD. The annual cash flow model prepared in Microsoft Excel is based on a graphite concentrate production rate of 50,000 tonnes per year. No provision is made for the effects of inflation. The evaluation is carried out on a 100%-equity basis.

The FSU is based on a 27-year LOM and produced a Pre-tax Net Present Value ("NPV") of $500.6 million calculated at a discounted cash flow ("DCF") rate of 8%. Pre-tax, the financial model has an Internal Rate of Return ("IRR") of 29.1% and a capital payback period of 2.88 years.

The after-tax financial model has an NPV of $284.8 million calculated at a DCF rate of 8%, and with an IRR of 22.6% and a capital payback of 3.38 years.

Table 1.8 – Project Evaluation Summary

Description	Total (Million CAD)
Total Revenue (LOM)	2,759.2
Total Concentrate Transport Cost (LOM)	194.1
Total Operating Costs (LOM)	701.5
Pre-production Capital Cost	236.8
Initial Working Capital	7.2
Total Sustaining Capital Cost (LOM)	50.5
Mine Closure and Rehabilitation	10.0

Table 1.9 – Financial Results Summary

Description	Pre-Tax	After Tax
Total Cash Flow ($ Million CAD)	1,761.4	1,080.3
NPV@ 8% ($ Million CAD)	500.6	284.8
NPV@ 6% ($ Million CAD)	671.1	392.7
NPV @ 10% ($ Million CAD)	376.6	206.0
IRR (%)	29.10	22.57
Payback Period (years)	2.88	3.38

1.18 Other Relevant Data and Information

A project implementation schedule was prepared for the Project. The design and construction period through to commissioning and start-up is slated to be 26 months. Prior to the start of the project, it would be necessary to start the bid process for the long-term equipment as well as obtain quotations for the design and construction of the main incoming access road and installation of the power line from Fermont.

The Project will be developed based on an engineering, procurement, construction management (EPCM) style project whereby one EPCM contractor will have full responsibility for the Project, leading all sub-consultants and contractors, and report to Focus Management. The EPCM contractor will conclude its responsibility upon the successful completion of the commissioning and start-up of the Project.

1.19 Interpretation and Conclusions

1.19.1 Mineral Resource Estimate

The Mineral Resource Estimation performed in 2022 is an update of the MRE performed in 2014 following additional drilling on the project since this date. Drilling added was targeted to better explore the area of the open pit footprint defined during the FSU, explore an area located on the west of the open pit footprint and test an area located in the north and called "Zone North". In 2014, a total of seventeen (17) exploration holes were drilled in the Zone North. Drilling was widely drilled and the more interesting area, for a MRE perspective, was drilled at a drill spacing of about 200 m. Despite this wide drilling spacing, an attempt was made to estimate the volumetric potential of the area. It accounts to approximately 829,000 m^3 and, with an assumed average density of 2.81, there is a potential tonnage of 2.33 Mt.

The length weighted grade average of samples constrained within the modelled solid for Zone North is about 10% Cg. Although, this area offers a grade average less than what was defined in the 2014 FS open pit shell, it remains a potential opportunity for future exploration with the intent to better define the Mineral Resources once grades and geological continuity are confirmed.

In the next phase of the Project, DRA recommends exploring and gathering additional data for a better understanding of the Zone North.

1.19.2 Mineral Reserve Estimate

Proven and probable mineral reserves were developed from the open pit mine design for the Lac Knife deposit. These mineral reserves which account for dilution and ore loss formed the basis of the life of mine plan that was prepared.

The open pit design includes 9,310 kt of Probable Mineral Reserves a grade of 14.97% Cg. In order to access these reserves, 4,702 kt of overburden, and 19,073 kt of waste must be mined. This total waste quantity of 23,775 kt results in a stripping ratio of 2.6 to 1. At the planned production rate of 345 kt of ore per year, the pit contains roughly 27 years of mineral reserves.

1.19.3 Process

The objective of achieving a graphite concentrate with grade of 97.8% C and recovery 90.7% was achieved during a pilot plant testing program conducted at SGS Minerals in Lakefield in 2013-2014.

The process plant is designed based on the production of 50,000 dry t/y of graphite concentrate containing 47,781 dry t/y of high-grade of 97.8% C(t) salable graphite concentrate from a feed grade of 14.8% C(t). The total graphite recovery of 90.7% and the salable graphite concentrate recovery of 86.7% (excluding ultrafine) are average figures based on the pilot plant test work results and may change depending on the ore composition. A suitable process flow sheet includes crushing, grinding, polishing, flotation, concentrate dewatering and drying, concentrate screening and bagging, and tailings filtration and loadout. Mining equipment, tailings storage facility, concentrate transportation as well as infrastructure and services have been added to complete the investment cost estimate of the Project.

1.19.4 Environment

The consultation and information process, initiated in 2013 with First Nation communities and stakeholders concerned by the Project, highlighted several issues regarding water quality, especially that of the *Rivière-aux-Pékans* salmon population, recreational activities and noise levels for some local tenants due to access road traffic and mining operations. As the Project is located on Innu Takuaikan Uashat mak (ITUM) ancestral territory, First Nation representatives have required that a communication and consultation strategy being put in place to be kept informed of the project development and assessment of environmental impact. Moreover, Innu community expressed that they are expecting participation to potential economic fallout of the Project. These intentions led to draft a pre-project development agreement signed in 2014 between Focus and ITUM.

Even if the Lac Knife area is characterised by a clean environment, several studies carried out to set environmental baselines highlighted metal concentrations exceeding the quality criteria recommend by regulations. Since no industrial activity is present in the Lac Knife area, the acidic pH of water and metal contents exceeding references threshold are interpreted to be natural and mainly related to geological processes for soils, bottom lake sediments and groundwater.

Woodland caribou were not observed during field studies, but the little brown bat and bald eagles, which are designated as threatened or vulnerable species, have been confirmed to inhabit near the Project site. Mitigation measures should be considered to preserved bats such as installation of bat boxes or maintain a riparian strip along most water bodies in the mining site area.

Acid mine drainage has been identified as a key issue with the presence of up to 30 percent reactive sulphides (pyrrhotite, pyrite) associated with graphitic ore and found locally in waste rocks, which are susceptible to generate acid mining drainage through their oxidation. Leaching and kinetic testing carried out since 2012 showed that ore and tailings are potentially acid generating (PAG) while waste rock ranged from non-PAG to PAG. Ore, tailings, and waste rock are also considered as leachable for several metals and sulphate while some ore samples showed potential for self-heating mainly due to abundance of pyrrhotite. Mitigation measures must be implemented to prevent such drainage that could contaminate and damage Lac Knife and *Rivière-aux-Pékans* ecosystems.

The seriousness of the acid generation potential is enhanced by the proximity of the project to the Aux-Pékans River which is a sensitive ecosystem and a tributary of the Moisie River, well-known for its salmon habitats and fishing activities. To mitigate acid mine drainage generation and/or contamination of groundwater, tailings will be filtered and stored as dry stack amended with dolomitic marble layers. Tailings will be progressively rehabilitated during the operations.

A geosynthetic liner and a draining system will be installed underneath the tailings, waste rocks and ore facilities to collect any runoff or seepage water and divert it to a water storage pond. Water will be pumped toward a treatment plant before recycling or discharge in the final effluent.

Closure activities will include capping the tailings stack with sand and a geosynthetic liner followed by overburden material and topsoil to provide a growth medium for vegetation. A revegetation monitoring program will be maintained until recolonization has been achieved. Periodic monitoring and sampling of surface water and groundwater will continue after closure until their qualities reach background levels requested by regulatory agencies. The water treatment plant would be maintained in operation until stable water quality is achieved in final effluent. The water storage pond will be drained and reclaimed.

The main source of greenhouse gas (GHG) emissions directly related to the mining operation relates to internal combustion from mobile equipment which should emit 1,970 tonnes of CO_2 per year over more than 27 years. The Company is studying the development of a carbon free mining operation using zero-emission vehicles as these become more readily available and competitively priced. Similarly, shipping of the graphite concentrate to Baie-Comeau is to be conducted by electric trucks as soon as these are commercially available. Finally, CO_2 is to be released through the sulphatation process in the tailings, the magnitude of which is to be documented.

Focus will evaluate potential options to optimize the recovery and market pyrrhotite and ultrafine graphite, not contemplated in the current study. Partial or total recovery of these minerals should help promote the social acceptability of the Project and could significantly reduce acid generation from the tailings. A scoping and market study for the transformation of graphite concentrate into a value-added product will be launched in 2023.

1.20 Recommendations

1.20.1 PROCESS

Based on the work performed and the test results, additional work can be performed to both optimise and de-risk the process design and equipment selection. It is recommended to perform certain work for the next stage of the Project:

- It is recommended to perform dynamic thickening test work on representative tailings material to provide additional confidence in the thickener design and selection.
- Due to the high quantity of graphite in the feed, the use of a jaw crusher as primary crusher should be re-evaluated as part of the next phase. Some reference projects have experienced difficulty with material slipping in the crushing zone of a jaw crusher. The use of a primary impactor, mineral sizer, or ore pusher should be evaluated and potentially tested.
- It is recommended to evaluate direct filtration of flotation concentrates. Several graphite operations have noted difficulty with graphite thickening. Direct filtration of flotation concentrate should be tested to determine the feasibility of elimination of the concentrate thickener.
- Material characteristics for storage and handling of run of mine ore, crushed ore, filter cake, and dried products should be determined. These tests should be carried out at a specialized laboratory to determine parameters for proper bin, pile, hopper, and chute design.
- Case studies of graphite sifting have shown it to be effective, however the sifters used in the FSU have not been tested with Lac Knife graphite. It is recommended to test the sifting characteristics of Lac Knife graphite concentrate. This may require producing new flake graphite depending on remaining quantities from the 2014 pilot plant run.
- Due to the importance of material humidity for dry stack tailings, vendor testing of tailings filtration is recommended prior to purchase of the tailings filters.
- Comprehensive variability flotation testing is recommended to determine the range of expected flake size distribution. This may require resizing of the secondary cleaning circuits to allow for larger fluctuations in flake size distribution.
- Following the variability testing, it is recommended to perform screening testing on a rotary screen to confirm the rotary sizing screen requirement.
- The current design considers modified ball-mills as polishing mills. It is recommended to investigate the use of heavy-duty drum scrubbers as polishing mills during detailed engineering and confirm the feed percent solids for each mill.
- The current design rejects the -400-mesh graphite to tailings as there is limited market for the low purity fine material. An investigation into the possible upgrading of fines during micronization should be investigated and economics of this scenario are recommended to be evaluated in detailed engineering.

- It is recommended to perform deliming trials to confirm desliming requirements during detailed engineering. The current design considers a single stage of cycloning, however; to achieve good separation efficiency, two-stage cycloning may be required.
- It is recommended to perform materials handling trials on the graphite concentrate to confirm the dense phase conveyance requirements.
- Based on the marketing strategy of the graphite concentrate, it is recommended to confirm product bagging requirements.

1.20.2 INFRASTRUCTURE

As the Project progresses to further development stages, a detailed geotechnical field investigation will be required to confirm civil design criteria related to foundations of mills and the process plant as well as for other infrastructure such as administration offices, run-of-mine stockpile, electrical substation and tailings management facility areas.

Investigation to locate gravel pits for suitable construction materials of the various dykes, pads and roads as well as concrete aggregates should be undertaken during the detailed engineering phase to determine the quantities that area available and at what distance they are located from the various facilities.

An analysis should be undertaken to determine the benefits of using geothermal heating systems for the concentrator facility and drying operations. New technologies are continuously being developed to reduce the carbon impact on mining operations of which geothermal heating is one such development.

1.20.3 FILTERED TAILINGS MANAGEMENT FACILITY

Design studies were completed to assess tailings disposal requirements to safely store and manage the concentrator tailings from the Lac Knife Project. Options for management of process and other water flows on site were also assessed, to meet regulatory and international best practice guidelines for the Lac Knife Project's mine life.

A proposed site was identified prior to initiating the design studies for the Filtered Tailings Storage Facility (FTSF). The identified site was assessed against other potential locations within approximately 10 km radius from the mine to confirm that the selected site was the best alternative for the FTSF development. The assessment included a comparison of options for a range of factors including: the distance from the processing plant, environmental considerations (proximity to water bodies and the watershed), social considerations, regulatory and permitting and health and safety of workers and the public.

The FTSF site selected for the project is located about 2.0 km to the southwest of the open pit mine and the plant. The facilities included within the FTSF, and related infrastructure include the tailings containment impoundment area, a water storage pond and miscellaneous structures such as diversion channels or berms as required. The FTSF and water storage pond are fully lined and include measures for seepage collection and control.

The FTSF will be developed in stages over the operating life of the mine, to provide tailings disposal capacity as required. The operation of the FTSF will also allow for progressive reclamation of the facility, to reduce long-term post-closure costs. The operating plan has been developed to minimize the volume of free water which may be contained within the FTSF, with the water storage pond as the primary water management structure on site. The operational scheme proposes the transfer of free water from the FTSF to the water storage pond to allow for the sedimentation of fine particles and other minerals. Water will then be transferred from the polishing pond to the concentrator processing plant to be used for the mill's process needs or treated and discharged to the environment as required to maintain the site water balance.

1.20.4 Environmental Considerations

Based on work carried out on the Project, the following tasks and studies are recommended:

- Focus must resume the community consultation process initiated with the First Nations, the Caniapiscau MRC and other local stakeholders. These consultations shall provide an update on recent developments related to the Project, answer questions and document the concerns and expectations about the Project from the various stakeholders. The informative website dedicated to the Project (https://www.lacknife.com/) should be updated and upgraded with the latest developments on the Project including FSU highlights and provide an interactive space for communities and stakeholders to ask questions and obtains answers about their various concerns.
- Focus must complete work and studies related to the second set of MELCCFP questions from MELCCFP, including ground water quality modeling and dust dispersion modeling, and update the ESIA study for the Project. Once the ESIA study is approved by MELCCFP, Focus must set a community liaison, information, and consultation strategy before initiating the public information and consultation process.
- Once the filtered tailings storage facility concept is approved by MELCCFP, Focus must initiate a tailings dam break study and evaluate the risks associated with the frequencies and rates of precipitation related to climate changes or the failure of the dam in case of earthquake.
- A noise reduction and vibration study should also be carried out to evaluate the effects of the operations such as blasting, trucking.
- A scoping and market study on transformation of Lac Knife graphite concentrates into value added product is to be initiated as requirement for the Certificate of Authorization.
- A feasibility study related to the cost-benefits of backfilling the pit is to be initiated as requirement for the certificate of authorization.

- A mine closure and rehabilitation plan must be provided to MELCCFP as requirement for the certificate of authorization.
- Upon granting of the Certificate of Authorization, Focus will be allowed to apply fora mining lease from the MERN and start the construction of infrastructure related to the mining project including the tailings, waste rock, overburden, ore, and mining water storage areas.
- Once the mining lease is obtained, a monitoring committee must be organized and maintained until all the work indicated in the rehabilitation and restoration plan has been completed.
- Although not a requirement, it is recommended to undertake a mine-scale geo-environmental characterization study of tailings and waste rocks. Such type of study is more exhaustive than those carried out for the ESIA since it involves characterizing the acidification and metal leaching potentials for several sections of the pit. As the geo-environmental study should be carried out before the beginning of operations, it must help a) to optimize the tailing and waste rock management process and b) reduce the operating costs.
- Geo-environmental study must include kinetic testing such as column tests and field test pads (or barrels) should be carried out on waste rocks and tailings. Waste rocks selected for tests must be those characterised as potentially acid generating (PAG) and tailings should be amended with dolomitic marble interlayers in the columns and field pads to replicate the expected profiles in the FTSF. Results are required to design the water treatment plant.
- CO_2 generation through the sulphuration of dolomite must be evaluated, concomitantly with kinetic testing of tailings for acid generation.
- Since streams, lakes or ponds in the vicinity of the Project are to be considered as potential fish and benthic organism habitats or spawning ground, a monitoring program shall be implemented to monitor quality of groundwater, surface water and sediments in these habitats.
- A weather station shall be installed on the Project site as well as atmospheric sampling stations to monitor dust and atmospheric contaminants. Such stations shall be installed prior to beginning of the construction phase.
- As the mine site is located in the distribution range of woodland caribou, occurrences and displacements of woodland caribous shall be monitored.
- Complete additional drilling to better define the potentially acid generating rock (PAG) and non-acid generating rock (NAG) inside the pit.

1.20.5 Other Considerations

Although at this time, Focus is basing the FSU on conventional diesel-powered mining equipment due to the significant upfront capital investment required to convert mobile mining equipment to all electric, the Company is studying the development of a carbon free mining operation using zero-emission vehicles as these become more readily available and competitively priced. Canada offers grants and other incentives to companies developing products using carbon-free technologies and Focus should continue discussions with all government entities offering these.

Although the Report cannot include potential grants and other incentives for the transition to clean technologies in the economic analysis presented in Section 22, there are a few impactful incentives that will be investigated in 2023 and future years. These include the 30% cent refundable tax credit on heavy-duty ZEV used in mining and construction as well as on charging and refuelling infrastructure introduced by the Federal government in its fall 2022 Fall Economic Statement, as well as potential incentives from the Québec Government.

In addition, Canada and the US are looking at the future internal reliance of critical minerals of which natural crystalline graphite is one. The Project, with its high-grade graphite ore body and its potential carbon-free footprint, is a perfect candidate to meet the requirements of government financial assistance programs designed to support the development of North American critical mineral projects including the transformation of mine concentrates into specialized valued-added products for use in high performance renewable energy applications and other hi-tech applications, such as those provided under Québec's Plan for the Development of Critical and Strategic Minerals (2020-2025), the Canadian government's Critical Minerals Infrastructure Fund and under the US Department of National Defence's Defense Production Act (DPA) Title III Investments Program.

Furthermore, laboratory work should proceed on assessing the applicability of the -400 mesh to tailings material for potential used as additives in the steel industry or as powders in industrial applications such as paints, conductive coatings, lubricants, metal casting and polymer composites. This could result in additional sales and a reduction of tailings to the FTSF.

2 INTRODUCTION

Focus Graphite Inc. ("Focus" or "the Company") is a Kingston, Ontario, based company contemplating a project for the construction, installation and operation of a graphite mine and graphite ore processing facility (the Lac Knife Graphite Project or the Project) to be located near Fermont, Québec. The Project will be developed based on a conventional open-pit, shovel and truck and drill and blast mining operation using mobile mining equipment powered by diesel engines. The Company is studying the development of a carbon free mining operation using zero-emission vehicles as these become more readily available and competitively priced.

Mineral resources were updated based on additional drilling conducted on the Lac Knife graphite deposit from 2014 to 2018 and these results formed the basis for the Feasibility Study Update (FSU).

This National Instrument 43-101 (NI 43-101) Technical Report (Report) on the Project has been prepared at the request of Focus to present the FSU major findings.

The FSU Report was prepared by DRA Global Limited (DRA) with economic results completed on March 6, 2023.

The effective date of the Technical Report is March 6, 2023.

2.1 Terms of Reference – Scope of Work

DRA was requested by Focus to provide an FSU Report for the exploitation of the Lac Knife graphite deposit. DRA was to provide leadership for the mining, process design, tailings, infrastructure, and compilation of capital and operating cost estimates at a confidence level of ±15 % as well as the economic analysis of the Project. The mandate was to prepare an updated NI 43-101 Technical Report integrating the geology and mineral resources as well as metallurgical testing for which information was provided by other consultants. Particular attention was given to developing carbon-neutral mining and processing technologies in an effort to significantly improve the environmental performance of the Project.

Process flow sheets were developed from a recent metallurgical and pilot plant testing program performed by SGS Mineral Services, a division of SGS Canada Inc., in 2022 as well as those tests provided as part of the NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study, Québec, Canada prepared for Focus by Met-Chem in 2014 ("the 2014 FS"). The capital cost and the operating cost estimates have been developed for a 50,000 t/y milling rate.

The FSU is intended to establish the viability of the Project at a production rate of about 50,000 tonnes of graphite concentrate in order to justify proceeding with the implementation of the Project.

Services from specialised firms were retained during the execution of this scope of work.

2.2 Qualified Persons

At the request of Focus, DRA has been retained to prepare a NI 43-101 Report for the Project with the participation of specialised consultants.

Table 2.1 provides a detailed list of Qualified Persons as defined in Section 1.5 of NI 43 101 and their respective sections of responsibility.

The certificates for Qualified Persons (QP) can be found under Section 29 of the Report.

Table 2.1 – Qualified Persons and their Respective Sections of Responsibility

Section	Title of Section	Qualified Person	Company
1	Summary	D. Gagnon, P. Eng and related QPs	ALL
2	Introduction	D. Gagnon, P. Eng	DRA
3	Reliance on Other Experts	D. Gagnon, P. Eng	DRA
4	Property Description and Location	C. Bisaillon, P. Eng	DRA
5	Accessibility, Climate, Local Resources, Infrastructure and Physiography	C. Bisaillon, P. Eng	DRA
6	History	C. Bisaillon, P. Eng	DRA
7	Geological Setting and Mineralization	C. Bisaillon, P. Eng	DRA
8	Deposit Type	C. Bisaillon, P. Eng	DRA
9	Exploration	C. Bisaillon, P. Eng	DRA
10	Drilling	C. Bisaillon, P. Eng	DRA
11	Sample Preparation, Analyses, and Security	C. Bisaillon, P. Eng	DRA
12	Data Verification	C. Bisaillon, P. Eng	DRA
13	Mineral Processing and Metallurgical Testing	J. Zampini, P. Eng	DRA
14	Mineral Resource Estimates	S. Ibrango, P. Geo., PhD, MBA	DRA
15	Mineral Reserve Estimates	G. Prevost, P. Eng	DRA
16	Mining Methods	G. Prevost, P. Eng	DRA
17	Recovery Methods	J. Zampini, P. Eng	DRA
18	Project Infrastructure	D. Gagnon, P. Eng	DRA
18.6	Tailings Management Facility	L. Botham, P. Eng	NewFields
18.7	Site Water Management	L. Botham, P. Eng	NewFields
18.8	Water Treatment Plant	L. Botham, P. Eng	NewFields

Section	Title of Section	Qualified Person	Company
19	Market Studies and Contracts	D. Gagnon, P. Eng	DRA
20	Environment Studies, Permitting and Social or Community Impact	D. Vermette, P.Geo	IOS
21	Capital and Operating Costs	D. Gagnon, P. Eng	DRA
22	Economic Analysis	D. Gagnon, P. Eng	DRA
23	Adjacent Properties	C. Bisaillon, P. Eng	DRA
24	Other Relevant Data and Information	D. Gagnon, P. Eng	DRA
25	Interpretation and Conclusions	D. Gagnon, P. Eng and related QPs	ALL
26	Recommendations	D. Gagnon, P. Eng and related QPs	ALL
27	References	D. Gagnon, P. Eng and related QPs	ALL
28	Abbreviations	D. Gagnon, P. Eng and related QPs	ALL

Capital and Operating Cost estimates as well as Conclusions and Recommendations were provided by those consultants involved in relevant areas of the Study.

2.3 Sources of Information

The information presented in this Technical Report has been derived from various studies and fieldwork done by Focus and its technical consultants and service providers ("Consultants"). Excerpts or summaries from documents authored by other consultants are indicated in this Report. The QPs' review of the Project was based on published material in addition to the data, professional opinions and unpublished material submitted by Focus.

The QPs have reviewed all the data provided by Focus and its Consultants. The QPs also consulted the Government of Québec's online mining title management system and assessment work databases (GESTIM Plus and SIGEOM, respectively), as well as AIFs, MD&A reports, and press releases published by Focus on SEDAR (www.sedar.com).

The QPs reviewed the information used to prepare this Technical Report, including the conclusions and recommendations, and believe that the said information is valid and appropriate for the preparation of this Report. The Reports are listed in Section 27 of the Technical Report.

2.4 Site Visit

This Section provides details of the personal inspection on the Property by some of the Qualified Persons.

Name	Company	Site Visit (Yes or No)	Date
Daniel Gagnon, P. Eng.	DRA Global	No	-
Claude Bisaillon, P. Eng.	DRA Global	Yes	July 15 to 16, 2021
S. Ibrango, P. Geo., PhD.	DRA Global	No	-
Jordan Zampini, P. Eng.	DRA Global	No	-
Ghislain Prévost, P. Eng.	DRA Global	No	-
Leon Botham, P. Eng.	NewFields Canada	Yes	Sept 9 to 12, 2021
Denys Vermette, P.Geo.	IOS Services Géoscientifiques	Yes	Sept 9 to 12, 2021

2.5 Units and Currency

In this FSU, all currency amounts are Canadian Dollars (CAD or $) unless otherwise stated, with commodity prices typically expressed in US Dollars (USD). Quantities are generally stated in *Système international d'unités* (SI) metrics units, the standard Canadian and international practices, including metric tonne (tonne, t) for weight, and kilometre (km) or metre (m) for distances. Abbreviations and acronyms used in this FSU are listed in Section 28.

3 RELIANCE ON OTHER EXPERTS

This Report has been prepared by DRA for Focus. The information, conclusions, opinions, and estimates contained herein are based on:

- Assumptions, conditions, and qualifications as set forth in this FSU.
- Data, reports, and opinions supplied by Focus and other third-party sources.
- DRA believes that information supplied to be reliable but does not guarantee the accuracy of conclusions, opinions, or estimates that rely on third party sources for information that is outside the area of technical expertise of DRA. As such, responsibilities for the various components of the Summary, Conclusions and Recommendations are dependent on the associated sections of the Report from which those components were developed.
- DRA relied on the following reports and opinions for information that is outside the area of technical expertise of DRA:
  - Information on metallurgical and pilot plant testing that was provided by SGS Minerals Services.
  - Information relative to geochemical characteristics of ore, waste rock and tailings was provided by NewFields Canada Mining and Environment ULC.
  - Information relative to environmental studies, permitting and social or community impact was provided by IOS Services Géoscientifiques Inc.
  - Information on graphite pricing and markets was provided by Focus based on a marketing report prepared by Benchmark Mineral Intelligence Ltd.

DRA has not verified the legal status or legal title to any permit, or to the legality of any underlying agreements for the subject properties regarding mineral rights, surface rights and permitting presented in Section 4 of this Report. The only verification performed by DRA was to validate that the claims are valid and properly registered to Focus on the Province of Québec's GESTIM Plus mining title management system.

Data used in this Report has been verified where possible, and this Report is based upon information believed to be accurate at the time of completion.

This Report is intended to be used by Focus subject to the terms and conditions of its contract with DRA Global Limited. This contract allows Focus to file this Report as a Technical Report with Canadian Securities Regulatory Authorities pursuant to NI 43-101, Standards of Disclosure for Mineral Projects, and 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.

Permission is given to use portions of this Report to prepare advertising, press releases and publicity material, provided such advertising, press release and publicity material does not impose any additional obligations upon, or create liability for DRA.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Project Location

The Lac Knife Project is situated in Esmanville Township on NTS topographic map sheet 23B11, south of town of Fermont, in the Côte-Nord administrative region of Québec. The project site is accessible via a combination of paved and gravel surface road from Fermont. The temporary exploration camp which is located on the western shore of Lac Knife, is within 45 km driving distance from Fermont. Road distance from Montreal to Lac Knife is approximately 1,300 km by all-season Highway 389, approximately 500 km from Baie-Comeau to Fermont. The Project is centered at 52°33'N and 67°11'W and covers 2,986.31 ha (Figure 4.1).

4.2 Mining Titles

In the Province of Québec, mining is principally regulated by *Ministère de l'Énergie et des Ressources naturelles du Québec* (the Ministry of Natural Resources and Energy of Québec, (MERN). The ownership and granting of mining titles is primarily governed by the Québec Mining Act and related regulations. In Québec, land surface rights are distinct property from mining rights.

The electronic map designation is the most common method of acquiring new claims from the MERN whereby an applicant makes an online selection of available cells along a 30x30 seconds of arc grid (approximately 52 hectares) administered by the Province of Québec's online GESTIM Plus mining title management system. A claim has a term of two (2) years, which is renewable for additional periods of two (2) years any number of times, subject to performance of minimum exploration work on the claim and compliance with other requirements set forth by the Act. Claims are practically irrevocable, as long as renewal obligations are fulfilled by Owner.

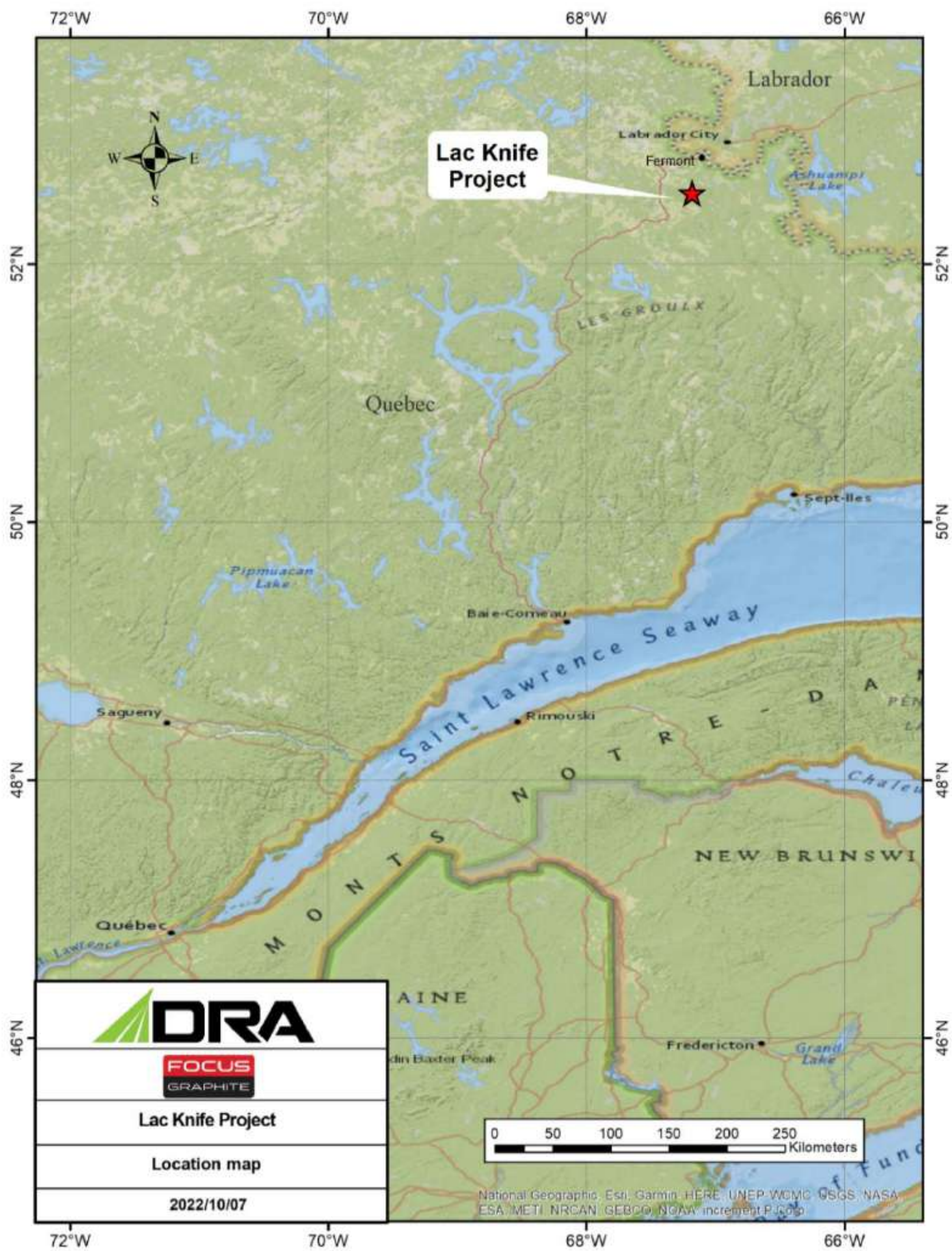
Table 4.1 and Figure 4.2 present the Lac Knife Property comprised of 62 map-designated claims ("*Claim désigné sur carte"* (CDC)) covering 3,248.18 ha located in Esmanville Township (NTS topographic map sheet 23B-11), 27 km south-southwest of the iron-mining town of Fermont, in the Côte-Nord administrative district of Québec.

The Project also includes an isolated block of 12 CDC claims covering 626.88 ha located on NTS sheet 23B-11, 11 km to the North of the Lac Knife property and referred to as the Montagne-aux-Bouleaux Property (or claims block). This block covers a dolomite occurrence that Focus intends to be use as a neutraliser of acid mine drainage in the tailings and waste dump areas. This area is not included in the Lac Knife mineral reserve estimate and is further discussed in Section 24.

Total capitalised exploration expenditures incurred on the Project to date (net of tax credits and mining duties) are $ 24,358,580 as of September 30, 2022.

There is no restriction related to the mineral tenure renewal; however, the claim block is partially enclaved to the south and west by the proposed Moisie River aquatic reserve protected area. This area is depicted on Figure 4.2 for information only.

Figure 4.1 – Location Map



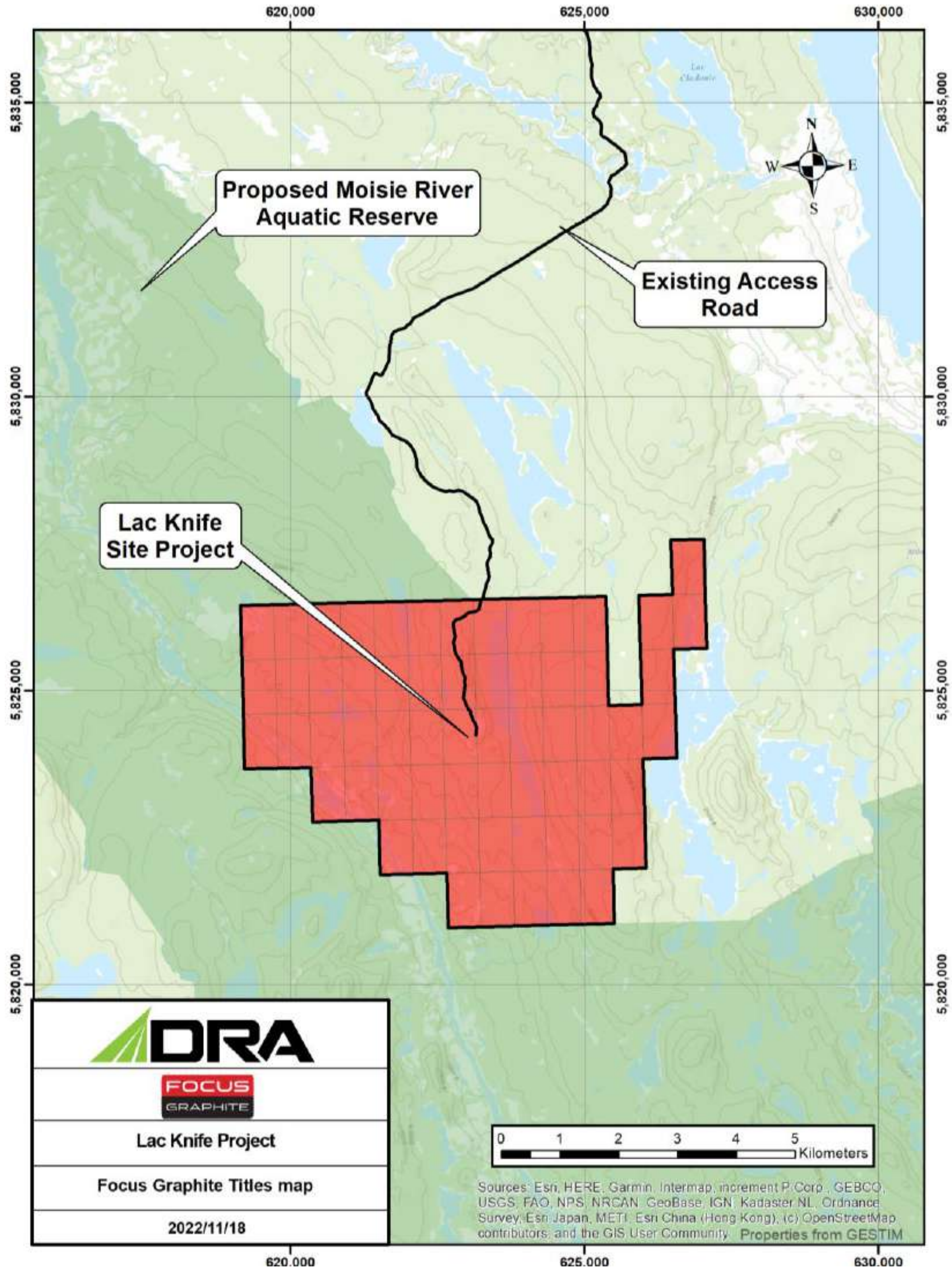
Source: DRA, 2022

Table 4.1 –- Lac Knife Project Claim Titles

Title No	NTS Sheet	Area (ha)	Type of Title	Title Status	Registration Date	Expiration Date	Claim Holder
1052792	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1028541	23B11	52.4	CDC	Active	9/21/2001	9/20/2024	Focus 100%
1052796	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052793	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1033245	23B11	52.41	CDC	Active	11/1/2001	10/31/2024	Focus 100%
1052780	23B11	52.4	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052772	23B11	52.41	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052775	23B11	52.41	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052791	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052786	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052789	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052814	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052811	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052797	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052787	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052808	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052781	23B11	52.4	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052810	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052769	23B11	52.42	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1028540	23B11	52.4	CDC	Active	9/21/2001	9/20/2024	Focus 100%
1052784	23B11	52.4	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052798	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052815	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052803	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052806	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052795	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052779	23B11	52.4	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052813	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052804	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052790	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1033239	23B11	52.42	CDC	Active	11/1/2001	10/31/2024	Focus 100%

Title No	NTS Sheet	Area (ha)	Type of Title	Title Status	Registration Date	Expiration Date	Claim Holder
1052782	23B11	52.4	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052799	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052774	23B11	52.41	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052783	23B11	52.4	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052816	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052773	23B11	52.41	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1033237	23B11	52.42	CDC	Active	11/1/2001	10/31/2024	Focus 100%
1052817	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052776	23B11	52.41	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052800	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052805	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1033244	23B11	52.41	CDC	Active	11/1/2001	10/31/2024	Focus 100%
1033259	23B11	52.37	CDC	Active	11/1/2001	10/31/2024	Focus 100%
1052812	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052788	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1033238	23B11	52.42	CDC	Active	11/1/2001	10/31/2024	Focus 100%
1052771	23B11	52.41	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052777	23B11	52.4	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052794	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052802	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052778	23B11	52.4	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052770	23B11	52.42	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052809	23B11	52.37	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052801	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052807	23B11	52.38	CDC	Active	3/26/2002	12/11/2024	Focus 100%
1052785	23B11	52.39	CDC	Active	3/26/2002	12/11/2024	Focus 100%
2607138	23B11	52.39	CDC	Active	5/4/2021	5/3/2024	Focus 100%
2607139	23B11	52.38	CDC	Active	5/4/2021	5/3/2024	Focus 100%
2607140	23B11	52.37	CDC	Active	5/4/2021	5/3/2024	Focus 100%
2607141	23B11	52.37	CDC	Active	5/4/2021	5/3/2024	Focus 100%
2607142	23B11	52.36	CDC	Active	5/4/2021	5/3/2024	Focus 100%

Figure 4.2– Proposed Moisie River Aquatic Reserve



Source: DRA, 2022

4.3 Royalties, Agreement and Encumbrances

There are no royalties, agreements or encumbrances on the Property.

4.4 Surface Rights

Mineral exploration titles do not include surface right. The property is located in non-organized territories of the Caniapiscau regional municipality county, usually referred as crown lands. The Québec mining regulation grants the unrestricted access to the property to the mineral exploration right owner, as well as the exclusive right to acquire a mining lease. All access roads are public roads, free of access restriction.

The Project is bordered to the southwest by the Pékans River which discharges into the Moisie River, 55 km downstream of the Lac Knife Project area. Since the Pékans River is part of the Moisie drainage basin, the river watershed is part of the proposed Moisie River aquatic eserve. Under the Minister's Order dated March18, 2003 published in the Gazette officielle du Québec of April 9, 2003, and updated in March 2008, the proposed Moisie River aquatic reserve and conservation plan for the reserve was created to protect a large part of the river watershed. The western part of the Lac Knife claim block is located within the Pékans River watershed; but excluded as an acquired right from the proposed aquatic reserve area. A section of the Moisie River aquatic reserve, applicable to the Lac Knife Project, is shown on Figure 4.2.

All activities carried on within the proposed Moisie River aquatic reserve are governed by the provisions of the Natural Heritage Conservation Act (R.S.Q., c. C-61.01). It is important to note that under the Natural Heritage Conservation Act, the main activities prohibited in an area designated as a proposed aquatic reserve includes mining, and gas or petroleum development. Also prohibited is the mining, gas or petroleum exploration, brine and underground reservoir exploration, prospecting, and digging or boring, where such activities necessitate stripping, the digging of trenches, excavation, or deforestation. In the proposed Moisie River aquatic reserve, any type of activity likely to degrade the bed, banks or shores or to otherwise affect the integrity of any body of water or watercourse in the reserve is also prohibited. Since the Lac Knife property predate the onset of the reserve, exploration and mining activities are permitted within their perimeters as an acquired right, that would extinguish in the event that claims are allowed to lapse.

4.5 Environmental Liabilities and Permitting

For the exploration activities during the period between 2010 to 2022, Focus received land use permits from the MERN and the permits for temporary camp construction from the MRC de Caniapiscau.

Overall, a total of six (6) certificates of authorization have been issued by the *Ministère des Forêts, de la Faune et des Parcs* (MFFP) to the Lac Knife Property.

There are no environmental liabilities pertaining to the Property according to Focus, aside of rehabilitation of former sampling trenches. Minor hydrocarbon contamination has been reported (see Section 20) close to the former Mazarin cabin, currently operated by the Lagopèdes skidoo club, which does not fall in Focus liabilities.

4.6 Other Significant Factors and Risks

There are other known significant factors or risks.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

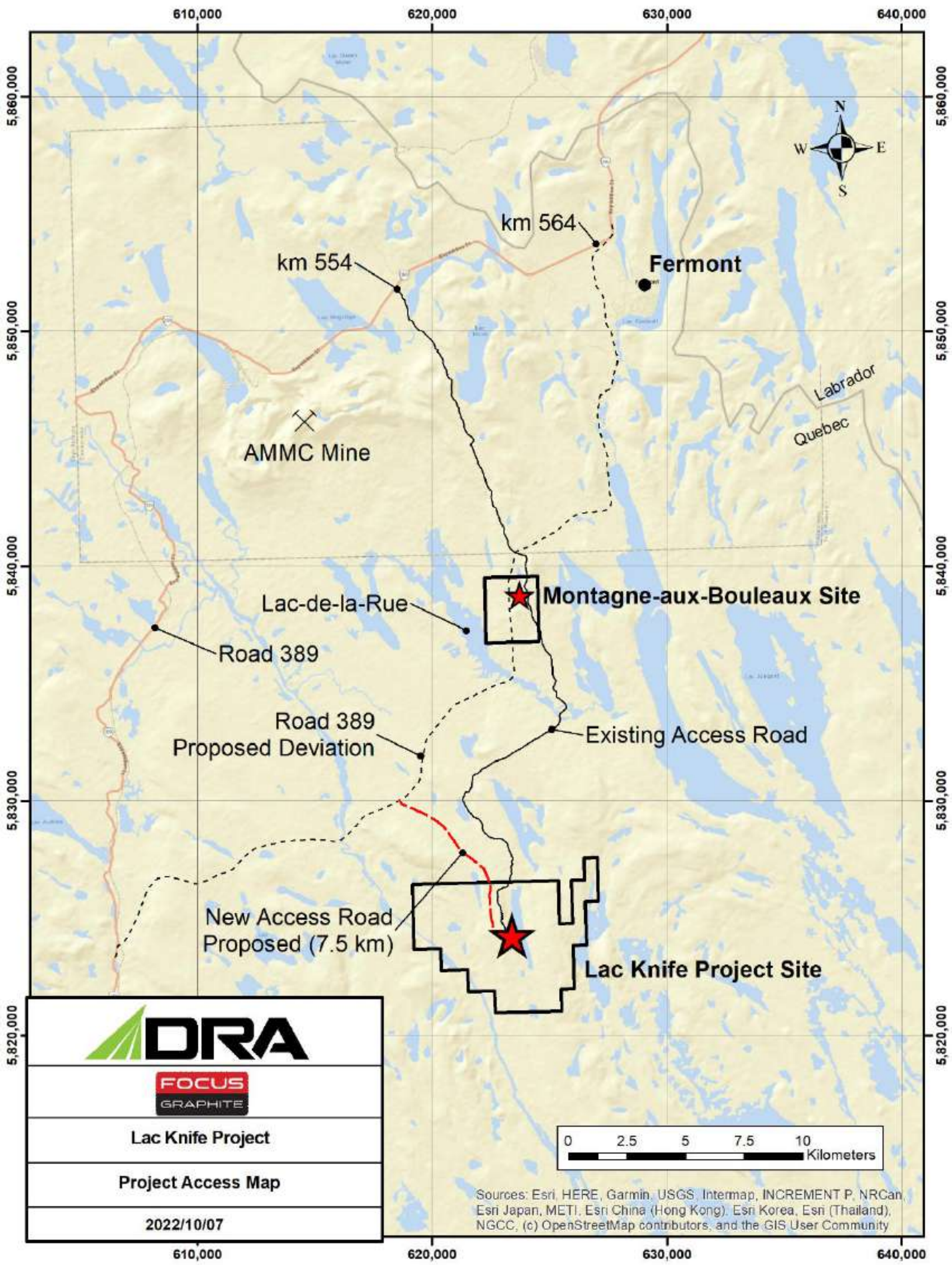
The area where the Project is located is accessible through provincial highway 389 which is a 570 km long all-weather partly paved highway that connects Baie-Comeau to Fermont, Québec (km 564) and to the Newfoundland and Labrador border (km 570), and onwards to the nearby twin communities of Labrador City/Wabush by way of the Trans-Labrador highway.

From Route 389, the Project is accessible through the Cumstock-Mazarrin Road, for approximately 20 kilometers southward, which starts about 3.2 km east of the Arcelor Mittal's Mont-Wright mine entrance (Figure 5.1). From there, an unmaintained 12 km gravel road has been constructed by Mazarin in 1989 to access the site.

The Cumstock-Mazarrin Road can be travelled by pick-up trucks in summer but are used as a federated skidoo trail operated by the Lagopèdes club in winter. Float planes can land on Lac Knife adjacent to the deposit and commercial air service is available to the Wabush Airport, 32 km northeast of Fermont.

Highway 389 is in the process of being improved by the *Ministère des Transports du Québec* (MTQ) and is to be realigned between Fire Lake and Fermont (from km 478 to 564) The new trace will be located about 4 km north of Mazarin Road, reducing the length of the access road to the deposit to less than 10 km.

Figure 5.1 – Lac Knife Project Access Map



Source: DRA, 2022

5.2 Climate

The climate in the region is typical of north-central Québec. Winters are harsh, lasting approximately five (5) months, with heavy snow from December through April. Summers are generally cool and wet; however extended daylight enhances the summer work-day period. Table 5.1 shows average climate data from the town of Fermont. Early and late-winter conditions are acceptable for ground geophysical surveys and drilling operations. Mines in the area operate year-round.

Table 5.1 – Climate Data (Fermont Area)

Month	Daily Temperature (°C)			Precipitation		
	Average	Low	High	Rainfall (mm)	Snowfall (cm)	Total (mm)
January	-23.2	-29.4	-17	1.1	50.1	51.2
February	-20.6	-27.4	-13.8	0.5	30.9	31.4
March	-14	-20.7	-7.3	0.9	42	42.8
April	-3.9	-9.8	2	13.8	26.7	40.5
May	3.1	-2.5	8.7	35.3	11.3	46.6
June	9.6	3.5	15.6	86.6	1.2	87.7
July	13.2	7.5	19	118.7	0	118.7
August	12.2	6.7	17.8	103.7	0	103.7
September	6.2	1.6	10.8	102.9	3	106
October	-0.5	-4.4	3.5	43.3	23.9	67.2
November	-8.7	-13	-4.4	6.8	51.8	58.6
December	-18.7	-24.4	-13.1	1.5	50.7	52.2
Annual	**-3.8**	**-9.4**	**1.8**	**515**	**291.5**	**806.5**

5.3 Local Resources and Infrastructure

Since the advent of iron ore mining in the Labrador City area over 60 years ago, significant infrastructure has been installed to support the mining operations of the Carol Lake Mine (Rio Tinto), Scully Mine (Tacora Resources), Mont Wright (ArcelorMittal Minerals Canada) and the Bloom Lake Mine (Québec Iron Ore Inc.)

Fermont, Québec is the closest municipality with approximately 2,300 inhabitants (Statistics Canada, Census 2021). Including the twin Towns of Labrador City and Wabush in Labrador, located approximately 30 km away, the regional population is approximately 9,400 (Statistics Canada, Census 2021). These municipalities have the infrastructure to provide services for accommodations, community services, a skilled mining labour force, as well as mining contractors and related services. In perspective, the Lac Knife operation is anticipated to be of significantly smaller than the iron ore mining complexes in the area. By comparison, ArcelorMittal's Mont-Wright mining complex is currently producing approximated 26 Mtpy of concentrate.

Several road carriers regularly service the region from Baie-Comeau. The Wabush airport (IATA: YWK) is the nearest point for scheduled and charter flights from Sept-Îles, Québec City, Montreal and Newfoundland-Labrador destinations with five (5) scheduled airlines operating daily flights (Valley Air Services, Provincial Airlines, Pascan Aviation, Air Canada Jazz and Air Inuit).

Two (2) railway systems service the region. The Cartier Railway Company is a provincial charter dedicated railroad that links ArcelorMittal's Mont-Wright facility, located approximately 15 km away from the Lac Knife Project to their Port Cartier pellet plant and port on the shore of the St. Lawrence River (416 km). The Québec North Shore and Labrador ("QNS&L") Railway Co., owned by IOC, is a federal charter common-carrier railroad that links Labrador City and the other iron mines to the Port of Sept-Îles (360 km). A spur is accessible at Lac Bloom, about 30 kilometres from the Project. Both railroads do not interchange but can access the national network through the Cogema rail ferry.

The Hydro-Québec main 315 kV power line to the Normand Sub-station, which services the town of Fermont and the Mont Wright iron ore mine, passes less than 5 km northeast of the deposit area. However, this power line cannot be directly tapped, but power is available from the Normand Sub-station.

The Project's infrastructure is discussed in Section 18 of this Report.

5.4 Physiography

Most of the Lac Knife area lies within a rolling glacial peneplain at approximately 670 m above sea level (masl) with local relief in the order of 75 m. More specifically, the deposit is situated on the north-trending ridge approximately 200 m west of Lac Knife.

Glaciation left a veneer of silt-sand and sand-cobble-boulder moraine till covering the local bedrock. Much of the glacial cover is lacking gravel in the region. The overburden depth estimated from both Mazarin and Focus drill holes and trenches in the deposit area average 6.2 m with a standard deviation of 4.8 m. Glacial deposits dominate the local topography and control most of the surface drainage. Lakes, swamps and grassy meadows fill bedrock and drift depressions.

Most of the area on the Project and surrounding terrain is treed with moss and grass-cover. The intact forest includes the typical boreal mixture of spruce and tamarack, with local stands of aspen and white birch. Ground cover is generally in the form of grasses, cladonia, moss, and shrubs; the latter typically comprising alders, and various heathers such as Labrador Tea.

6 HISTORY

This Section has not changed from 2014 Technical Report available on SEDAR entitled "NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study Québec – Canada" Met-Chem Project # 2013-064, issued on August 8, 2014, prepared for Focus Graphite Inc.

6.1 Prior and Current Ownership

Interest in the discovery of a graphite deposit increased in the 1980s due to the price increase for natural graphite flakes. In 1987, with the aim of discovering other metallic or industrial prospects other than iron, *La Société d'Exploration Minière Mazarin Inc.* (Mazarin) and *Le Fonds d'exploration minière du Nouveau Québec* (Le Fonds) signed an exploration agreement wherein Mazarin retained 100% of the mineral rights and Le Fonds retained a 10% net profit royalty. Mazarin staked the Project in 1987 and kept the claims in good standing until 2003 when the Project was acquired by Cambior Inc.

In December 1989, Mazarin and Princetown Mining Corporation signed an agreement to put the deposit into production. At the end of February 1990, Princetown withdrew from the Project. In August 1990, Cambior signed a joint venture for an equal partnership with Mazarin for the Lac Knife Project. Cambior retained Magloire Bérubé to review the original Mazarin mineral resource. In 1991, Mazarin hoped to bring the deposit in production, but the economy went into recession and graphite prices declined.

In 2000, interest in the Project increased as the graphite market was emerging for hydrogen fuel cells and other uses. In May 2000, UCAR Graph-Tech and Mazarin signed an agreement with the goal of starting production in 2004. However, the graphite market again declined due to an increased supply from Chinese producers and the Project did not proceed. In December 2003, Mazarin spun off its niobium, dolomite and graphite (Lac Knife) assets into Sequoia Minerals. Five (5) months later, Cambior acquired Sequoia Minerals mainly for the Niobec Mine located in Chicoutimi, Québec, acquiring de facto the remaining 50% of the Project. In 2006, IAMGOLD purchased Cambior which included the 100% ownership over the Lac Knife asset.

IAMGOLD sold its 100% interest in the Project to Focus Metals Inc. (now Focus Graphite Inc.) on October 5, 2010.

There are no royalties, agreements, or encumbrances on the Property" as stated in Section 4.3 of this FSU.

6.2 Summary of Historical Exploration Work

Table 6.1 summarises the exploration work on the Project. Historical resource estimates pre-dating the 2012 Roche estimate quoted in the table are historic in nature; and used categories other than the ones set out in the National Instrument 43-101 Standard of Disclosures for Mineral Projects or modern Mineral Resource estimation practices and should not be relied upon. The Qualified Person has not done sufficient work to classify them as current mineral resources or mineral reserves and Focus Graphite is not treating the historical estimates as current mineral resources or mineral reserves.

Table 6.1 – Summary of Historical Exploration Work on the Lac Knife Property

Year	Company	Type of work	Summary Result
1959	Québec Ministry of Energy and Resources.	Regional Geological Mapping	D.L. Murphy discovered the Lac Knife Showing
1982	Le Fonds d'Exploration Minière du Nouveau-Québec ("Le Fonds")	Geophysical surveys (Mag, EM-VLF)	East of Lac Knife
		Geological Mapping	
1986	Le Fonds/Mazarin	Prospecting	Boulder uncovered with 15% graphite
1987	Mazarin/Le Fonds	Prospecting	Lac Knife showing is found again. The area is prospected in detail
		Geological Mapping	
		Geophysical survey (EM-VLF)	
		Trench	Channel sample from a trench returned 13.08% Cg over 5 meters
1988	Mazarin/Le Fonds	Geological Mapping	The Lac Knife showing was extended over a length of 120 m with an average width of 8 metres. The best trench returned 16.5% Cg over a sample length of 25 m
		Geophysical survey (EM-VLF)	
		Mechanical stripping	

Year	Company	Type of work	Summary Result
1989	Mazarin	Diamond drill campaign	93 infill holes totalling 7,367 metres; 6 exploration holes totalling 293 metres. Deposit is defined over 500 meters in strike length.
		Geophysical survey (Max-Min and MAG)	Over general Property grid and Lac Knife showing grid
		Bulk samples of 30 tonnes collected from three sites (during winter)	First pilot plant run at Centre de Recherches Minérales (CRM)
		Bulk samples of 210 tonnes from two sites (summer)	Second pilot plant run at Centre de Recherches Minérales (CRM)
		Historical estimate by Mazarin under Roche Consulting supervision.	Proven and Probable reserve of 4.9 million tonnes grading 17.27% Cg with a Possible reserve of 3.6 million tonnes grading 16% Cg
		Pre-Feasibility Study (Roche)	
		Feasibility Study (Roche and Davy), incorporating a revised Historical estimate using a lower density	Proven and Probable reserves of 4.7 million tonnes grading 17.27% Cg with a Possible reserves of 3.4 million tonnes grading 16 % Cg
1990	Mazarin/ Cambior	Historical estimate (Magloire Bérubé). Same parameters as the Roche and Davy estimate with a reduced area of influence.	Proven and Probable reserves of 3.9 million tonnes grading 17.57% Cg with a Possible resource of 1.6 million tonnes grading 15.9% Cg
1991	Mazarin/ Cambior	Feasibility Study (Mazarin/Cambior with consultants)	
2000	Mazarin/UCAR Graph-Tech	Surveying	New base map
		Stripping	Stripping of three (3) selected site
2001	Mazarin/UCAR Graph-Tech	Bulk samples totaling 3,366 tonnes	Bulk samples from two (2) selected sites; Mineralogical and metallurgical characterization work by COREM
2008 2009	IAMGOLD	Relocating bulk sample material back to the Lac Knife site and rehabilitation of the site	
2010	Focus Graphite	Acquisition of the Project	

The Lac Knife graphite occurrence was discovered by geologist Daniel L. Murphy during a geological survey of the Carheil and Le Gentilhomme Lakes area performed by the Québec Department of Natural Resources of Mines (currently Québec department of energy and natural resources. The showing was described as a massive strip of graphite, one meter thick. Between 1959 and 1960 only mapping work was done (Murphy, 1960).

In 1982, *Le Fonds d'exploration minérale du Nord du Québec* conducted a preliminary geophysical survey and a prospecting campaign on the east side of the Lac Knife Project.

In 1986, Le Fonds retained Mazarin to manage the exploration field work for the Fermont project, a project that targeted minerals other than iron in the aim to diversify the Fermont area economy. In the same year, Mazarin began their exploration work by a prospecting campaign and managed to locate the 1959 Murphy graphite showing west of Lac Knife. Only one (1) boulder containing 15% graphite was found.

In 1987, Mazarin/Le Fonds continued exploration activities under the supervision of Explograph Inc., a consultant that conducted more extensive geological mapping west of the Project. The historic mineral occurrence was located, and a ground VLF-EM geophysical survey was conducted over the showing area. At the end of the summer, a second detailed ground VLF-EM geophysical survey was performed, and some trenches tested the best geophysical anomalies. A channel sample of 5 m in length from one (1) trench graded 13.08% Cg.

In 1988, Mazarin followed up on the exploration work over the Lac Knife showing area but also over all the new 1987 staked claims (Lac Knife Project). Completed work included line cutting (2.3 line-km) and grid chaining (95 line-km), geological mapping of the eastern part of the claim block, VLF-EM survey (Sabre Model 27 instrument) over all the claim block and the Lac Knife showing, stripping and trenching over the showing area. The results permitted to outline the Lac Knife deposit showing over 120 m of strike length. The best trench returned an intersection of 16.5% Cg over 25 m.

From January to April 1989, Mazarin completed the cutting of a grid line and a topographic survey in the Lac Knife showing area in order to outline the first drilling program at the Lac Knife Property. A description of the 99 holes drilling program (7,660 m) is provided in Section 10. In support of the drilling program, a ground Max-Min geophysical survey (Apex Max-Min II instrument) was conducted over the general grid project area (23,975 m) and the grid that covered the showing area (15,650 m) to help to locate the drill holes with more precision. A bulk sample of the Lac Knife showing came from three different sites. The 30 tonnes (t) sample was expedited to the *Centre de Recherches Minérales* (CRM), Quebec City, in about 100 45-gallon plastic barrels. In the summer 1989, a second bulk sample of 210 t was sampled from two (2) blasted sites in the aim to conduct a second pilot plant run at CRM.

Following the drilling campaign at Lac Knife, Mazarin completed in May 1989 an initial Resource Estimate under Roche's supervision. A Prefeasibility Study prepared by Roche followed in July, and a complete Feasibility Study was completed by Roche and Davy in October of the same year. The first era of work at Lac Knife ended with an update of the Resource Estimate and the Feasibility Study by Mazarin/Cambior in 1990-1991.

The second phase of exploration work at Lac Knife was performed between the years 2000-2001. In 2000, Mazarin/UCAR Graph-Tech mandated Explograph Inc. to prepare the site for bulk sampling that was planned for a pilot plant scale run in 2001. In July and August 2000, a site reconnaissance was performed by Explograph Inc. and Strathcona Mineral Services (mandated by UCAR Graph-Tech to monitor the bulk sampling procedure), followed by a survey of the grid lines over the deposit and overburden stripping of selected sites with a tractor. The survey of the grid lines over the deposit was carried out by Jean-Marc Tremblay, using a Sokkisha 72C Total Station.

The objective of the survey was to reposition and identify the stations along the cut grid lines and to define the location and elevations of the stations in relation to established benchmarks (labelled HQ AG 1331 91KG282S and owned by the provincial government and RAYNALD BABIN AG 1449 9309). The measurements of the grid survey 2000 were used to produce a new base map from which the topography, overburden thickness and various exploration work was re-compiled. The overburden was removed over three (3) selected sites with a D8R bulldozer equipped with a ripper in preparation for the extraction of a bulk sample in 2001.

From the end of June to the end of August 2001, a bulk sampling program was carried out and produced a total of 3,366 tonnes of mineralised rock from the Lac Knife graphite deposit. The material was extracted from two (2) sites, site 2000-1 (1,705 t) located in the northern part of the deposit and, site 2000-2 (1,661 t) in the southern part. The mineralised rock from both sites was transported by truck to the O'Connell quarry north of Fermont to be crushed and was stored on distinct concrete platforms to prevent contamination. The crushed mineralised rock was then stored on concrete pads in the O'Connell quarry and in the Lesage Transport facilities in Fermont. Before drilling and blasting the two (2) sites, detailed geological mapping of the uncovered zones were produced by Strathcona Mineral Services which is very helpful in understanding the folded geometry and structural geology of the deposit.

Following this Project period, the graphite market declined. The crushed mineralised stockpiles from the bulk sample stayed at the storage sites until 2008 when IAMGOLD proceeded to rehabilitate the Lac Knife site and used the bulk sample material to re-fill the 2001 blasted site number 2. In 2009, IAMGOLD finalised the rehabilitation of both sites 1 and 2.

Focus Graphite acquired all the outstanding mining rights to the Project from 3765351 Canada Inc., a subsidiary of IAMGOLD on October 4, 2010.

7 GEOLOGY SETTINGS AND MINERALISATION

This Section has been summarised and updated from the Technical Report available on SEDAR entitled "NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study Québec – Canada" Met-Chem Project # 2013-064, issued on August 8, 2014, prepared for Focus Graphite Inc. Figures 7.1 and 7.3 has been modified to depict the latest MRE results prepared in 2022 and included in Section 14.

7.1 Regional Geology

The graphite rich Menihek Formation argilites and the Sokoman Iron Formation of the Ferriman Group in the Paleoproterozoic Labrador Trough basin sediments extend southward across the Grenville front tectonic zone as high metamorphic grades Nault and Wabush formations of the Gagnon terraines.

In the Labrador Trough, original sedimentary textures show that the Iron Formation lithological units were deposited principally as chemical sediments with high iron and silica (chert) and characteristically low aluminum in a series of linked basins. Deposition probably was enhanced by biologically driven oxy-atmo-inversion. Clark and Wares (2005) described the current synthesis of the Labrador Trough lithostratigraphy. The Trough extends some 1800 km from the northern shores of Québec south and southwest with the original Labrador Trough rocks being the low-metamorphic component north of the Grenville Front and the metamorphosed equivalents southwest of the Front. The formational nomenclature of the southwest Labrador Trough geology is derived from the less-metamorphosed Labrador Trough Formations. These units continue across the Grenville Front and their general relationships continue in the high metamorphic grade environment of the southern Labrador Trough.

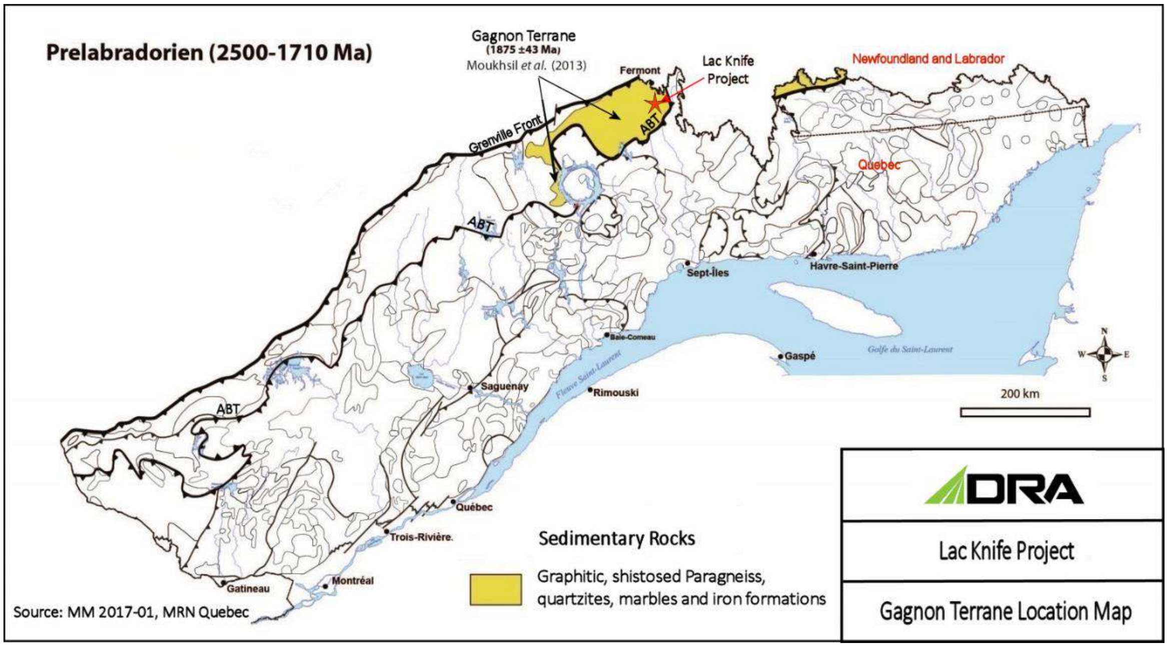
The Grenville orogeny (1.16 – 1.13 Ga; Emslie and Hunt, 1989) compressed the southwestern portion of the Labrador Trough into what is now known as the Gagnon Terrane within the Grenville Province (Figure 7.1). The deformation superimposed medium to high metamorphic facies onto the older deformed and metamorphosed Labrador Trough geology.

Grenvillian rocks are subdivided into a set of parautochtonous to allochthonous terranes arranged in the form of a south-easterly dipping thrust stack emplaced over the southern margin of the Archean age Superior Province. Rock units within the thrust stack, range in age from Archean to late Mesoproterozoic, with older units occupying the lower levels of the thrust stack and the younger units located at the higher levels of the thrust stack further to the southeast. The first-order subdivision of the Grenville involves recognition of:

- An external "parautochthonous" belt composed of Archean, Paleoproterozoic, and Mesoproterozoic rocks representing the southern margin of Laurentia during the Mesoproterozoic. The Project is located in this sequence.

- An “allochthonous polycyclic” belt composed of transported Paleoproterozoic and Mesoproterozoic rocks separated from the Parautochthonous belt by the Allochthon Boundary Thrust (“ABT”).
- An “allochthonous monocyclic” belt formed of rocks largely of Mesoproterozoic age.

Figure 7.1 – Gagnon Terrane Location Map



Source: DRA, 2022

The Gagnon Terrane where the Lac Knife Project is located has two (2) lithostratigraphic assemblages with distinct ages (Hocq, 1994): older migmatitic paragneiss and younger mixed-lithology metasedimentary rocks. The Archean Ashuanipi migmatitic paragneiss forms the boundary against the Grenville fault in the Gagnon Terrane to the base of the Ferriman Group. Metamorphic equivalent of the younger Ferriman Group and Ashuanipi Complex are trusted as thick-skinned tectonics and extends from the Grenville Front to the area located southwest of the Manicouagan Reservoir.

The Gagnon Group stratigraphy is correlated with the Ferriman Group stratigraphy of the Labrador Trough (Figure 7.2). The Ferriman Group was metamorphosed into several formations within the Gagnon Group, which is the older stratigraphical terms used prior to Clark & Wares’ 2005 study but still of common usage by the industry. The Ferriman/Gagnon Groups include from oldest to youngest; the Denault reefal dolomite/ Duley marble formation overlain by the Wishart/Wapussakatoo arenaceous and cherty quartzite and quartz-rich gneisses near the top of the formation and are overlain by the Ruth Formation of ferruginous mudstones and cherts. The

Sokoman/Wabush Iron Formation with its chemically derived oxide-, silicate-, and carbonate-rich facies are the most studied component.

The Menihek/Nault Formation mudstone/mica schist is derived from later uplift and increasing detrital sedimentation within basins. The basal units include the last remnants of the Sokoman chemical sedimentary periods and the start of the sediments in the basins that contain the graphite-rich horizons of interest; it becomes more uniform above the Sokoman-Menihek contact. The lower contact of the Nault Formation that hosts the graphite deposits in the Gagnon Terrane is located above the upper contact of the Wabush Formation.

Figure 7.2 – Correlation of Labrador Trough and Equivalent Grenville Stratigraphy[1]

Labrador Trough		Grenville Province	
Paleoproterozoic	<2.06 Ga to 1.89 Ga	Neoproterozoic	(1.19 Ga to 1.12 Ga
KANIAPISKAU SUPERGROUP			
Choak & Tamarack River Formations		No known equivalent Grenville Formations	
CYCLE 3 STARTS			
---------- unconformity ----------			
FERRIMAN GROUP		GAGNON GROUP	
Basalt dykes/sills	1.884 Ga	"Hornblende-biotite-garnet" gneiss (intrudes & caps Menihek Fm)	
Menihek Fm flysch turbidite		Nault Fm quartz-biotite ± garnet paragneiss ± Graphite = *"Upper Paragneiss" of Clarke (1977)*	
Sokoman Fm iron formation	1.879 Ga	Wabush Fm iron formation, various oxide-carbonate-silicate facies (*date from felsic dykesin Lab Trough*)	
Ruth Fm ferruginous mudstone, chert		Basal Silicate Iron Fm – in Gagnon iron deposits	
Wishart Fm arenitic quartzite		Wapussakatoo Fm quartzite and "dirty" quartzite w/ variable mica and calcite	
CYCLE 2 STARTS			
---------- unconformity ----------			
CYCLE 1 ENDS			
ATTIKAMAGEN GROUP			
Denault Fm dolomite, marble	< 2.06 Ga	Duley Fm marble with quartz, calcsilicate	
---------- unconformity ----------			
Archean			
Ashuanipi Gneiss	2.17-2.14 Ga	Katsao Fm migmatic paragneiss	

Of the three (3) Grenville deformational events, the two (2) major ones, being the D1 and D2 deformation events, dominate the formational interference folding patterns that resulted in several large polyphase anticlinoria throughout the Gagnon Terrane. The D1 event formed the F1 schistosity during the early part of the Grenville orogeny. The D2 event deformed the D1 schistosity due to high ductility caused by increased pressure and temperatures at depth during the peak or slightly post-peak of the orogenic deformational event and intense folding, but it did not generate a

[1] Deposition ages of Gagnon Group units are for the Labrador Trough Formation equivalents (Clark and Wares 2005)

second schistosity. The D2 fold axis is oriented approximately N182° with a plunge of -38° near Lac Knife and control the anisotropy of the mineralised bodies (Block 2020).

The older D1 deformational event compressed the rocks from the south-southeast, direction probably marking the onset of the Grenville orogeny. It broadly controls the Nault-Wabush-Duley formation of spatial distribution. The fold pattern shows a bimodal style. The dominant pattern has narrow, linear fold belts along the margins of broad anticlinoria (a series of anticlines and synclines). The fold belts are tightly folded with steeply dipping limbs. Widths tend to be narrow in proportion to strike length. The fold belt extends several hundred kilometres in a generally west-southwest trend from the Grenville Front north of Wabush, Newfoundland to the southwest side of Lac Manicouagan.

The second and less common style of folding occurs within the core of the anticlinorium. There, it occurs as relict broad areas of shallow dipping Iron Formation stratas often with sharply folded contacts. Examples of the first style of folding are Mont Reed, Mont Wright, Lac Bloom, and the Carol Lake orebodies. The second type of folding is characterised by the Lac Jeannine and Fire Lake orebodies, and the Lac Olga, Peppler and Lamêlée deposits. Clarke (1977) notes that the Wabush Formation often is more intensely folded than the basement paragneissic rocks. The reason may be that the Wabush Formation, the Duley Formation and the graphite rich marker horizons were more distinctly ductile as rock units during deformation and these horizons are more continuous and easier to outline in the field, while the Katsao paragneiss lack marker horizons used to map and document folds at the semi-regional scale.

The younger D2 event compressed the D1 folds from the east-northeast. They form steep, tight folds with vertical to steeply north-easterly dipping fold limbs. The complex interference fold pattern is expressed on both regional and local deposit scales. On the flanks of the anticlinoria, D2 folds are probably as deep as the D1 set. In the core of the anticlinorium, however, they appear to be shallower. This is expressed by the steeply folded flanks of the Lamêlée, Fire Lake, Peppler Lake, and Lac Bloom iron ore deposits that did not significantly fold the central cores of these open, bowl-shaped deposits. This feature may be explained by uplifted cores of the anticlinorium.

The interference patterns of D1 and D2 are variable across the Gagnon Terrane. To the centre and west, four separate anticlinoria dominated by D2 folding occur from the southwest edge of the Gagnon Group to the Carol Lake deposit in Labrador. To the east, the increased D2 compressional event leads to more thrust faulting and steeply dipping folds (Van Gool et al., 2008).

The Project is located in the western part of the easternmost anticlinorium that hosts the Mont-Wright and Kami iron deposits. The thrust movement also appears to have local dextral transpresssional movement combined with concomitant shearing and displacement.

The Grenville Province rocks characteristically have been subjected to amphibolite and granulite facies metamorphism in the regional area of Lac Knife and Mont-Wright.

The principal economic commodity in the region is iron oxide deposits within the Gagnon Group; the meta-sedimentary graphite rich horizons occur more specifically near the base of the Nault Formation above the Wabush Iron Formation.

7.2 Local Geology

The Lac Knife property is underlain principally (>90%) by the mica-quartz-feldspar paragneiss and schist of the Nault Formation with graphite bands scattered throughout. Mineralogy locally includes garnet and kyanite plus minor bands of calcsilicate (calcite-tremolite-diopside). The host rocks of the graphitic zones are similar with the only significant variable being the graphite content (Bonneau and Raby, 1990) and variations in quantity of calcsilicate bands (Birkett, et al., 1989). Dolomitic marble of the Duley Formation is present in the north-east of the property, which has recently been excavated and sampled as to be use for acid drainage mitigation (Joly 2022). Another horizon is reported on the west shore of Aux-Pekans River, which has not been evaluated by Focus. Iron stone of the Wabush Formation are reported associated with Duley marbles, plus in a folded structure to the north-west of the graphite deposit.

The schist forms where the micas constitute a relatively high portion of the rock relative to associated quartz, feldspar, and other prismatic minerals. The incipient gneissic texture forms with an increase in prismatic minerals, but it does not form the full banded gneissic texture (Birkett et al, 1989). There are few outcrops present, and this is based on regional mapping by Murphy (1960) and property scale mapping by Mazarin (1989), as well as more recent mapping by Focus (Lavoie and Joly, 2022). Birkett noted two types of gneiss: silicate and calcsilicate. The dominant silicate type contains more Si and Al and less Ca as expressed by the proportions of quartz, K-feldspar > Ca-feldspar, mica, garnet, and kyanite. Calcsilicate type bands are of minor abundance and marked by the presence of lower Si (less quartz and K-feldspar) and higher Ca expressed by the presence of minerals such as scapolite, tremolite, diopside, clinozoisite, calcite, and anorthosite plagioclase feldspar.

Murphy interpreted a complexly folded, Y-shaped syncline with one arm trending north-northwest, the second striking west-northwest and the third striking south to south-southeast. The syncline boundary is marked by the contact with the underlying iron formation with variable iron-mineral facies.

The Wabush Formation that bounds the north and west part of the Nault Formation appear to be quartz-Fe-carbonate facies since it does not have a magnetic signature on airborne surveys. The Wabush unit located east of the project contains some magnetite in Fe-carbonate and Fe-silicate-rich units. The third, complexly folded Wabush Formation horizon located southwest of the Rivière aux Pékans is a mixture of non-oxide and oxide facies of the more typical Wabush iron formation with the Duley Formation marble lying beneath it to the west.

The drill grid area west of Lac Knife lies on the north-trending eastern limb of a regional fold containing the Wabush Iron Formation located in the northern part of the project area. Mazarin prospected the project area and discovered other graphite occurrences, which were evaluated by Focus in the course of multiple prospecting programs (Lavoie and Joly, 2022) (Figure 7.3).

Previous interpretations of the detailed drilling by Mazarin showed a number of closed folds that formed part of their initial resource estimation in 1989. Structural analysis conducted from down-hole imagery confirmed the geometry of these overturned to reclined folds, with homoclinal limbs that strike ~N156° and plunge moderately to the west at about 60°, with a fold axis toward the south at N182° with a plunge of 37°. One fault that strikes N029° with a ~55° south easterly dip has been interpreted from the drill hole database (Figure 7.3).

Mineral assemblages related with the Lac Knife host rocks include quartz + feldspath (orthose or plagioclase) + muscovite+kyanite for the silicate rock type and calcite + tremolite + diopside for the calcsilicate rock type (Tremblay, 2014). These metamorphic assemblages suggest metamorphic conditions associated to the upper amphibolite transitional to lower granulite facies (650-700°C at 4-5 kb).

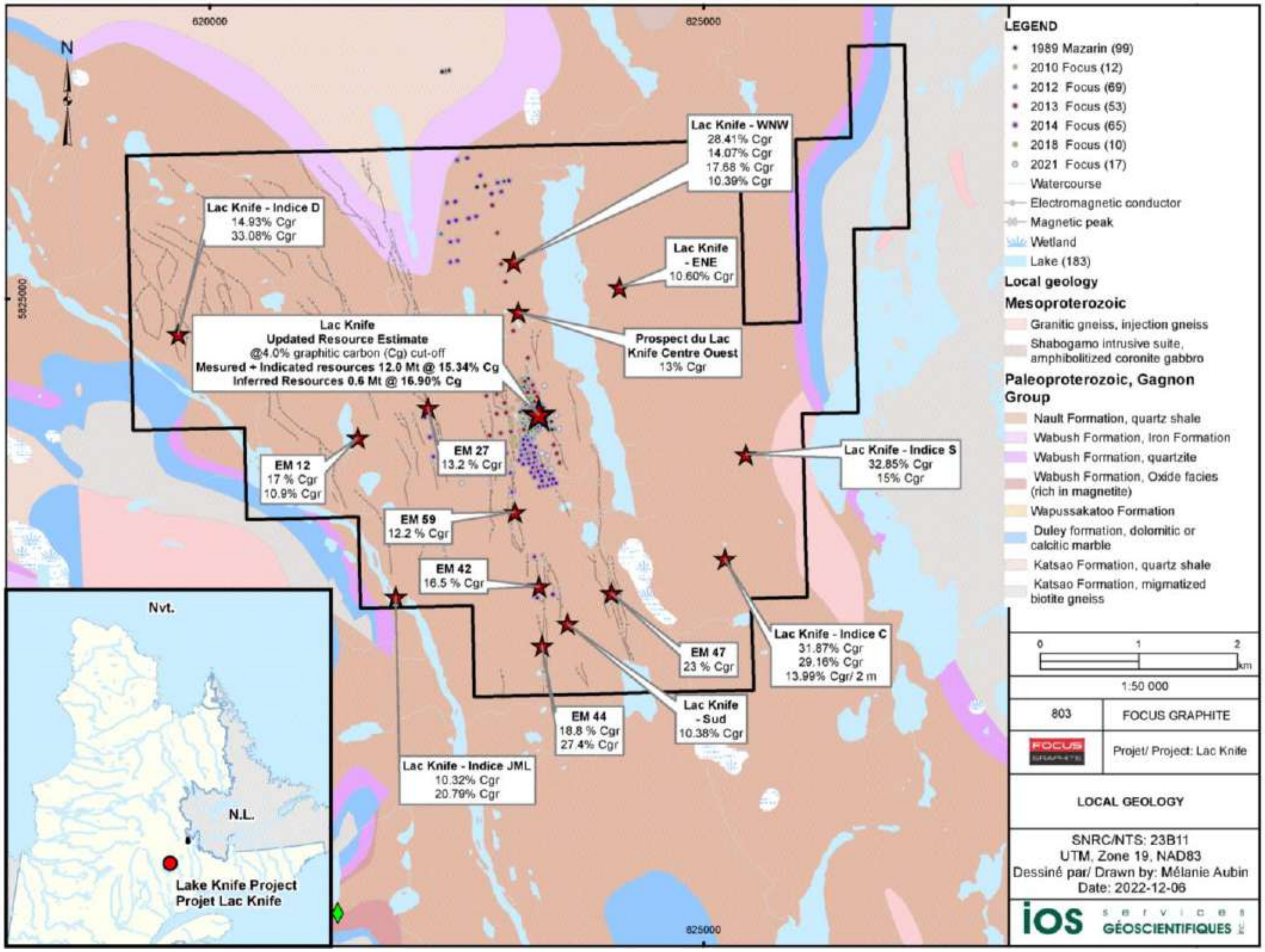
7.3 Mineralisation

Graphite occurs within the Nault Formation as a paragneiss which is a metamorphic equivalent of the graphitic black shales in the Labrador Trough located further north. There is no indication of secondary hydrothermal or other transported, post-metamorphic deposition. The present distribution and crystallinity of the graphite units are due to the Grenville high grade metamorphic events. However, deformation favoured the thickening of graphitic horizons by transposition towards the fold noses.

Birkett et al. examined 28 core samples for petrographic, electron-microscope and chemical studies (Birkett et al., 1989). They noted that the host rocks of the graphite deposit are of the silicate or calcsilicate categories. Tremblay (2014) examined three samples from the deposit and confirmed that the silicate type host rock correlated more with the massive and low-grade mineralization whereas the calcsilicate type is more associated with semi-massive mineralisation.

Mazarin geologists logged the diopside and minor calcite, but did not record the other pale coloured, low-Fe calcsilicates, which can be difficult to identify visually without previous experience or microscopic determination. Thus, the distinction of host-rock lithologies observed in the Birkett study was not reliably reflected in the core logs. Birkett et al. (1989) also noted that within a given host rock, the presence/quantity of graphite and pyrrhotite was the only variable; no other mineral proportions changed with respect to graphite presence/content. These observations have been confirmed since then by Focus and IOS geologists (Block and Gagné, 2014).

Figure 7.3 – Lac Knife Project Geological Map



Source: IOS, 2022

Birkett et al. (1989) also noted that the amount of total iron in whole rock analyses was similar to the silicate rocks; the calcsilicate mineralogy suggests that, likely during metamorphism, the iron migrated to the original sulphides, changing pyrrhotite to pyrite, and deriving low-Fe calcsilicate minerals. Another point was that vanadium (V) was enriched in the phlogopite mica near the graphite, which is consistent with a sedimentary origin for the carbon since V is commonly scavenged by carbon in other sedimentary carbon-rich deposits.

The margins of the graphite lenses and bands are sharp to rapid grade changes with background graphite on the order of <1% graphite increasing to ~5% graphite near the lenses contact. Grades within the lenses range from 5-60% graphite with thin waste bands included. The lenses form continuous elongated horizons from 90 to over 300 m in length based on the limited geometry of the target horizons tested to date. The depth of the graphite rich lenses ranges from 40 to over 120 m on the down dip plane, while thicknesses of individual graphite rich horizons range from < 1.5 m to up to 70 m in the fold noses (typically 20-30 m thick).

The mineralisation has been categorized by Focus into three (3) types: massive, semi-massive and low-grade mineralisation categories (Table 7.1). All three (3) types are intercalated within the mineralized envelope (repetition of several massive horizons with semi-massive and low-grade type horizons) with both edges of the deposit characterised by low grade type mineralisation. The massive type forms metric scale bands (up to 25 m thick) that contain more than 60% graphite with up to 15-20% sulphides (Figure 7.4). The semi-massive type contains 20 to 60 percent graphite and is characterised by metric to decametric horizons intercalated with the massive and low-grade types (Figure 7.4). The low-grade type (5-20% graphite; Figure 7.4) forms horizons a few meters thick that are intercalated with the two previous mineralisation types and is present on both eastern and western edges of the deposit forming a zone of 5-10 m of transition between deposit and barren host rocks. Transition from the low-grade type to the barren quartzo-feldspathic paragneiss is often less than 1 m.

Table 7.1 – Lac Knife Mineralisation Types

Mineralisation Types	Description	Visual graphite content	Approximate graphitic carbon equivalent content
Massive	Almost just graphite and sulfides (up to 15-20%) without host rock	>60% graphite	> 20% Cg
Semi-massive	Banded type (massive decimetric to decametric bands within low grade or barren host rock)	20-60% graphite	10-20% Cg
	Speckled or Breccia-type (graphite and host rock)	20-60% graphite	
Low grade	Disseminated isolated graphite flakes in the host rock	5-20% graphite	2-10% Cg

Host rock (barren)	Disseminated	Trace of graphite	0-1% Cg

Graphite occurs as flakes ranging from 2 mm to very fine grain size in hand sample. Commonly the coarser flakes appear to be associated with Cg grades below ~25% and finer flakes above that. The industrial term for coarse flake is 0.2 mm (200 microns), so that even “fine-grained” to the eye can still provide high quality natural flake graphite.

Birkett, et al. (1989) and Tremblay (2014) observed that the graphite occurs in four (4) modes:

1. Independent grains with coarse to medium flakes > 0.7 mm. These are disseminated flakes up to 2 mm in size and rosette clusters up to 9 mm in size.
2. Independent grains in the fine-grained category (<0.7 mm) includes the higher-grade graphite with ribbons of coarsely crystalline graphite.
3. Graphite inclusions in gangue minerals as scattered fine grains may be relicts of the original, unmetamorphosed graphite protected from metamorphic recrystallisation.
4. Graphite inclusion interlayered with mica, mainly muscovite.

The independent coarse grains (Type 1) are observed within the massive, semi-massive and low-grade types of mineralisation. Low-grade mineralisation contains only large, isolated flakes. Fine flakes (Type 2) can be found in semi-massive mineralisation but are largely associated with massive mineralisation. Fine flakes of Type 3 represent only a weak proportion of the overall flake categories and Type 4 can be observed within all 3 types of mineralisation associated with schistose rocks.

Figure 7.4 – Mineralisation Types Photographs

8 DEPOSIT TYPE

This Section has been summarised and updated from the Technical Report available on SEDAR entitled "NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study Québec – Canada" Met-Chem Project # 2013-064, issued on August 8, 2014, prepared for Focus Graphite Inc.

The mineralisation of the Project (Section 7.3) is consistent with the description of a crystalline flake graphite deposit. These types of deposits are described (Simandl and Kenan, 1997) as being commonly hosted by porphyroblastic and granoblastic marbles, paragneiss and quartzites. The alumina-rich paragneiss and marbles in upper amphibolite or granulite grade metamorphic terrains are the most favourable host rocks. Highest grades are commonly associated with rocks located at the contacts between marbles and paragneisses and deposits are thickest within fold hinges. Minor feldspathic intrusions, pegmatites, and iron formations may also contain disseminated natural flake graphite.

Crystalline graphite deposits are found in any geological setting with a favourable sedimentary paleo-environment that leads to the accumulation and preservation of organic materials, such as intracratonic or continental margin-type basins. Deposits typically display stratiform lens-shapes or saddle-shapes. Individual, economically significant deposits are several metres to tens of metres thick and hundreds of metres to kilometres in strike length. They can occur in large tonnage, low grade stratabound deposits, such as the Nouveau-Monde Matawini deposit in southern Québec, or higher-grade deposits commonly associated with fold hinges, such as the current one.

All but very few graphite deposits currently in development in Québec are of this type (Focus Graphite's Lac Knife and Lac Tétépisca projects, Northern Graphite's (formerly Imérys Group) Lac-des-îles mine, Nouveau-Monde Graphite's Matawini and Uatnan (formerly called Lac Guéret) Projects, Lomiko Metals's La loutre project, Metals Australia's Lac Rainy project, etc).

The favoured model for graphite deposits, formations, such as those hosted in the Nault Formation of the Gagnon Terrane appear to have been formed by graphitisation of the organic material within pre-metamorphic protolith (black shales of Menihek Formation, Labrador Trough). The graphite crystallinity is linked to the degree of metamorphism. The Menihek Formation is interpreted to have formed as pelitic carbonaceous mud sediments filling emerging basins, probably with a number of localized anoxic basins.

The Lac Knife deposit corresponds to the metamorphic equivalent at the upper amphibolite to granulite facies of the Menihek black shales, plus tectonic remobilisation into higher grade zones in fold hinges. Simandl and Kenan stated that the grade and tonnage of producing mines and development projects can vary substantially.

9 EXPLORATION

This Section has been summarised and updated from the Technical Report available on SEDAR entitled NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study Québec – Canada" Met-Chem Project # 2013-064, issued on August 8, 2014, prepared for Focus Graphite Inc.

A description of the historical exploration work conducted on the Property is provided in Section 6.2.

Since 2010, the year the Project was acquired, Focus has conducted exploration programs including: a due diligence evaluation, bulk sampling, LiDAR topographic surveys, ground geophysical surveys, and five (5) diamond drilling exploration and definition drilling programs. Results of these drilling campaigns (2010-2011, 2012, 2013, 2014, and 2018) are described in Section 10 of this Report.

9.1 Due Diligence Evaluation

Exploration work by Focus at Lac Knife started in 2010 with a geological and environmental due diligence evaluation of the Project and a technical review of the historical project database by Roche Ltd. The results were used to plan a new diamond drilling campaign, the first at Lac Knife in over 20 years.

9.2 Bulk Sampling

In August 2012, as mandated by Focus, G.L. Géoservice Inc. of Rouyn-Noranda, Québec, completed the excavation of a bulk sample in the northern part of the deposit (former bulk sampling site 2000-1). Approximately 35 tonnes of semi-massive, mineralized rocks were blasted. The sample was later transported in September by Transport Lesage of Fermont to the IOS facilities in Laterrière, Québec. The sample was then crushed to 0-6 inches and stored in one (1) tonne bulk pouches until utilized for different metallurgical tests conducted by Metchib Laboratories and Graphite Zero. The sample was also used for pilot plant test work. (Figure 9.1). The bulk sample was fully utilised, and no material remains.

9.3 LiDAR Topographic Survey

In August 2012, Focus sponsored a remotely sensed Light Detection and Ranging ("LiDAR") topographic survey of the entire Lac Knife claim block and access road which was supplemented by optical air photography coverage. The helicopter-supported survey was carried-out by Mosaic 3D of La-Pêche, Québec. Deliverables included a high resolution geo-referenced LiDAR image; an ASCII database of XYZ elevation points; a geo-referenced air photo mosaic; and a geo-referenced topographic contour map in digital format. The high-resolution LiDAR survey data is used for detailed engineering and site infrastructure studies as well as for planning the access road work for the Project.

Figure 9.1 – Stored Bulk Samples at IOS' Facilities in Laterrière, Québec

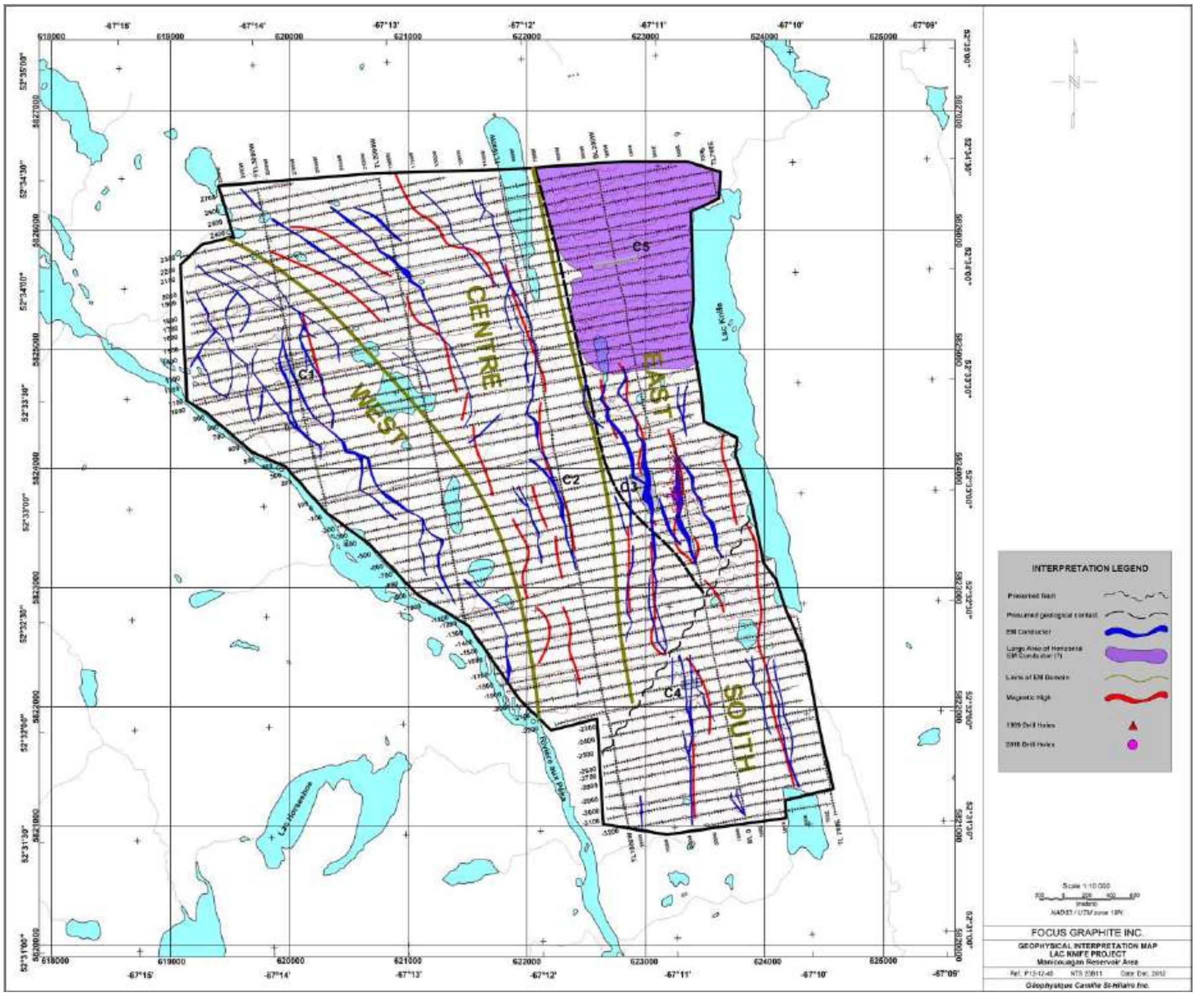
9.4 Horizontal Loop Electromagnetic ("HLEM") Ground Geophysical Survey

From August 13 - October 4, 2012, G.L. Géoservice Inc. of Rouyn-Noranda, Québec, completed a magnetic and horizontal loop electromagnetic (HLEM) ground geophysical survey on the Project. The line cutting and geophysical survey covered the entire Project area west of Lac Knife. The magnetic survey covered 202 line-km and the electromagnetic survey was performed over 182.2 line-km. The line spacing for both geophysical surveys was 100 m.

A GEM GSM-19 Overhauser magnetometer was used to acquire Total Magnetic Field Intensity data along grid lines, with a spacing of 5 m. A second GSM-19 magnetometer was used as a base station in order to monitor diurnal variations of the TMI with a rate of one reading every 20 seconds. The base station was located near the eastern end of the baseline. An Apex Parametrics MaxMin 1-5 Electro-magnetometer was used for the horizontal loop EM survey. In-phase (IP) and quadrature (OP) components of the secondary magnetic field were observed at stations 25 m apart, with a transmitter-receiver coil separation of 75 m. EM components were acquired using two (2) transmitting frequencies (111 and 444 Hz). Due to strong topographic relief variations present on the survey area, a Suunto Clinometer was used to measure terrain elevation and slopes along each traverse.

The Company received the survey data results and interpretation reports (submitted by Géophysique Camille St-Hilaire of Rouyn-Noranda) in December 2012. The geophysical anomalies identified by the surveys (Figure 9.2) have been investigated during the summer of 2013 exploration drilling program.

Figure 9.2 – Horizontal Loop Electromagnetic and Magnetic Ground Geophysical Survey Interpretation Map



9.5 Exploration Work Since 2014

The following exploration work, aside of drilling, has been completed on the Lac Knife property since the 2014 FS NI 43-101 Report was submitted in 2014. Many of these surveys were initially planned for environmental characterisation but were also evaluated from a base metal exploration standpoint:

- Phase 1 soil sampling (manual pitting) by IOS, in early 2018, within the perimeter covering mine and mill complex and the tailings management system. A total of 72 sites were sampled with 350 soils samples collected in preparation for environmental testing (multi-element, organic carbon, NO_2-NO_3, and hydrocarbon analyses). Distribution of metal abundance in these soils has been reviewed from an exploration standpoint, without revealing evidence for Sedex or Besshi type base metal mineralization associated with the pyrrhotite and graphite bearing units, but new prospective graphite signatures were detected (Vermette et Villeneuve, 2021).

- Completion by IOS in October 2018, of Phase 2 soil sampling (mechanical trenching and shallow overburden drilling) within the perimeter covering the mine and mill complex and the tailings storage facility. A total of 88 sites were sampled during Phases 1 and 2 of the soil sampling programs with 513 soils samples collected in preparation for environmental testing (multi-element, organic carbon, NO_2-NO_3, and hydrocarbon analyses). As of the reporting date, IOS had received 1,001 soil assay results from Eurofins Environmental Testing Canada Inc. and was compiling and analyzing the data. Results were also evaluated with an exploration perspective.
- Completion by IOS in October 2021 of phase 3 of soil sampling, either with the use of hand shovel, hydraulic excavator or overburden drilling, targeting under new infrastructure location. Geochemical results were integrated with former soil sampling to reinterpret metal dispersion with an exploration perspective (report pending).
- Completion in summer 2021, under IOS' supervision of, of 15 shallow bore holes for geotechnical and hydrogeological characterization work, of which six (6) were twinned, for a total of 21 holes (Tremblay et al, in preparation).
- Completion by IOS, from October 2018 to May 2020, of a targeted surface water, groundwater, and lake bottom sediment survey (Longueépée et Vermette, 2021) of the Lac Knife property. A total of 20 surface water samples, 205 lake bottom sediment samples and 64 ground water samples were collected in the course of a full year cycle, in preparation for environmental testing. IOS had received all ground water geochemistry results from Maxxam Analytique of Ville Saint-Laurent, Québec. IOS will be processing the lake bottom sediment geochemical analysis results as they come in over the next reporting period, while Richelieu Hydrogéologie will be processing and interpreting the water quality data (Vermette et al, in preparation)
- Realisation in 2018-2019 of kinetic (humidity cell) tests on Lac Knife pilot plant residue treated with dolomitic marble from the Montagne-aux-Bouleaux occurrence by Services Géoscientifiques Labtem. The tests, which spanned over 52 weeks, demonstrated the concept of residue liming (Bernier 2020).
- Condemnation drilling in 2021 designed to tests areas of the Lac Knife Property where mining infrastructure such as the mill, garage and other buildings; roads and power lines; waste and tailings piles, etc. will be built to be sure there are no significant graphite or other valuable minerals and metals below this infrastructure. Ten (10) condemnation holes were drilled (total: 1,785.45 m). The program also evaluated the acid drainage generation potential of the waste rocks and measuring mechanical properties of the pit wall. Core assays and reports are currently pending.
- In summer 2021, prospecting, geological mapping, and outcrop sampling targeting untested ground geophysical (MAG-EM) conductors outside the perimeter of the currently planned

infrastructure (Lavoie et Joly, in preparation). Prospecting indicated the presence of a few mineralized occurrences, upon which no drilling follow-up has been conducted yet.

- In 2021, a series of three trenches were excavated and sampled over the Duley dolomitic marble in the north-east corner of the Lac Knife property (Joly et Girard, 2022). The purpose was to evaluate their quality and quantity to be used for liming of the residues, as was done for the Montagne-aux-Bouleaux dolomitic marble quarry. Results are too preliminary to consider quarrying this occurrence within the current study.

9.6 Exploration for Limestone in the Vicinity of Lac Knife

Focus has explored the limestone occurrence in Montagne-aux-Bouleaux with the intention of using this deposit to counteract or neutralise the potential acid generating (PAG) materials in the dry tailings area and the waste dump area. A total of two (2) wide trenches were excavated and 6 drill holes for 951 metres were drilled (Block et Girard, 2019), for a total of 338 samples assayed. This is further discussed in Section 24.

10 DRILLING

This Section has been updated from the Report available on SEDAR entitled NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study Québec – Canada" Met-Chem Project # 2013-064, issued on August 8, 2014, prepared for Focus Graphite Inc.

10.1 Historical Drilling

From January to April 1989, Mazarin completed the first property wide drilling program at the Lac Knife property. The program targeted different showings on the Property; however, encouraging results on the area west of Lac Knife led Mazarin to focus almost all exploration efforts in that portion of the Project. A total of 93 definition holes (7,377 m) and six (6) exploration holes in the northern part of the claims block (293 m) were completed for an overall 99 BQ-sized holes (total: 7,670 m). The holes were collared at 25 m spacing on average and were distributed on 25 m spaced sections. The 93 definition drill holes defined three (3) main graphite-bearing zones, extending more than 500 m in length and down to a minimum depth of 125 m.

A total of 2,606 samples (1.5 m in general) were analyzed for graphitic carbon by Chimitec of Ste-Foy, Québec. Two (2) series of samples have been reanalyzed by Metric-Lab of Montreal and *Centre de Recherches Minérales (CRM)* of Québec City as part of the QA/QC program. Drilling was conducted by Forage Béland of Val-d'Or under supervision of Mr. Pierre Poison, geologist of Explograph Inc. on a 24 hour / 7 days per week work schedule.

For each sample, a representative piece of core measuring between 5 and 10 cm long was preserved as a witness and stored in core boxes. At the time, the witness core boxes were transported from Lac Knife to the Justair Aviation seaplane base near Fermont. To prevent deterioration of the boxes, the witness core was subsequently moved and stored in a warehouse in Fermont. The waste section of the core was stored outside in cross piles at the Project. Currently, only drill logs and assay certificates remain. The original drill core was returned and discarded on Lac Knife 2001 bulk sample location sites in 2009 by IAMGOLD as part of the site re-habilitation work.

No information is available regarding the chain of custody from the drill to the laboratory. Following a review of a selection of historical drill logs, the author believes the logging procedures were executed to industry standards at the time the work was performed.

Table 10.1 details all 99 historical holes drilled prior to Focus's involvement with the Project as illustrated in Figure 10.1.

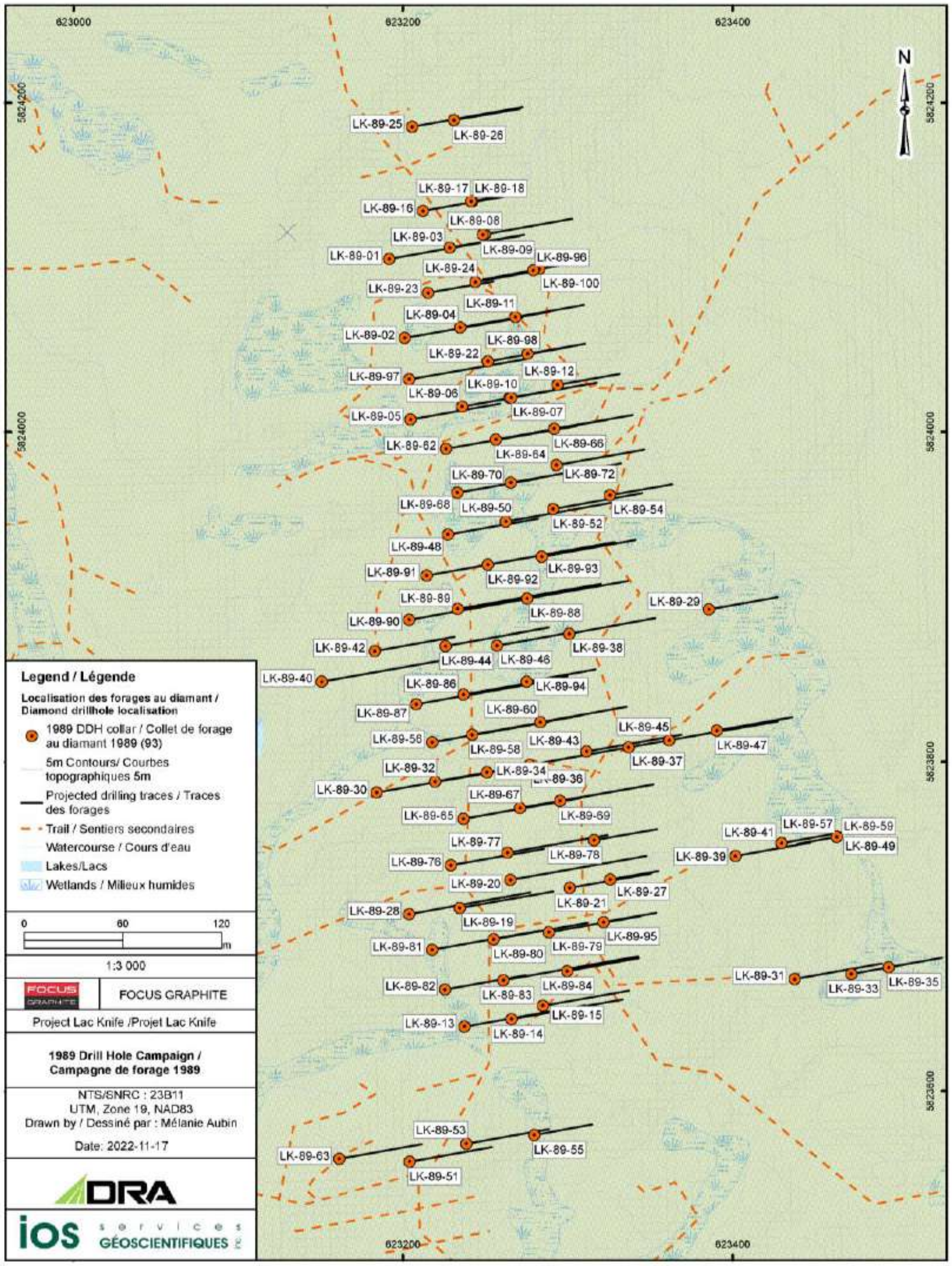
Table 10.1 – 1989 Drilling Campaign

Drill Hole	Easting (m)	Northing (m)	Elevation (m)	Azimuth (degree)	Dip (degree)	Length (m)
LK-89-01	623191.6	5824105.327	692.9	80	-45.5	114.6
LK-89-02	623200.9	5824057.207	693.0	80	-48	108.51
LK-89-03	623228.4	5824112.066	692.4	80	-46	65.84
LK-89-04	623234.6	5824063.576	696.1	80	-47	81.08
LK-89-05	623204.6	5824007.751	688.9	80	-45	78.03
LK-89-06	623236.1	5824015.739	686.7	80	-45	108.51
LK-89-07	623264.6	5824020.843	688.5	80	-46.5	78.03
LK-89-08	623249.8	5824120.21	692.2	80	-48	80.5
LK-89-09	623248.4	5824119.954	692.2	80	-88.5	53.04
LK-89-10	623265.8	5824021.063	688.5	80	-77	53.64
LK-89-100	623282.7	5824099.071	686.2	80	-45	26.21
LK-89-11	623268.3	5824070.043	689.0	80	-45	59.74
LK-89-12	623293.8	5824028.92	694.4	80	-45	53.95
LK-89-13	623237.2	5823639.303	675.5	80	-45.5	105.87
LK-89-14	623266	5823643.737	676.4	80	-44.5	96.32
LK-89-15	623285.1	5823651.774	680.8	80	-45	74.98
LK-89-16	623212	5824134.451	694.5	80	-45	87.17
LK-89-17	623242.1	5824140.339	694.4	80	-45	41.45
LK-89-18	623241.4	5824140.211	694.7	80	-72	29.26
LK-89-19	623234.5	5823711.321	681.0	80	-44	79.86
LK-89-20	623265.2	5823728.223	688.7	80	-46	120.7
LK-89-21	623301.2	5823723.42	680.8	80	-46	71.93
LK-89-22	623251.5	5824043.027	689.1	80	-45	71.93
LK-89-23	623215.2	5824084.688	692.9	80	-45	56.69
LK-89-24	623244	5824091.359	694.5	80	-47	52.73
LK-89-25	623205.5	5824185.515	701.4	80	-44	94.79
LK-89-26	623230.8	5824189.506	700.6	80	-44	56.69
LK-89-27	623325.9	5823728.518	680.4	80	-45	41.45
LK-89-28	623203.6	5823707.62	679.5	80	-45	105.86
LK-89-29	623385.7	5823892.519	679.0	80	-45	59.74
LK-89-30	623183.9	5823781.359	687.7	80	-48	120.7
LK-89-31	623437.6	5823668.223	679.8	80	-44	74.98
LK-89-32	623219.5	5823788.075	686.0	80	-46	120.09
LK-89-33	623472.3	5823671.223	674.4	80	-46	53.64
LK-89-34	623251	5823793.728	683.0	80	-47	90.22
LK-89-35	623494.8	5823675.311	675.0	80	-46	47.55
LK-89-36	623276.9	5823798.241	687.3	80	-46	90.22

Drill Hole	Easting (m)	Northing (m)	Elevation (m)	Azimuth (degree)	Dip (degree)	Length (m)
LK-89-37	623337	5823808.901	685.6	80	-46	111.56
LK-89-38	623300.9	5823877.762	684.8	80	-45	74.98
LK-89-39	623401.8	5823742.944	678.8	80	-46	66.14
LK-89-40	623150.7	5823848.828	693.5	80	-44.5	102.41
LK-89-41	623429.7	5823750.667	677.1	80	-45	65.84
LK-89-42	623182.8	5823867.301	688.9	80	-47	71.93
LK-89-43	623311.3	5823806.267	692.4	80	-44	81.08
LK-89-44	623225.8	5823870.307	686.6	80	-45	90.22
LK-89-45	623361.5	5823813.059	685.6	80	-44	93.27
LK-89-46	623256.9	5823870.61	683.9	80	-46	62.79
LK-89-47	623390.4	5823819.042	682.3	80	-45	65.84
LK-89-48	623227.4	5823937.853	687.3	80	-47	81.08
LK-89-49	623463.4	5823754.388	675.4	260	-65	58.22
LK-89-50	623262.4	5823945.872	687.4	80	-44	92.66
LK-89-51	623203.9	5823557.24	676.2	80	-46	73.15
LK-89-52	623291	5823953.428	689.6	80	-45	78.03
LK-89-53	623238.4	5823568.128	679.3	80	-45	71.93
LK-89-54	623325.5	5823961.687	691.5	80	-47.5	56.69
LK-89-55	623279.5	5823573.435	673.5	80	-45	50.6
LK-89-56	623217.6	5823811.931	683.7	80	-45.5	102.41
LK-89-57	623463.4	5823754.388	675.4	0	-90	22.86
LK-89-58	623242.2	5823816.501	690.6	80	-46	96.32
LK-89-59	623463.4	5823754.388	675.4	260	-47	17.07
LK-89-60	623283.5	5823824.179	684.2	80	-45	74.98
LK-89-61	623022.7	5826187.835	715.0	80	-45	41.45
LK-89-62	623226.1	5823989.984	686.7	80	-45	114.6
LK-89-63	623161.3	5823558.877	684.6	80	-45	71.93
LK-89-64	623256.4	5823995.614	690.6	80	-44	96.32
LK-89-65	623236.7	5823765.443	682.0	80	-45	102.41
LK-89-66	623291.8	5824002.195	692.1	80	-41	64.31
LK-89-67	623270.9	5823771.903	686.0	80	-44.5	105.46
LK-89-68	623232.9	5823963.375	685.5	80	-46	71.93
LK-89-69	623295.4	5823776.356	690.9	80	-49	87.17
LK-89-70	623265.4	5823969.327	685.4	80	-47	99.36
LK-89-71	622984.1	5826180.669	711.8	80	-46	66.14
LK-89-72	623293	5823980.153	691.6	80	-46	78.03
LK-89-73	622428.1	5827309.035	705.8	80	-44.5	50.6
LK-89-74	622389.2	5827301.795	707.0	80	-46	47.55

Drill Hole	Easting (m)	Northing (m)	Elevation (m)	Azimuth (degree)	Dip (degree)	Length (m)
LK-89-75	622359.5	5827296.275	704.5	80	-45	50.6
LK-89-76	623229.1	5823737.283	681.8	80	-45	81.08
LK-89-77	623263.5	5823744.897	687.9	80	-45	86.87
LK-89-78	623316	5823752.423	680.4	80	-45	54.56
LK-89-79	623288.6	5823696.465	680.7	80	-46	81.08
LK-89-80	623254.9	5823692.234	680.7	80	-44.5	81.08
LK-89-81	623217.7	5823685.816	678.4	80	-45	93.27
LK-89-82	623225.5	5823661.84	678.0	80	-46	71.93
LK-89-83	623260.7	5823667.383	679.5	80	-45	117.65
LK-89-84	623299.7	5823673.093	680.5	80	-48	65.84
LK-89-85	622709.8	5826129.666	712.4	80	-49	36.58
LK-89-86	623236.6	5823840.897	687.5	80	-48	95.71
LK-89-87	623207.9	5823835.049	683.4	80	-45	105.46
LK-89-88	623275.4	5823898.957	684.1	80	-46.5	90.22
LK-89-89	623233.1	5823892.626	686.7	80	-45	124.97
LK-89-90	623203.8	5823886.158	684.4	80	-44.5	99.36
LK-89-91	623214.5	5823913.061	686.7	80	-45	145.08
LK-89-92	623251.6	5823919.658	690.7	80	-45.5	111.56
LK-89-93	623284.1	5823924.492	685.1	80	-46.5	84.12
LK-89-94	623275.1	5823848.769	685.2	80	-45	59.74
LK-89-95	623321.8	5823702.644	680.5	80	-45	45.72
LK-89-96	623279.2	5824098.315	685.8	260	-60	62.18
LK-89-97	623203.6	5824032.085	689.9	80	-47	108.51
LK-89-98	623275.7	5824047.622	688.9	80	-46.5	51.21
					Total	**7,670.2**

Figure 10.1 – 1989 – Drillholes Location



Source: IOS, 2022

10.2 Focus Graphite Drilling Programs

Since 2010, IOS Services Géoscientifiques (IOS) has been responsible for managing all aspects of the drill programs including sample preparation, logistics, crew management, and monitoring of the QA/QC program for Focus. At the end of each drill program, IOS also authored a comprehensive internal report. IOS is an independent company providing exploration, sample preparation, and geographical information services to various exploration companies and government agencies.

To date, a total of 217 holes for 25,652 m have been completed by Focus since 2010.

Table 10.2 summarises the different drill programs completed on the Lac Knife Project.

Table 10.2 – Summary of Focus Diamond Drill Programs

Year	Type of Work	Summary Results
2010-2011	Twin Hole Drill Program to confirm Mazarin's historical drilling	12 NQ-sized holes for a total of 1,234 metres
2012	Infill and Deposit Margin Drill Program aiming to: Upgrade the Inferred mineral resources in the southeastern part to the Indicated category Map the limits of the deposit and provide sufficient mineralised material for metallurgical and pilot plant test programs	56 PQ-sized holes for a total of 5,638 metres
	Exploration Drill Program aiming to extend the deposit's southwest portion and test the iron formation (one hole)	13 NQ-sized holes for a total of 1,674 metres
	Re-Sampling of the 2010-2011 Drill Campaign to correct issues related to the original 2011 assays	
2013	Infill Drill Program that aimed to upgrade the quality of existing Indicated and Inferred Resources into the higher quality category of Indicated and Measured Resources	24 PQ-sized holes for a total of 1,368 metres
	Twin Hole Drill Program to increase confidence in the Mineral Resource Estimate	8 PQ-sized holes for a total of 713 metres
	Down-Dip Drill Program to generate mineralised material for metallurgical and research studies	6 PQ-sized holes for a total of 630 meters
	Exploration Drill Program that aimed to test geophysical anomalies west and southeast of the deposit as well as in the northern portion of the claim block	23 NQ-sized holes for a total of 3,191 metres
2014	Twenty-six (26) exploration holes and thirty-nine (39) definition drill holes to tighten-up the FS resource definition area	65 NQ-sized holes for a total of 8,072 metres
2018	Ten (10) holes to test the graphite potential in the deep western side of the open pit shell footprint as defined in the 2014 FS	10 NQ-sized holes for a total of 3,132 metres

10.3 2010-2011 Drilling Campaign

10.3.1 2010-2011 Twin Hole Drilling Campaign

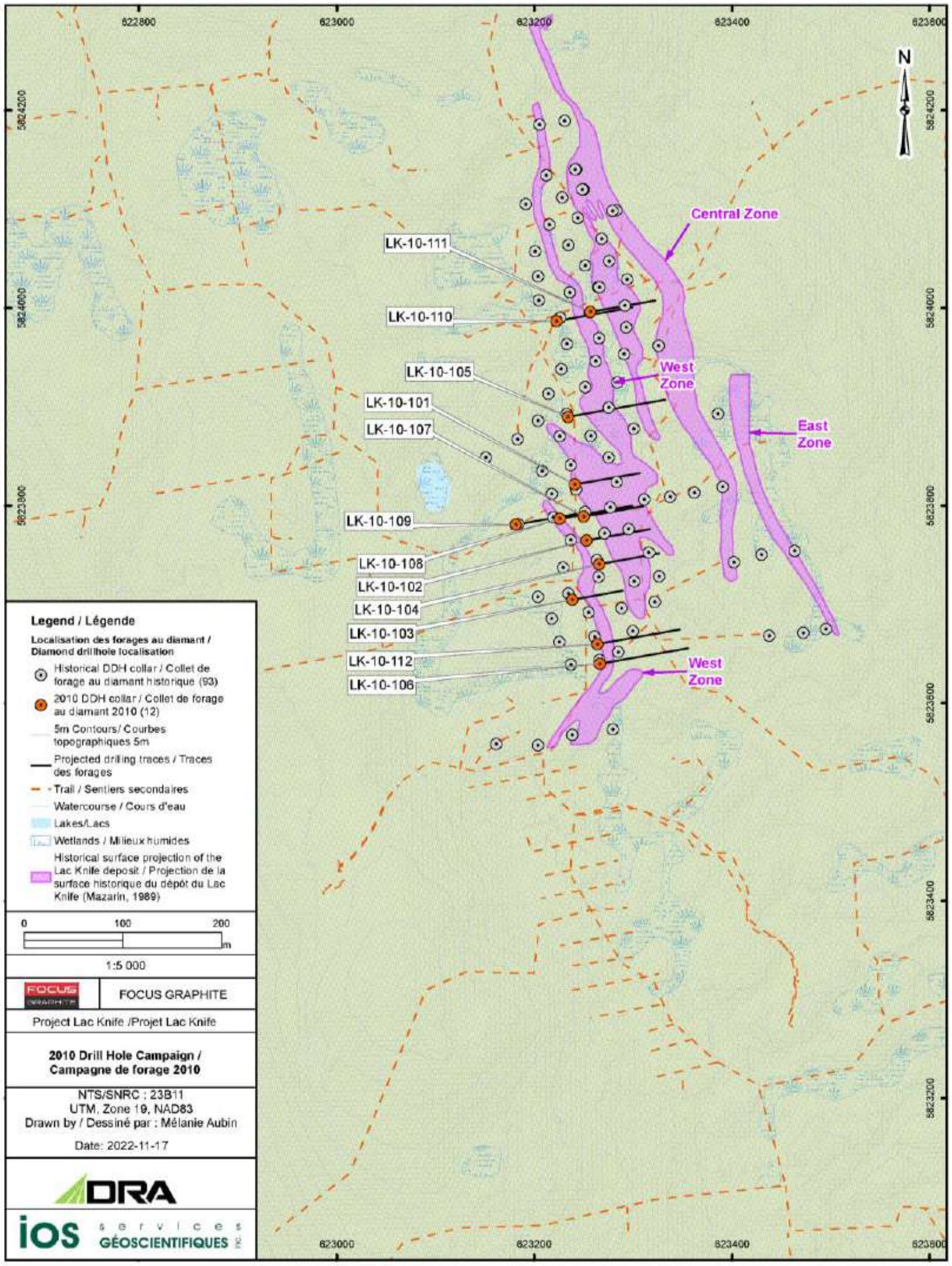
The twin hole drilling program was planned by Mr. Edward Lyon, geological consultant for Roche Groupe-Conseil (Roche) with the support of Mr. Marco Gagnon, geologist and President and subsequently by Mr. Tony Brisson, geologist and Vice-President Exploration both of Focus. The drilling campaign was conducted under contract by IOS of Chicoutimi, Québec between December 7, 2010, and February 4, 2011. The field program was halted in mid-December until early January due to unseasonably cold weather, which made access impossible and that hindered access to bring in local supplies, as well as year-end holiday season. Roche selected the deepest historical drill holes into the graphite mineralisation. The "twin" drill hole program aimed to replicate the best historical holes in terms of grade and depth of penetration through the graphitic horizons. Twelve (12) drill holes were completed for a total length of 1,234 m. The drill data is summarised in Table 10.3 and illustrated in Figure 10.2.

Table 10.3 – 2010-2011 Twin Drill Holes Summary

Twin Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)	Historical Hole
LK-10-101	623203	5823595	687.2	76	-46	96.32	LK-89-58
LK-10-102	623215	5823538	683.2	75	-45	92.74	LK-89-65 & 67[2]
LK-10-103	623201	5823478	681.3	77	-46	72.12	LK-89-19
LK-10-104	623228	5823514	687.8	80	-48	87.05	LK-89-77
LK-10-105	623197	5823663	686.7	74	-46	141	LK-89-89
LK-10-106	623229	5823413	676.7	90	-46	126.25	LK-89-14
LK-10-107	623212	5823562	684.4	76	-45	87.31	LK-89-34
LK-10-108	623188	5823560	686.4	80	-46	107.83	LK-89-32
LK-10-109	623143	5823554	688.3	80	-50	99.3	LK-89-30
LK-10-110	623184	5823760	688.1	90	-45	111	LK-89-62
LK-10-111	623219	5823769	688.4	75	-45	93	LK-89-64
LK-10-112	623226	5823433	678.8	90	-46	120	LK-89-83
					Total	**1,233.92**	

Notes:
1. Coordinate system UTM NAD 27 zone 19 surveyed by Raynald Babin & Associates
2. LK-10-102 is a near twin, approximately equidistant between LK-89-97 (18m) and LK-89-77 (20m). Other holes are < 9m from the historical hole.

Figure 10.2 – 2010 – Drillholes Location



Source: IOS, 2022

The Mazarin drill grid was reconstructed, and georeferenced into UTM coordinates by IOS surveying several known old drill sites marked by casing, or sometimes by the center of drill pad clearings, as well as Differential GPS (DGPS) surveying by Raynald Babin & Associés of Baie-Comeau, Québec, who has experience in surveying mines in the region. The new hole locations were generally within 2-9 m of the Mazarin drill hole coordinates.

Most historic drill hole collars were not preserved, meaning that their location, indicated only as grid coordinates remains uncertain. The cut grid and collars were surveys by a land surveyor and anchored on a local datum (surveying post). It has not been possible to locate this post. Consequently, it has been necessary to anchor the cut grid on a properly located benchmark, and to triangulate the location of each hole. Consequently, an imprecision remains on their absolute and relative position. This imprecision has not been quantified.

Consequently, the position of these holes to the Focus ones has an imprecision, estimated to a few meters. Further discrepancies were induced while the collar location was implemented, leading to an erratic difference of a few meters between 1989 and 2010 collars. Considering that the hole spacing in typically of 25 meters, this is 10% error. Also, no mention is made in the report about downhole surveying. Mazarin hole were likely measured with acid tests, while 2010 holes were with a Flex-It device. Since the host rock is magnetic, due to pyrrhotite abundance, deviation measurement can be discrepant.

Services de Forage D.V. Inc. of St-Honoré, Québec used one skid-mounted hydraulic drill rig to drill NQ-sized core. The rig was operated on two (2) 12-hour shifts, seven days a week. Drill holes were intended to duplicate Mazarin holes, using the same collar location as much as possible with the same azimuth, inclination, and depth. The program was supervised by Mr. Steve Lavoie, a geologist in training for IOS. The 12 drill holes were labelled LK-10-101 to LK-10-112, sequential with Mazarin's 1989 holes.

Hole deviation was measured with the use of a Flex-It surveying instrument measuring magnetic orientation and inclination with readings approximately every 25 m on average. Information on the ground temperature and magnetic intensity of the rock was collected as well.

Core was shipped by truck to the IOS facility in Chicoutimi, Québec, since no core logging facility was built on-site. During that program only the RQD and fracture density were recorded in the field. At the IOS facility, the core was measured, and core boxes were labelled with aluminum tags showing the drill hole number, box number, and from-to metres. The core was logged by Mr. Jean-Paul Barrette, geologist, assisted by Mr. Steve Lavoie, a geologist in training. The twin drill holes were logged using industry standard practices. The historical Mazarin drill logs were referenced during the logging to keep consistency in the between the twin and the historical holes. The 1980s geological coding was not considered by IOS and Focus to be sufficiently detailed. Implemented during the 2010 drill campaign, IOS established new lithological names based on a classification of mineralized and non-mineralized lithologies that were coded according to a legend adapted from the Québec Department of Natural Resources. The core was logged for lithology, structure, alteration, and mineralisation.

Core angles of significant structures were measured with a drill core protractor. Pictures of the core, both general and detailed views, were taken with a digital camera. Percentages of graphite and sulphides were systematically estimated.

Descriptions and logs were captured in Excel spreadsheets and imported in Access databases compatible with Gemcom GEMS© (GEMS) software. Sections were drafted using GEM's Explorpac software and imported into Bentley Microstation for editing.

All graphite bearing intervals have been fully sampled, including shoulder samples spanning a few metres on both sides of the zone. Selected sample intervals were marked on the core and indicated with sample tags stapled into the core boxes. Sample intervals are typically 1.5 m long but can range from 0.48 m to a maximum of 2.4 m to capture specific lithological or mineralogical sections of interest.

Sample preparation (crushing and grinding) has been performed at IOS facilities. The core was stored in wooden core boxes in a dry warehouse to avoid sulphide oxidation, until completion of the project, and then transferred to regular core racks at IOS facilities. The pulps were forwarded to Inspectorate Laboratory in Vancouver, under the recommendation of Mr. Edward Lyon, a qualified person for Roche.

A modern standard quality assurance and quality control program was implemented for this drilling program. Upon receiving results from the laboratory, IOS identified numerous quality problems, including sample tag inversion and under-estimation of the grade of the reference material. The sample tag inversion was corrected by re-assaying; however, for hole LK-10-104 and LK-10-108 it was decided to re-sample the core and send the pulps to ALS Minerals for analysis. At the time, results obtained from Inspectorate Laboratory showed the 1989 sample results globally overestimated the 2010/11 results by a factor approaching 15%. More precisely, the difference was directly proportional to the grade with differences significantly higher than 15% when carbon grade was higher than 15% Cg. Focus believed that the analytical method used in 2010/2011, was different to the one used in 1989, this caused the underestimation of the Cg grade. Results from this limited re-sampling program reinforced the belief that the 2010/11 assays were underestimating the actual grades of graphitic content.

In their October 2012 technical report, RPA considered the 2010/11 drilling campaign did not reach the program's objective in terms of analytical results but nevertheless the 2010/11 drill holes confirmed the presence of graphitic carbon as well as the confirmation of the lithological interpretation of the mineralized zones. At that time, RPA and IOS recommended to carry out a detailed study of the analytical methods best suited to assay graphitic carbon using certified reference materials (CRM), and also to carry out a laboratory round-robin survey with the objective of selecting an appropriate laboratory and analytical procedure. This was done to remove any uncertainty and restore a high level of confidence in the Mineral Resource Estimates. This detailed study program was completed by Focus prior to initiating the 2012 exploration drilling campaign.

10.3.2 Re-Sampling of the 2010-2011 Twin Hole Drilling Campaign

Following the results of the round robin program, *Consortium de Recherche Appliquée en Traitement et Transformation des Substances Minérales* ("COREM") laboratory was selected for assaying drill core from the 2012 drill campaign. Focus implemented the recommendation by IOS and RPA to have every core interval from the 2010 twin drill hole program re-sampled and assayed at COREM. The goal was to remove uncertainties regarding the differences observed between the 1989 drill holes assays and the 2010/11 twin holes assays (described in Section 12). The drill core of each sample was quarter-sawed, or even eighth-sawed for holes LK-10-101 and LK-10-112 and submitted to COREM for assaying. As a result of this campaign, RPA recommended discarding the sample assay results from the 2010 twin hole drilling campaign produced by Inspectorate in 2010/11 and replace them with the corresponding assay results produced by COREM in 2012. A second examination of the twin drill hole results using the COREM assays indicated the 1989 drill hole data was adequately confirmed by the 2010 twin drill hole program rendering them suitable for use in mineral resource estimation.

10.4 2012 Drilling Campaign

A total of 69 drill holes were completed in 2012 for a total length of 7,312 m. Table 10.4 details the drilling parameters pertaining to the 2012 drilling campaign designed by Focus and IOS and Figure 10.3 illustrates the 2012 Infill and Deposit Margin Drill Holes Location.

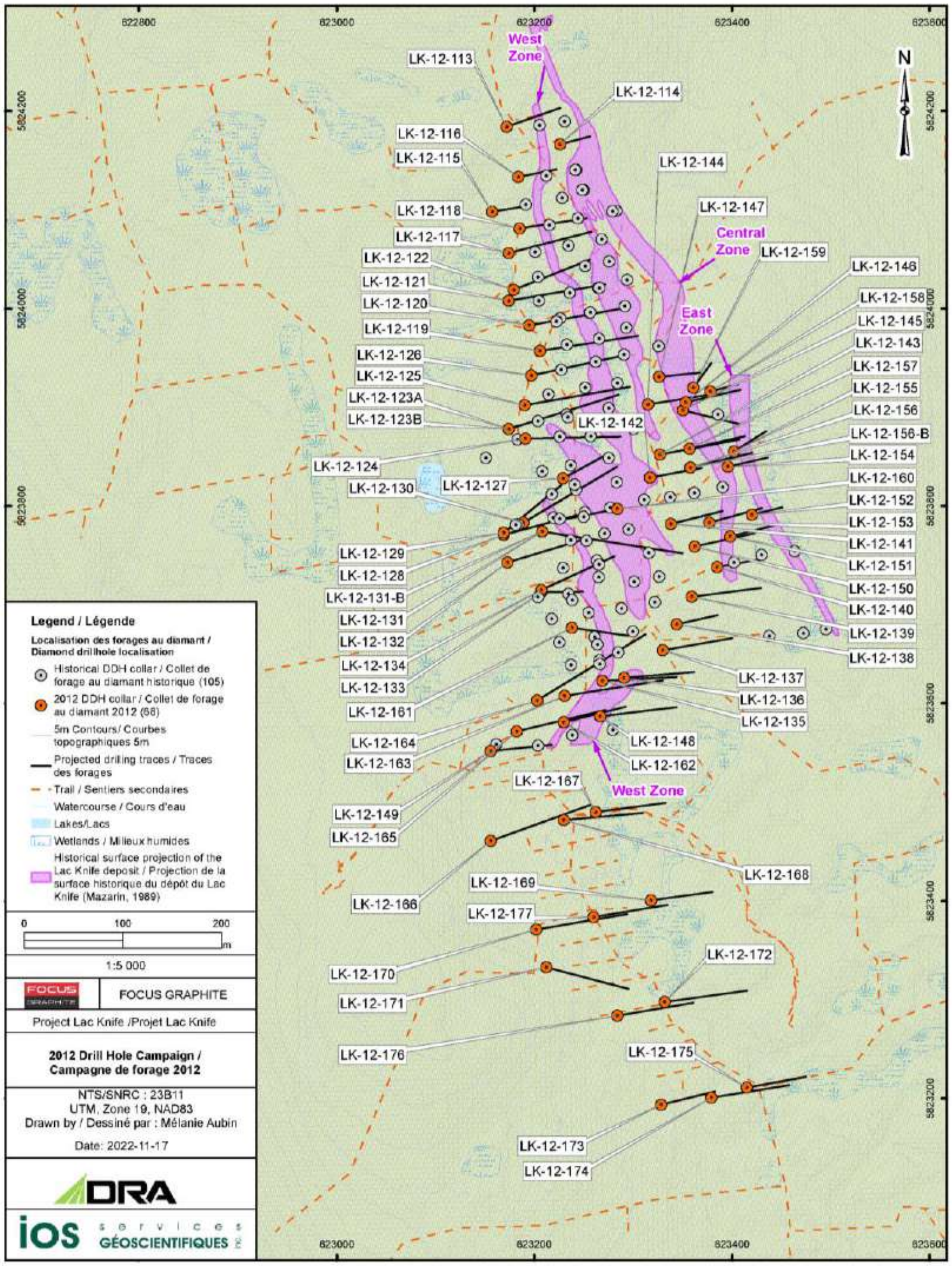
Table 10.4 – 2012 Drilling Campaign

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-12-113	623172	5824184	704	70.7	-46	82.5
LK-12-114	623226	5824166	699	75.28	-45	45
LK-12-115	623157	5824098	696	80.98	-47	55.5
LK-12-116	623184	5824133	701	78.53	-45	55.5
LK-12-117	623174	5824056	691	75.43	-50	135
LK-12-118	623185	5824081	692	81.37	-47	100.5
LK-12-119	623206	5823957	687	81.25	-47	147
LK-12-120	623195	5823983	689	79.65	-47	138
LK-12-121	623174	5824008	690	80.55	-47	145.5
LK-12-122	623179	5824019	691	68.57	-50	129

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-12-123A	623174	5823878	686	72.68	-47	15.2
LK-12-123B	623174	5823878	686	72.68	-47	171
LK-12-124	623191	5823868	688	88.55	-47	141
LK-12-125	623190	5823902	686	80.05	-47	159
LK-12-126	623197	5823932	686	77.73	-47	145.5
LK-12-127	623229	5823828	688	61.67	-69	130.5
LK-12-128	623169	5823771	686	74.98	-52	124.5
LK-12-129	623169	5823773	686	50.57	-47	111
LK-12-130	623189	5823783	688	59.13	-45	156
LK-12-131-B	623208	5823774	688	98.75	-48	58.5
LK-12-131	623208	5823774	688	98.75	-48	214.5
LK-12-132	623173	5823743	682	73.23	-46	115.5
LK-12-133	623207	5823713	679	89.82	-65	100.5
LK-12-134	623207	5823715	679	65.35	-46	117.8
LK-12-135	623269	5823623	675	87.13	-53	124.5
LK-12-136	623291	5823626	678	85.2	-45	100.5
LK-12-137	623330	5823654	680	80.13	-45	100.5
LK-12-138	623344	5823680	680	77.22	-45	60
LK-12-139	623359	5823708	681	82.52	-45	100.5
LK-12-140	623385	5823738	680	79.32	-54	81
LK-12-141	623338	5823782	683	76.12	-45	76.5
LK-12-142	623317	5823829	684	79.7	-45	75
LK-12-143	623327	5823852	684	79.08	-47	120
LK-12-144	623315	5823903	691	81.3	-45	96
LK-12-145	623350	5823897	687	103.62	-49	90
LK-12-146	623353	5823905	687	77.02	-45	81
LK-12-147	623326	5823931	685	84.68	-45	60
LK-12-148	623267	5823587	676	82.93	-45	109.5
LK-12-149	623156	5823552	684	84.08	-55	108
LK-12-150	623362	5823759	680	77.73	-45	88.5
LK-12-151	623398	5823769	679	75.58	-45	66
LK-12-152	623420	5823791	677	76.03	-45	45
LK-12-153	623377	5823783	679	74.15	-45	78

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-12-154	623396	5823840	681	77.18	-45	58.5
LK-12-155	623402	5823855	678	57.47	-46	55.5
LK-12-156-B	623358	5823839	679	76.57	-45	15
LK-12-156	623358	5823839	679	76.57	-45	90
LK-12-157	623357	5823858	679	77.33	-45	81
LK-12-158	623378	5823916	682	75.02	-45	40.5
LK-12-159	623361	5823920	684	36.17	-45	43.5
LK-12-160	623284	5823797	688	258.87	-50	109.5
LK-12-161	623238	5823677	683	98.07	-64	130.5
LK-12-162	623230	5823581	678	75.78	-45	91.5
LK-12-163	623231	5823608	676	81.17	-50	156
LK-12-164	623203	5823603	676	58.52	-45	181.5
LK-12-165	623182	5823572	684	76.6	-45	130.5
LK-12-166	623156	5823461	677	70.07	-51	170
LK-12-167	623262	5823490	672	82.25	-45	101
LK-12-168	623230	5823482	675	84.88	-50	125
LK-12-169	623318	5823401	671	82.43	-45	89
LK-12-170	623202	5823371	677	80.27	-45	132
LK-12-171	623212	5823333	683	104.73	-45	122
LK-12-172	623332	5823298	670	82.23	-45	119
LK-12-173	623328	5823194	670	76.43	-55	98
LK-12-174	623379	5823201	666	80.95	-50	125
LK-12-175	623415	5823211	666	79.58	-45	86
LK-12-176	623284	5823284	671	80.4	-45	110
LK-12-177	623260	5823384	675	80.8	-45	107
LK-12-178	622347	5825650	696	259.3	-50	290
					Total	**7,312**

Figure 10.3 – 2012 Infill and Deposit Margin Drill Holes Location Map



Source: IOS, 2022

The above drilling is detailed in the next two (2) sub-sections between infill and deposit margin drilling and exploration drilling.

10.4.1 2012 Infill and Deposit Margin Drilling Campaign

The 2012 Summer definition drilling program at Lac Knife was comprised of 56 large diameter (PQ-sized, 4-inch) core holes for a total of 5,638 m. The drilling program was designed to map the limits of the Lac Knife graphite deposit and provide sufficient additional data on mineralization to be increase the categorization quality of a new resource estimate. The drilling was also designed to provide enough mineralized material for Phase II metallurgical testing and for subsequent pilot plant trials.

The drilling program was planned by Mr. Tony Brisson, geologist and Vice-President Exploration for Focus and managed by IOS of Chicoutimi, Québec. The definition drilling program started on July 1st and ended on September 17, 2012. Drilling was performed with one skid-mounted HTM 2500 rig owned by G4 Drilling of Val-d'Or, Québec under the supervision of Mr. Réjean Godin, project geologist for IOS. The rig was operated on two 12-hour shifts, with a foreman seven days a week. Most of the holes were oriented to an azimuth of N080º with a dip of -45º with lengths ranging from 40 to 170 m. All the casings were left in place and are identified with a metallic plug equipped with a 1 m stem of rebar to signal their presence. Hole deviation was measured with the use of a Reflex Gyro surveying instrument that is not affected by the magnetism of the rocks. During the 2012 and 2013 drill campaign IOS built and maintained a temporary field camp located on the western shore of Lac Knife allowing the core to be logged in the field. Core logging was completed by an IOS geologist at the field camp site with the GeoticLog™ software. The core was partially sawed at the field camp and completed at IOS's laboratory in Laterrière, Québec.

The 56 PQ-sized holes (85 mm diameter) were spread over the West, Central and East Zones of the deposit (Table 10.5). Collars were surveyed by Roussy & Michaud of Sept-îles in the UTM NAD83 coordinates system. The 56 drill holes were labelled LK-12-113 to LK-12-165, sequential to the 2010 drill holes.

Core was collected at the drill daily and brought to the camp where it was measured and marked for logging. Geotechnical data was collected, including fracture frequency counts and types, and rock hardness (qualitative scale) prior to logging.

The core was logged for lithology, structure, alteration, and mineralisation using the lithofacies names implemented in 2010. Pictures of the core, both with full-box and detailed views were taken with a digital camera. All data was entered using specialized drilling data capture and modeling software purchased from Geotic of Val-d'Or, Québec. Core boxes were labelled with aluminum tags showing the drill hole number, box number, and from-to metres.

Sample intervals were between 0.5 to 1.5 m and respected the different lithologies wherever possible. The shoulder at the margin of mineralisation was typically sampled over 3 m intervals before and after the zone. Low grade intervals within the mineralised interval were collected separately if the length was > 1 m.

Two (2) slabs of about 1/4 of the 4-inch diameter PQ core were sawed parallel on each side of the central axis of the core. One of the slabs was earmarked for geochemical analysis while the other slab was kept as a witness sample. Center parts of the core were used as graphite-bearing material for the Phase II metallurgical testing and for the subsequent pilot plant testing program.

A three-part unique and sequential numbering of sample tags was used with one part stapled in the core box at the start of the sample interval, one in the sample bag, and the last tag was retained in the sample book.

For the first portion of the 2012 drill program, the core was sawed in the field while for the second part of the program and for the 2013 campaign, drill core was expedited as whole drill core. The core boxes were transported by truck from the field to Fermont and then forwarded to IOS's sample preparation facility located at Laterrière, Québec by road using a bonded commercial carrier.

A total of 2,131 sub-sample slabs of the PQ drill core were collected from all 56 holes and prepared by IOS at their laboratory (crushing and grinding). Once prepared, the samples were sent to COREM which is an ISO/IEC 17025:2005 certified facility in Québec City, for graphitic carbon (Cg) analysis as discussed in Section 11 of this Report.

In addition to graphitic carbon, under the QA/QC program, approximately 10% of the samples for a total of 199 core samples were analysed for total, organic and inorganic carbon. The same samples were also sent to ACTLABS Laboratories of Ancaster, Ontario (ACTLABS) (ISO/IEC 17025:2005 with CAN-P-1579) for graphitic carbon, and total sulphur assays, and for a 35 multi-element analysis. IOS introduced 181 standards, 173 duplicates and 159 blank samples into the batches of core samples as part of the QA/QC program, for a total of 24% of the analysis.

Most of the drill holes intercepted significant graphite intersections[2] along the strike length of the West, Central, and East Zones of the deposit as evidenced by the holes:

- Hole LK-12-128 drilled on section 500 S: 42.8 m grading 20.43% graphitic carbon (Cg) (from 60.7 to 103.5 m), including 11.8 m grading 36.08% Cg (from 79.7 to 91.5 m).
- Hole LK-12-135 drilled on section 675 S: 60.5 m grading 17.88% Cg (from 61.0 to 121.5 m), including 13 m grading 32.33% Cg (from 70 to 83 m) and 11.8 m grading 26.39% Cg (from 106.7 to 118.5 m).
- Hole LK-12-147 drilled on section 375 S: 42.8 m grading 17.59% Cg (from 12.4 to 55.2 m), including 5.4 m grading 39.56% Cg (from 15.4 to 20.8 m).

All 40 significant intercepts are summarised in Table 10.5.

[2] Significant intercepts are defined as graphitic carbon (Cg) >5% over a minimum of 6 m; maximum internal dilution of 6 m; maximum external dilution of 0 m.

Table 10.5 – Summary of Significant Graphitic Carbon Drill Core Intersections (Cg >5% and 6 m Minimum Intersection) from 2012 Infill and Deposit Margin Drilling Program at Lac Knife

Hole	Azimuth	Dip	Total Length	From	To	Core Length*	Cg**	S
			(m)	(m)	(m)	(m)	(%)	(%)
LK-12-116	N078	-45	56	35.7	48.8	13.1	10.11	3.62
LK-12-117	N075	-50	135	64.5	79.5	15.0	7.08	3.18
LK-12-119	N081	-47	147	49.5	72.8	23.3	13.10	7.42
				112.8	129.9	17.1	13.43	7.03
LK-12-120	N080	-47	138	54.7	68.2	13.5	12.60	5.30
				114.5	126.7	12.2	10.45	5.47
LK-12-121	N081	-47	146	71.6	88.5	17.0	12.52	4.32
LK-12-123B	N073	-47	171	23.3	41.8	18.5	15.84	5.18
LK-12-124	N089	-47	141	33.4	48.8	15.4	21.69	5.90
				100.5	117.7	17.2	13.12	6.12
LK-12-125	N080	-47	159	6.9	18.0	11.2	17.93	5.22
				24.2	31.4	7.2	15.62	4.22
				84.0	102.5	18.5	12.63	7.81
LK-12-126	N078	-47	146	66.0	85.5	19.5	9.09	7.52
LK-12-127	N062	-69	131	16.6	33.1	16.5	19.08	4.98
				90.2	112.3	22.1	12.19	6.29
LK-12-128	N075	-52	125	60.7	103.5	42.8	20.43	5.25
LK-12-129	N051	-47	111	75.0	93.0	18.0	20.97	6.72
LK-12-130	N059	-45	156	31.5	43.4	11.9	20.48	6.17
				61.5	72.0	10.5	21.19	6.92
				117.2	153.2	36.1	12.98	5.39
LK-12-131	N099	-48	215	22.6	92.3	69.7	15.81	5.44
				112.0	130.8	18.8	12.04	4.45
				147.6	214.5	66.9	17.89	9.46
LK-12-131-B	N099	-48	59	17.8	58.5	40.7	12.37	4.03
LK-12-132	N073	-46	116	60.7	74.1	13.4	16.25	5.12
				80.2	108.3	28.1	20.20	7.12
LK-12-133	N090	-65	101	32.5	58.3	25.8	13.73	4.56
				68.2	92.0	23.8	18.19	5.96
LK-12-134	N065	-46	118	36.3	87.0	50.7	18.53	5.13

Hole	Azimuth	Dip	Total Length	From	To	Core Length*	Cg**	S
			(m)	(m)	(m)	(m)	(%)	(%)
LK-12-135	N087	-53	125	61.0	121.5	60.5	17.88	5.40
LK-12-141	N076	-45	77	38.7	73.8	35.1	13.98	3.61
LK-12-142	N080	-45	75	0.0	13.5	13.5	10.62	2.88
				26.0	41.2	15.2	20.28	4.13
LK-12-143	N079	-47	120	11.0	25.0	14.0	17.09	3.80
				84.8	92.1	7.3	17.05	6.50
LK-12-144	N080	-45	96	27.6	92.2	64.6	17.70	7.96
LK-12-145	N104	-49	90	59.4	74.0	14.6	18.16	6.50
LK-12-146	N077	-45	81	44.3	61.9	17.6	16.84	8.20
LK-12-147	N085	-45	60	12.4	55.2	42.8	17.59	8.50
LK-12-149	N084	-55	108	67.1	78.9	11.8	14.11	3.86
LK-12-150	N078	-45	89	46.5	59.2	12.7	18.94	3.43
LK-12-153	N074	-45	78	19.0	40.2	21.2	13.17	3.07
				52.1	72.0	19.9	17.05	8.05
LK-12-154	N077	-45	59	21.1	28.6	7.5	17.26	7.88
LK-12-156	N077	-45	90	9.8	18.2	8.4	19.85	3.96
				56.0	70.2	14.2	19.51	7.80
LK-12-157	N077	-45	81	26.3	36.5	10.2	11.22	3.16
				54.8	67.4	12.6	19.73	7.14
LK-12-158	N075	-45	41	17.5	34.0	16.5	17.79	7.38
LK-12-159	N036	-45	44	23.6	39.9	16.3	16.38	8.40
LK-12-160	N259	-50	110	10.5	109.5	99.0	26.21	6.81
LK-12-161	N098	-64	131	37.6	60.9	23.3	15.86	5.88
				80.9	88.9	8.0	12.69	7.47
LK-12-162	N076	-45	92	7.5	49.0	41.5	14.23	5.20
				63.7	72.0	8.3	8.07	3.91
LK-12-163	N081	-50	156	7.6	24.8	17.2	18.49	6.45
				49.5	63.8	14.3	13.48	4.81
				82.8	115.5	32.7	11.09	4.86
				123.3	140.6	17.3	11.89	9.05
LK-12-164	N059	-45	182	2.0	21.6	19.6	9.50	2.98
				74.5	88.5	14.0	16.06	6.79

Hole	Azimuth	Dip	Total Length	From	To	Core Length*	Cg**	S
			(m)	(m)	(m)	(m)	(%)	(%)
				114.9	124.5	9.6	15.96	8.54
				164.4	181.5	17.1	10.85	4.08
LK-12-165	N077	-45	131	29.5	55.5	26.0	9.46	3.43
				108.0	122.6	14.6	5.74	3.06

* Significant Cg intersections are expressed as core length because the host rocks are highly metamorphosed and locally migmatized and folded. However, the mineralisation envelope interpreted from the historical data cross-cuts the drill holes at a high angle.

** All core sample carbon analyses performed by COREM and delivered as graphitic carbon (Cg), internal analytical code LSA-M-B10, LECO high frequency combustion method with infrared measurement.

10.4.2 2012 Exploration Drilling Campaign

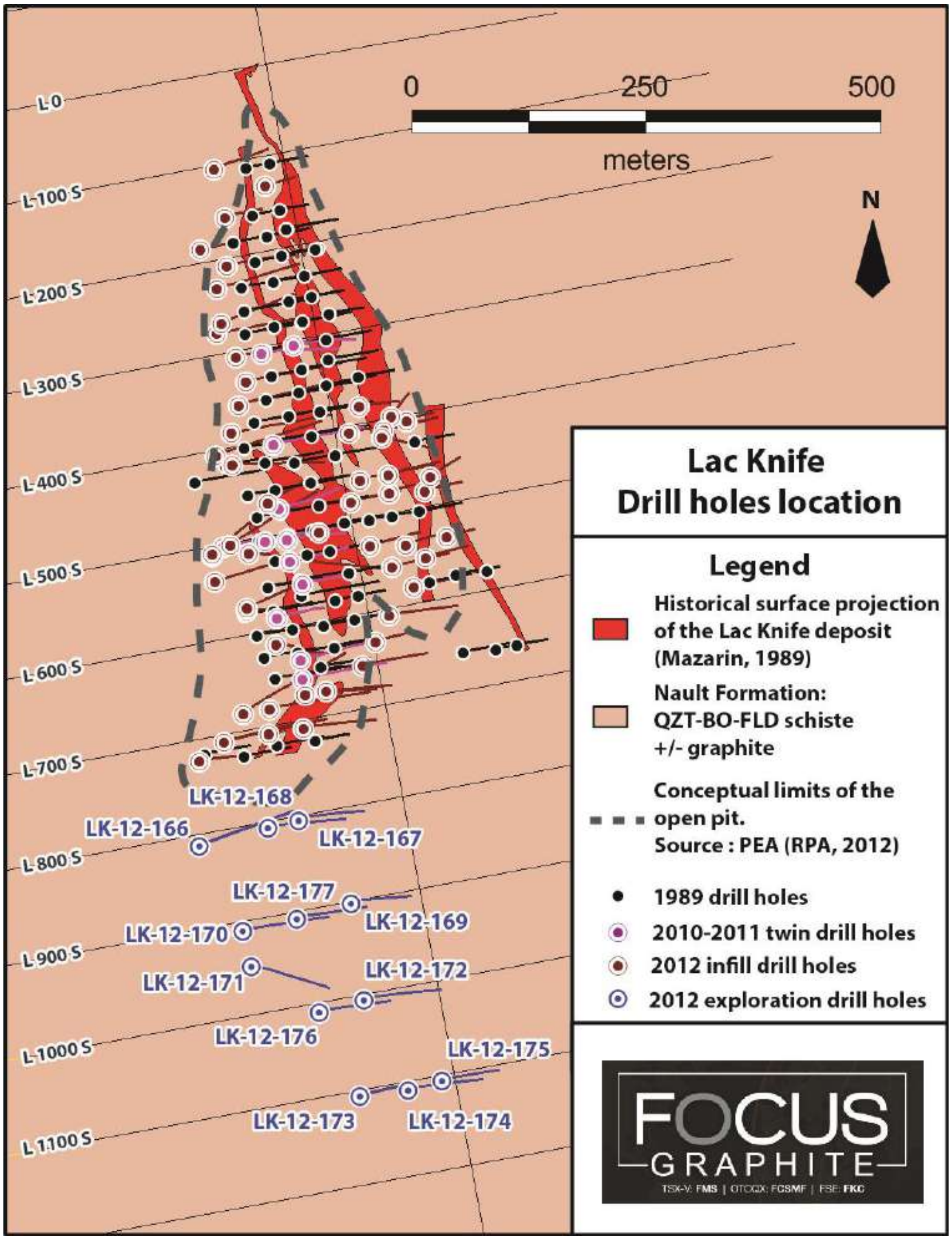
The Fall 2012 exploration drilling program at Lac Knife comprised 13 exploration NQ-sized core holes (total: 1,674 m) designed to test the southern extension of the Lac Knife graphite deposit over a total strike length of 375 m along with an iron formation in the northern part of the project (one hole that failed to intersect the iron formation). The diamond drill program was planned by Mr. Tony Brisson, geologist and Focus Vice-President Exploration. The drill holes were labelled LK-12-166 to LK-12-178, sequential with 2012 infill drill holes as presented in Table 10.4.

The 12 holes located in the southwest extension were spread over four (4) 100 m spaced drill fences (800S, 900S, 1000S and 1100S). Each fence is comprised of three (3) holes spaced 50 m apart except for hole LK-12-171 which is located 50 m north of fence 1000S due to land terrain conditions (Figure 10.4).

The exploration drilling program at Lac Knife started in mid-September 2012 and ended on September 26, 2012. The drilling was performed by G4 Drilling of Val-d'Or, Québec under the supervision of Mr. Réjean Godin, project geologist of IOS of Chicoutimi, Québec.

All the parameters of the drilling campaign are the same as described in the previous sections regarding definition drilling campaigns. A total of 558 half-split NQ drill core samples were collected from 12 holes (no samples for the hole that targeted the iron formation) and shipped to IOS for sample preparation (crushing and grinding). The same analytic procedures were applied for the infill program samples. Under the QA/QC program, a total of 51 core samples analyzed at COREM were duplicated by ACTLABS. IOS introduced 42 standards, 51 duplicates, and 36 blank samples into the batches of core samples as part of the QA/QC program, representing 23% of the samples.

Figure 10.4 – 2012 Southwest Extension Exploration Drill Holes Location Map



Hole LK-12-170 drilled 175 m south of the deposit on Line 900 S returned the best graphitic carbon (Cg) intersection[3]:

[3] Intersections are expressed as core length because the host rocks are highly metamorphosed and locally migmatized and folded. However, the drill holes crosscut the mineralisation envelope at a high angle. The interpretation is based on historical data including Focus' drill holes.

- Hole LK-12-170: 66.8 m grading 14.68% graphitic carbon[4] (Cg) (from 54.9 to 121.7 m), including:
  - 8.0 m grading 21.73% Cg (from 54.9 to 62.9 m);
  - 21.7 m grading 17.99% Cg (from 70.0 to 91.7 m); and
  - 21.3 m grading 18.22% Cg (from 100.4 to 121.7 m).

Significant graphite intercepts[5] are still encountered up to 375 m south of the deposit as illustrated by Hole LK-12-174 that was drilled on Line 1100 S and intersected 20.9 m grading 19.31% Cg (from 20.0 to 40.9 m) indicating that the deposit remains open to the south.

10.5 2013 Drilling Campaign

A total of 53 drill holes were completed in 2013 for a total length of 5,901.75 m. Table 10.6 details the drilling parameters pertaining to the 2013 drilling campaign designed by Focus and IOS.

Table 10.6 – 2013 Drilling Campaign

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-13-179	623296.2	5823800.933	688.995	80	-45	150
LK-13-180	623282.3	5823801.409	687.778	260	-50	112.5
LK-13-181	623284.8	5823787.163	689.159	260	-50	108
LK-13-182	623294	5823778	689.000	80	-51	111
LK-13-183	623292.7	5823768.46	689.181	260	-52	110
LK-13-184	623293	5823757.99	685.671	260	-50	100.5
LK-13-185	623300.4	5823726.175	680.936	80	-45	150
LK-13-186	623187.3	5823673.414	683.169	80	-45	114
LK-13-187	623251.1	5823784.079	683.699	80	-47	90
LK-13-188	623268.8	5823807.45	683.593	260	-50	100.5
LK-13-189	623261.8	5823818.351	684.994	260	-50	99
LK-13-190	623239.7	5823825.248	687.302	80	-46	90
LK-13-191	623253.3	5823921.168	689.336	80	-45	111
LK-13-192	623054.3	5823649.585	682.308	80	-45	156
LK-13-193	623212.9	5823972.303	688.249	90	-45	141
LK-13-194	623318.8	5824030.191	694.299	80	-45	43.5
LK-13-195	623323.4	5823982.209	692.244	80	-45	55.5
LK-13-196	623167.8	5824150.597	696.167	80	-45	111

4 All core sample carbon analyses were performed by COREM and delivered as graphitic carbon (Cg) results from the internal analytical method code LSA-M-B10, a LECO high frequency combustion analytical method using an infrared measurement system.

5 Significant intercepts are defined as Cg >5% over a minimum of 6 m; maximum internal dilution of 6 m; maximum external dilution of 0 m.

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-13-197	623195	5824159.97	699.36	80	-45	81
LK-13-198	623253.4	5824119.102	689.922	80	-48	51
LK-13-199	623266.7	5824141.289	690.352	80	-48	30
LK-13-200	623286.8	5824078.492	689.352	90	-45	51
LK-13-201	623255.3	5824043.817	688.985	80	-45	70.5
LK-13-202	623227	5824048.787	696.400	80	-45	91.15
LK-13-203	623275.6	5824124.91	686.412	80	-45	30
LK-13-204	622950.8	5823634.116	690.122	80	-45	162
LK-13-205	622840.1	5823614.026	678.430	80	-45	120
LK-13-206	623006.6	5823847.273	687.998	80	-45	156
LK-13-207	623320.5	5824005.863	692.927	80	-45	48
LK-13-208	623294.2	5824052.232	692.273	80	-45	40.5
LK-13-209	623303.7	5823872.979	685.722	80	-55	130.5
LK-13-210	623284.5	5823826.394	684.224	80	-45	99
LK-13-211	623294	5823954.771	687.243	80	-45	70.5
LK-13-212	622910.9	5823831.363	686.381	80	-45	156
LK-13-213	622990.5	5823943.599	690.687	80	-45	120
LK-13-214	623316.8	5823894.902	690.820	90	-50	120
LK-13-215	622808.4	5824015.693	688.721	80	-45	168
LK-13-216	622753.9	5824205.26	693.660	80	-45	156
LK-13-217	622863.7	5824227.018	694.655	80	-45	156
LK-13-218	622911.6	5824033.632	692.664	80	-45	156
LK-13-219	623521.4	5823431.136	667.986	80	-45	120
LK-13-220	623549.2	5823339.07	665.177	80	-45	120
LK-13-221	623489.5	5823520.964	671.586	80	-45	174
LK-13-222	622953.5	5825349.248	738.896	80	-46	144
LK-13-223	622796	5826139.63	692.278	80	-45	117
LK-13-224	622823.6	5824519.85	710.373	80	-46	132
LK-13-225	622618.8	5824484.748	702.144	80	-46	125
LK-13-226	623076.5	5824671.837	708.120	80	-46	123.1
LK-13-227	623225.1	5824394.732	712.718	80	-46	126
LK-13-228	622784.3	5824819.373	704.824	80	-46	126
LK-13-229	622995.6	5825167.669	734.081	80	-46	126
LK-13-230	622915.7	5825662.705	727.66	80	-46	126
LK-13-231	622866.4	5825941.14	712.139	80	-46	126
					Total	**5,901.75**

The above drilling is detailed in the next two (2) sub-sections, between Infill Drilling Campaign 2013 and Exploration Drilling Campaign 2013.

10.5.1 2013 Infill Drilling Campaign

The 2013 summer infill drilling program at Lac Knife comprised 24 large diameter (PQ-sized, 4-inch) core holes for a total of 2,081 m. Sixteen (16) holes were completed in different parts of the deposit, mostly central and northeast parts, to complete the 25 m drill spacing coverage, and another eight (8) holes were for twin hole checks of historical drill holes to increase confidence in the planned update of the Mineral Resource Estimate (Figure 10.3). The drilling program was designed with the objective of upgrading the current Inferred and Indicated mineral resource to the Measured and Indicated Mineral Resource categories. An additional 630 m of down-dip drilling for metallurgical testing purposes and graphene technology research (a total of 6 PQ-sized holes) were also completed. A grand total of 30 holes were drilled (total: 2,711 m).

The drilling program was planned by Mr. Benoit Lafrance, geologist and Vice-President Exploration of Focus. The drilling campaign was managed by IOS of Chicoutimi, Québec. The infill drilling program started on July 6 and ended on August 10, 2013. The drilling was performed with one skid-mounted HTM 2500 rig type operated by Forage Rouillier of Amos, Québec under the supervision of Mr. Mikaël Block, IOS project geologist, who was assisted by Mr. Jordi Turcotte, geologist, and Mr. Levin Castillo, geologist in training for IOS. The rig was operated on two (2) 12-hour shifts, seven days a week. Most of the holes had an azimuth of N080º and a dip of -45º in accordance with the previous drilling with the exception of the six (6) down-dip holes that have an azimuth of N260º and a dip of -50º. All of the casings have been left in place and are identified with a metallic plug equipped with a 1 m stem to signal their presence. Hole deviation was measured after the drillhole was completed with the use of a Reflex Gyro surveying instrument that is not affected by the magnetism of the rock lithologies. Collars were surveyed after the drilling by Mr. Daniel Michaud, surveyor of Sept-Îles in UTM NAD83 coordinates system. The drill holes were labelled LK-13-179 to LK-13-214, with the exception of LK-13-192, LK-13-204, LK-13-205, LK-13-206, LK-13-212, and LK-13-213 attributed to the exploration program.

All of the drill core was logged at the Lac Knife base camp using GeoticLog™ software and then shipped to IOS's laboratory facility in Laterrière, Québec for sawing and sample preparation. The sample protocol is the same as the one used in the 2012 drill campaign. A total of 1,309 sub-sample slabs of the PQ drill core (mostly 1.5 m in length with variances from 0.5 to 1.8 m) were collected from 23 holes. Slab samples were dried before processing for density measurement, crushing and grinding at IOS's sample preparation laboratory.

Once prepared, the samples were sent to COREM in Québec City for graphitic carbon analysis. Under the QA/QC program, about 10% of the samples were also analysed for total, organic, inorganic carbon and total sulphur (a total of 130 core samples). Duplicates of the same 130 samples were also sent to ACTLABS for graphitic carbon, total sulphur, and for 35 multi-element analysis using ICP methods. IOS introduced 115 standards, 59 duplicates (sawing, crushing, or grinding duplicates) and 115 blank samples into the batches of core sample as part of the QA/QC program.

Hole LK-13-187, drilled on Line 500S, targeted the western zone of the south part of the deposit and returned one of the best graphitic carbon (Cg) intersections of the program with 67.8 m grading 21.10% Cg (from 17.4 to 85.2 m). All the drill holes (except LK-13-203) intercepted significant graphite intersections* along the strike length of the deposit. The 36 significant intercepts are summarised in Table 10.7.

Table 10.7 – Summary of Significant Graphitic Carbon Drill Core Intersections* (Cg >5% and Minimum Intersection of 6 m) from the 2013 Definition Drilling Program

Hole	Azimuth	Dip	Total Length	From	To	Core Length **	Cg***	S
			(m)	(m)	(m)	(m)	(%)	(%)
LK-13-179	N074	-45	150	16.6	47.0	30.4	14.96	4.99
				58.2	75.4	17.2	20.02	4.51
				119.6	145.3	25.8	19.18	8.04
LK-13-182	N081	-51	111	15.1	52.0	36.9	16.10	5.10
				59.5	82.6	23.1	21.25	4.01
LK-13-185	N072	-45	150	9.4	58.0	48.6	19.76	5.00
				89.6	114.0	24.4	17.36	3.90
LK-13-186	N080	-45	114	12.9	30.8	17.9	7.60	3.32
				61.2	111.5	50.4	12.19	4.20
LK-13-187	N075	-47	90	17.4	85.2	67.8	21.10	5.99
LK-13-190	N085	-46	90	11.5	75.9	64.4	13.36	5.33
LK-13-191	N078	-45	111	13.4	36.5	23.1	19.37	6.20
				55.8	96.5	40.7	16.73	8.33
LK-13-193	N081	-45	141	42.1	53.0	10.9	10.04	7.03
				97.0	129.3	32.3	14.88	8.31
LK-13-194	N086	-45	43.5	23.8	38.2	14.4	17.18	8.29
LK-13-195	N084	-45	55.5	18.0	30.8	12.8	15.62	5.82
LK-13-196	N071	-45	111	63.8	85.8	22.0	7.03	3.16
LK-13-197	N076	-45	81	5.9	12.1	6.2	20.47	3.64
				22.7	29.2	6.5	18.88	9.70
				47.7	57.0	9.3	10.32	5.64

Hole	Azimuth	Dip	Total Length (m)	From (m)	To (m)	Core Length ** (m)	Cg*** (%)	S (%)
LK-13-198	N080	-48	51	5.5	27.6	22.1	16.85	8.38
LK-13-199	N080	-48	30	6.3	17.8	11.6	7.08	3.69
LK-13-200	N084	-45	51	13.0	21.1	8.2	17.41	7.88
LK-13-201	N080	-45	70.5	22.0	56.7	34.7	19.34	7.33
LK-13-202	N080	-45	91	53.5	87.4	34.0	17.02	8.82
LK-13-207	N075	-45	48	19.8	41.8	22.0	21.31	9.52
LK-13-208	N078	-45	40.5	13.8	36.1	22.3	21.87	8.84
LK-13-209	N073	-55	130.5	21.5	28.7	7.2	27.03	4.31
				38.2	63.5	25.3	30.94	5.65
LK-13-210	N076	-45	99	9.0	44.5	35.5	13.78	5.41
				70.7	95.8	25.1	22.77	7.28
LK-13-211	N074	-45	70.5	10.3	31.8	21.5	16.63	3.34
				38.4	56.9	18.5	19.66	8.51
LK-13-214	N088	-50	120	34.7	55.7	21.0	24.53	7.10
				68.3	103.4	35.1	18.11	9.25

Note:

* Significant intercepts are defined as graphitic carbon >5% over a minimum of 6 m; maximum internal dilution of 6 m; maximum external dilution of 0 m.

** Significant Cg intersections are expressed as core length because the host rocks are highly metamorphosed and locally migmatized and folded. However, the drill holes crosscut at a high angle to the deposit's mineralized envelope that was interpreted from the historical drillhole data and Focus' more recent drill hole data.

*** All drill core sample carbon analyses performed by COREM and reported as graphitic carbon (Cg), using internal analytical method code LSA-M-B10, a LECO high frequency combustion method using an infrared measurement system.

10.5.2 2013 Exploration Drilling Campaign

The 2013 Summer initial exploration-drilling program was conducted outside of the deposit limits at the same time and immediately after the definition-drilling program on the Lac Knife project (see previous section). A total of fifteen (15) NQ-sized core holes (total: 2,181 m) were completed from August 10 to 25, 2013. The drill holes were labelled LK-13-192, LK-13-204, LK-13-205, LK-13-206, LK-13-212, LK-13-213 and LK-13-215 to LK-13-223. A second drilling program was conducted on October 8 to 25, 2013 that included eight (8) NQ-sized holes for a total of 1,010 m. The drill holes were labelled LK-13-224 to LK-13-231.

Both programs were designed to test geophysical anomalies identified during the fall of 2012 with ground magnetic and horizontal loop electromagnetic (HLEM) surveys. The drill program was planned by Mr. Benoit Lafrance, geologist and Focus Vice-President Exploration. The holes are located west and southeast of the deposit, as well as in the northern part of the claim block (Figure

10.5). The two (2) exploration drilling campaigns were also managed, as with the definition drill program, by IOS of Chicoutimi, Québec and drilled by Forage Rouillier of Amos, Québec under the supervision of IOS.

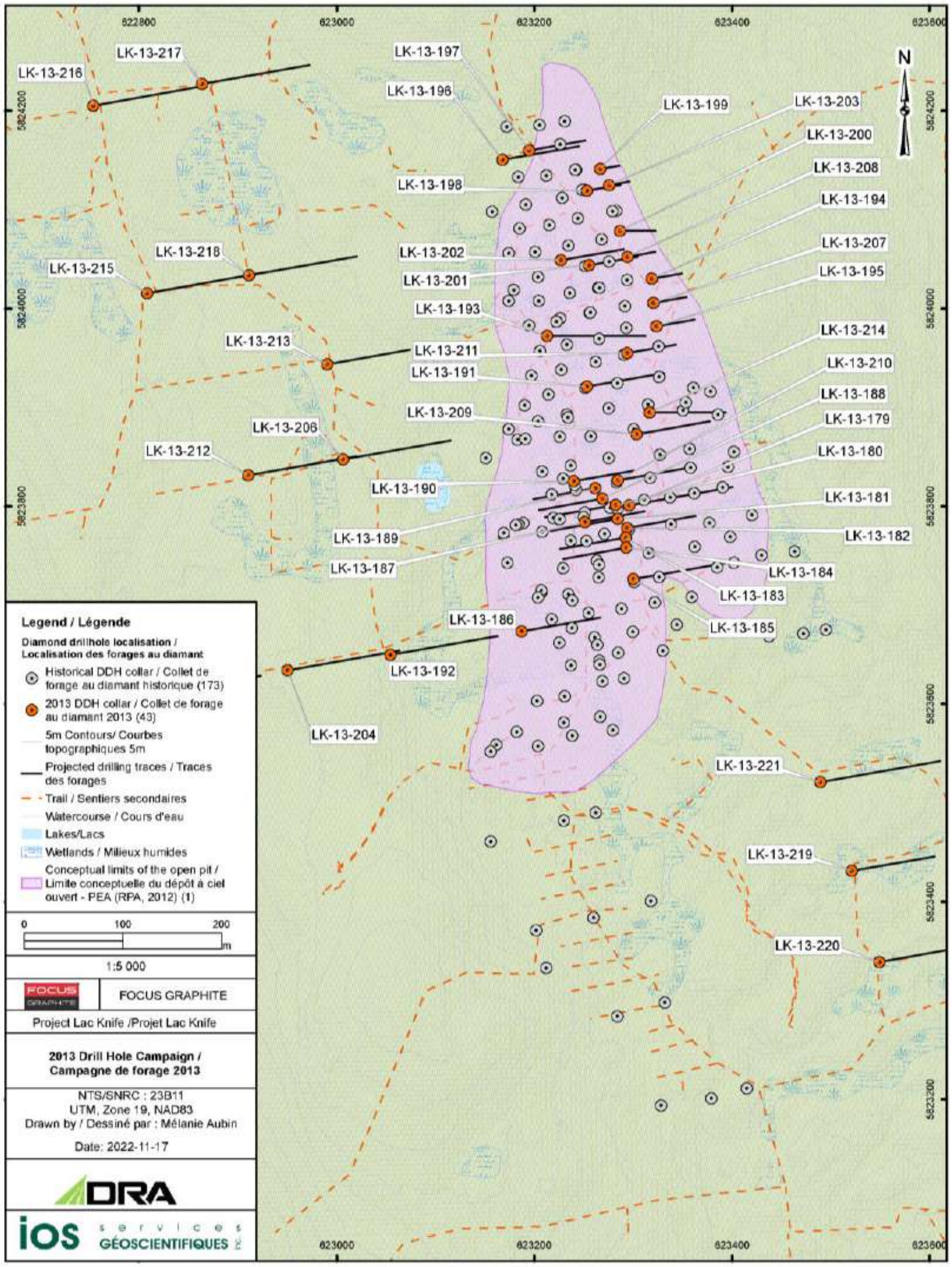
The drilling was performed with one skid mounted HTM 2500 rig type for the first program and a tractor mounted drill rig, mounted on a Morrooka, for the second program under the supervision of Mr. Mikaël Block, IOS project geologist, assisted by Mr. Jordi Turcotte, geologist and Mr. Levin Castillo, geologist in training for IOS. The rig was operated on two (2) 12-hour shifts, seven days per week. The entire drill hole program had an azimuth of N080º and a dip of -45º. All the casings have been left in place and are identified with a metal cap equipped with a 1 m stem of rebar to signal their presence. Hole deviation was measured with the use of a Reflex Gyro surveying instrument for the first summer program and with a Deviflex instrument for the fall program. Collars were surveyed after the drilling by Mr. Daniel Michaud, surveyor of Sept-Îles in the UTM NAD83 coordinates system.

The drill core was logged at the Lac Knife base camp using the GeoticLog™ software and then shipped to IOS's laboratory in Laterrière, Québec for sawing and sample preparation. A total of 474 half-sawed NQ drill core samples were collected from 23 holes. Slab samples were dried before processing for density measurement, crushing, and grinding at IOS's sample preparation laboratory.

The same assay procedures used for the infill program were used here (see previous section). Under the QA/QC program, an additional 47 samples were processed for re-analysis at ACTLABS. IOS introduced 61 standards, 22 duplicates (sawing, crushing, or grinding duplicates) and 63 blank samples into the batches of core samples as part of the QA/QC program.

Only semi-massive and disseminated graphitic intervals were intersected. The mineralised core lengths vary from 0.5 to 1.5 m with grades ranging from 1.3 to 13% graphitic carbon (Cg). The better intersections are located in the southeast extension of the deposit.

Figure 10.5 – 2013 Exploration Drill Holes Location Map



Source: IOS, 2022

10.6 2014 Drilling Program

Table 10.8 details the drilling parameters pertaining to the 2014 drilling campaign designed by Focus and IOS and is depicted in Figure 10.6.

The 2014 drilling campaign was divided into definition drilling and exploration drilling. Exploration drilling called for twenty-six (26) holes exploration holes to test extensions of the deposit (Holes LK-14-232 to LK-14-234 and LK-14-273 to LK-14-295). The definition drilling portion called for thirty-nine (39) definition drill holes to further develop the FSU resource definition area. The 2014 drilling campaign totaled 65 NQ-sized holes with a total metreage of 8,072 m.

Focus and IOS ensured continuity of procedures from past exploration programs. Sampling and assaying procedures are detailed in Sections 11 and 12 of this Report.

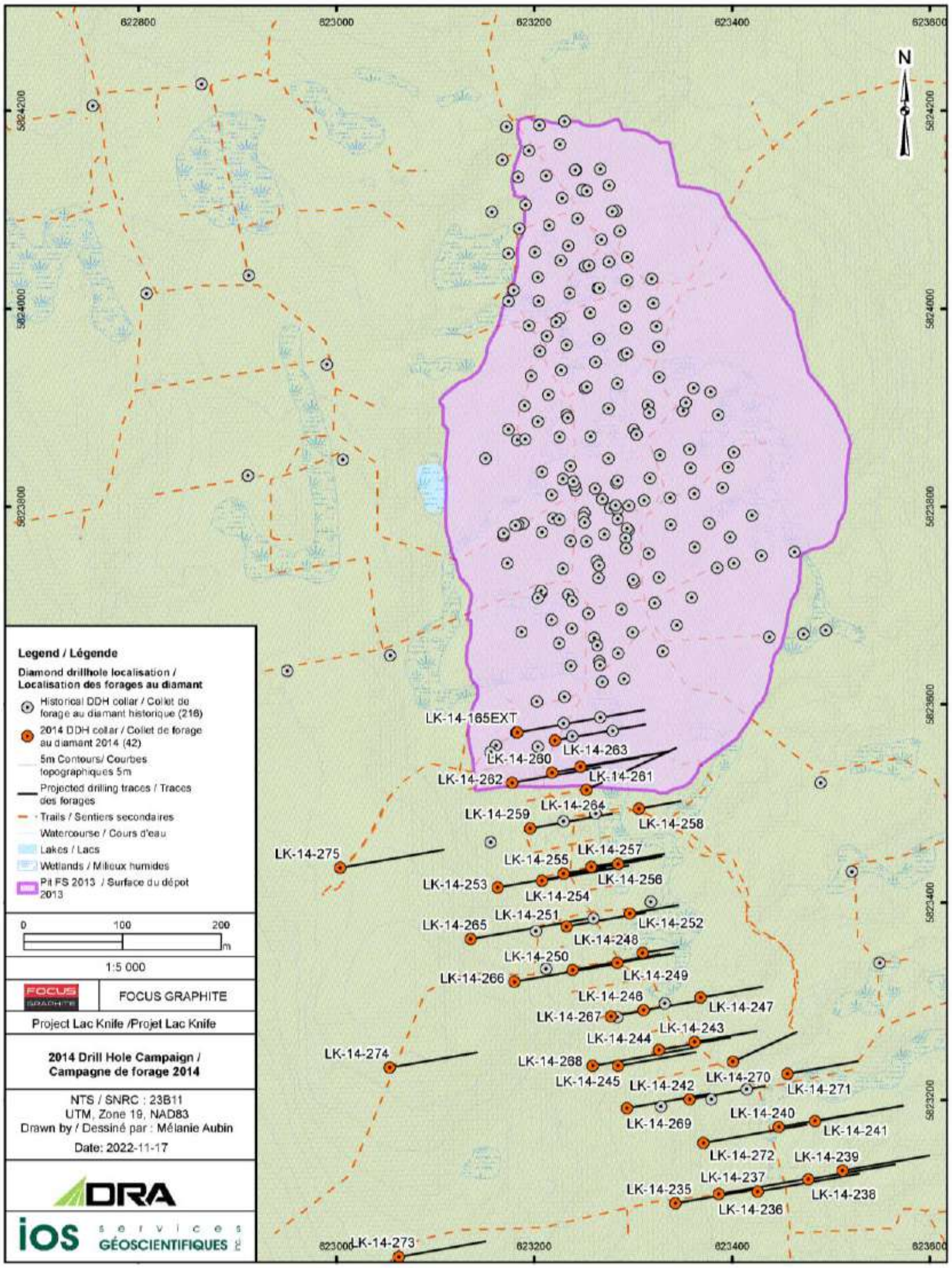
Table 10.8 – 2014 Drilling Campaign

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-14-232	623480	5822006	633	80	-45	124
LK-14-233	623319	5821969	637	80	-45	126
LK-14-234	623292	5822387	705	80	-45	125
LK-14-235	623343	5823096	669.314	80	-45	126
LK-14-236	623387	5823105	663.263	80	-45	126
LK-14-237	623426	5823108	663	80	-45	147
LK-14-238	623477	5823120	665	80	-45	126
LK-14-239	623512	5823129	664	80	-45	126
LK-14-240	623447	5823173	663	80	-45	126
LK-14-241	623484	5823179	665	80	-45	127.5
LK-14-242	623357	5823201	670	80	-45	109.6
LK-14-243	623362	5823259	672	80	-45	90
LK-14-244	623326	5823251	671	80	-45	103.5
LK-14-245	623285	5823235	674	80	-45	112.5
LK-14-246	623311	5823291	671	80	-45	81
LK-14-247	623368	5823304	669	80	-45	90
LK-14-248	623310	5823349	671	80	-45	51
LK-14-249	623284	5823339	672	80	-45	81
LK-14-250	623239	5823332	679	80	-45	126
LK-14-253	623163	5823415	681	80	-50	172.4
LK-14-251	623233	5823376	676	80	-45	113.8

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-14-252	623297	5823389	672	80	-45	70
LK-14-254	623208	5823422	677	80	-50	138
LK-14-255	623230	5823429	676	80	-45	120
LK-14-256	623258	5823436	677	80	-45	105
LK-14-257	623285	5823439	672	80	-45	63
LK-14-258	623306	5823495	673	80	-45	60
LK-14-259	623196	5823475	675	80	-50	130.5
LK-14-260	623218	5823531	675	80	-45	126
LK-14-261	623247	5823537	675	80	-45	126
LK-14-262	623178	5823521	676	80	-45	127.5
LK-14-263	623221	5823564	679	80	-45	130.65
LK-14-264	623253	5823514	672	65	-45	141
LK-14-265	623136	5823363	688	80	-45	171
LK-14-266	623180	5823320	691	80	-45	159
LK-14-267	623278	5823285	672	80	-70	120
LK-14-268	623259	5823235	676	80	-45	145.5
LK-14-165EXT	623183	5823572	685	80	-45	184.5
LK-14-269	623294	5823192	673	80	-55	148.5
LK-14-270	623401	5823239	669	65	-45	100.5
LK-14-271	623456	5823227	665	80	-45	102
LK-14-272	623371	5823157	664	80	-45	150
LK-14-273	623063	5823042	670	80	-45	126
LK-14-274	623054	5823233	689	80	-45	126
LK-14-275	623004	5823435	690	80	-45	150
LK-14-276	622184	5823793	656	80	-45	150
LK-14-277	622231	5823594	652	80	-45	150
LK-14-278	622269	5823399	639	80	-45	152
LK-14-279	622516	5825383	697	80	-45	126
LK-14-280	622442	5825368	690	80	-45	126
LK-14-281	622443	5825572	690	80	-45	126
LK-14-282	622518	5825586	703	80	-45	126
LK-14-283	622701	5825825	723	80	-45	127.55
LK-14-284	622624	5825811	691	80	-45	126

Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-14-285	622499	5825787	699	80	-45	132
LK-14-286	622424	5825773	690	80	-45	126
LK-14-287	622410	5825967	685	80	-45	123
LK-14-288	622488	5825981	697	80	-45	126
LK-14-289	622745	5826241	673	80	-45	124.5
LK-14-290	622610	5826421	677	80	-45	126
LK-14-291	622512	5826400	687	80	-45	126
LK-14-292	622858	5826060	697	80	-45	150
LK-14-293	622953	5826078	686	80	-45	143
LK-14-294	622920	5826169	686	80	-45	153
LK-14-295	623034	5826190	653	80	-45	102
					Total	**8,072**

Figure 10.6– 2014 Exploration Drill Holes Location Map



Source: IOS, 2022

10.7 2018 Drilling Program

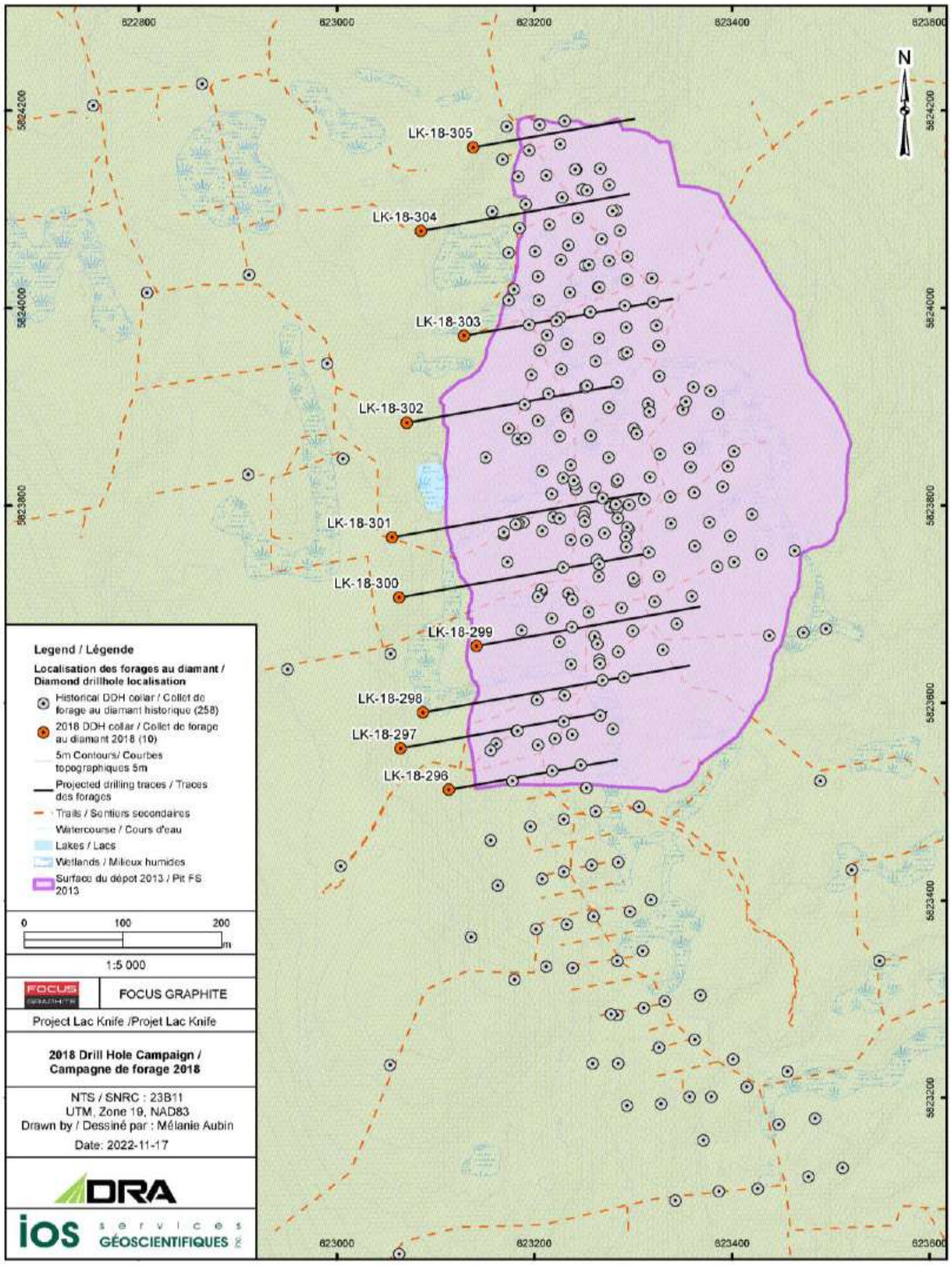
Table 10.9 details the drilling parameters pertaining to the 2018 drilling campaign designed by Focus and IOS and is illustrated in Figure 10.7. The 2018 drilling campaign was designed to test the graphite potential in the deep western side of the open pit shell footprint as defined in the 2014 FS.

Holes LK-18-296 to LK-18-305 drilled in HQ sized are detailed in Table 10.9. A total of 10 drill holes were completed for a total length of 3,132 mm.

Table 10.9 – 2018 Drilling Campaign

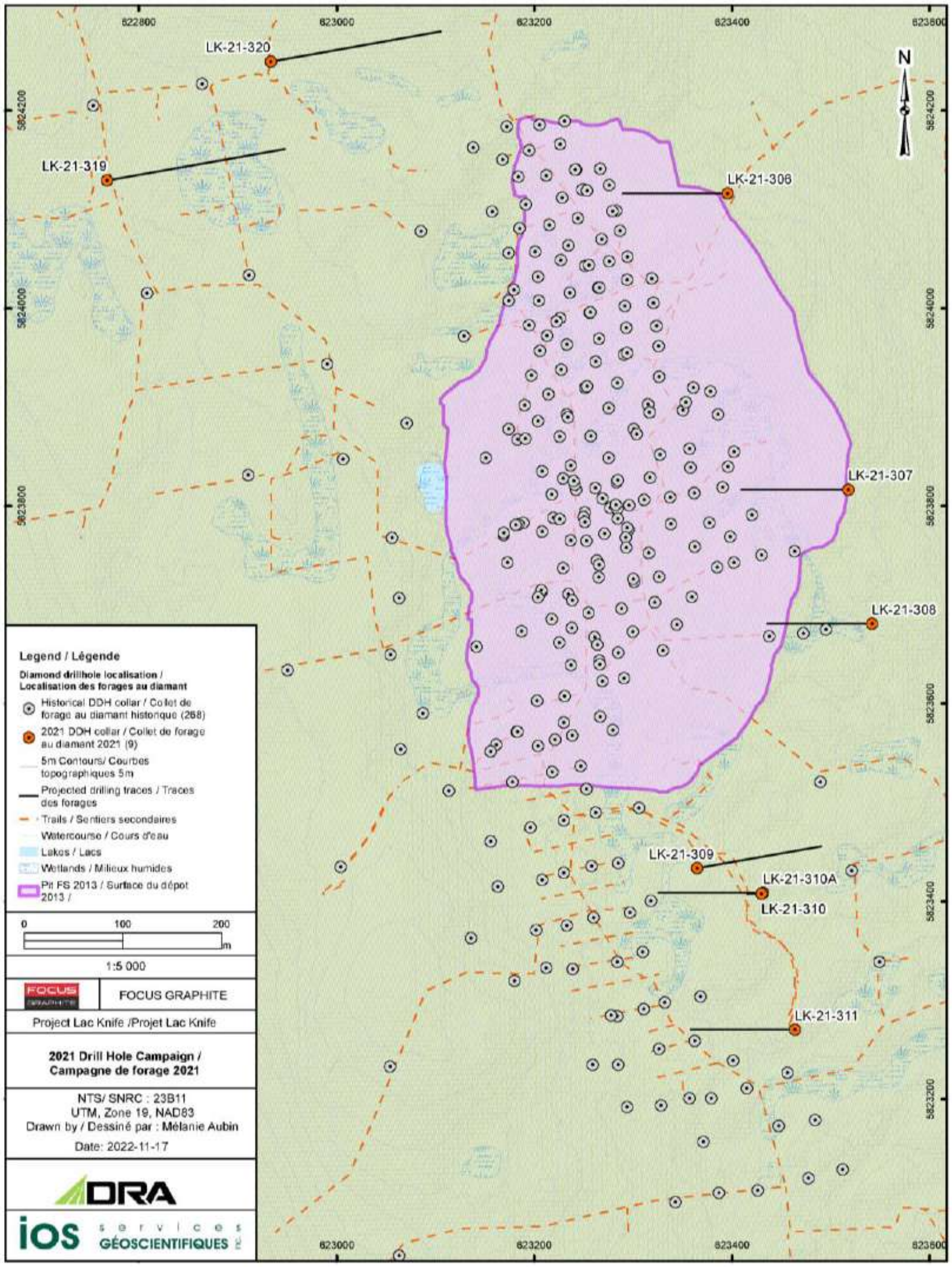
Drill Hole	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LK-18-296	623114	5823512	682	80	-45	244
LK-18-297	623064	5823554	685	80	-45	300
LK-18-298	623087	5823590	680	80	-45	387
LK-18-299	623141	5823658	684	80	-45	324
LK-18-300	623063	5823707	688	80	-45	371
LK-18-301	623056	5823768	690	80	-45	363
LK-18-302	623071	5823884	693	80	-45	303
LK-18-303	623129	5823972	690	80	-45	303
LK-18-304	623085	5824078	697	80	-45	303
LK-18-305	623138	5824163	706	80	-45	234
					Total	**3,132**

Figure 10.7 – 2018 Exploration Drill Holes Location Map



Source: IOS, 2022

Figure 10.8 – 2021 Exploration Drill Holes Location Map

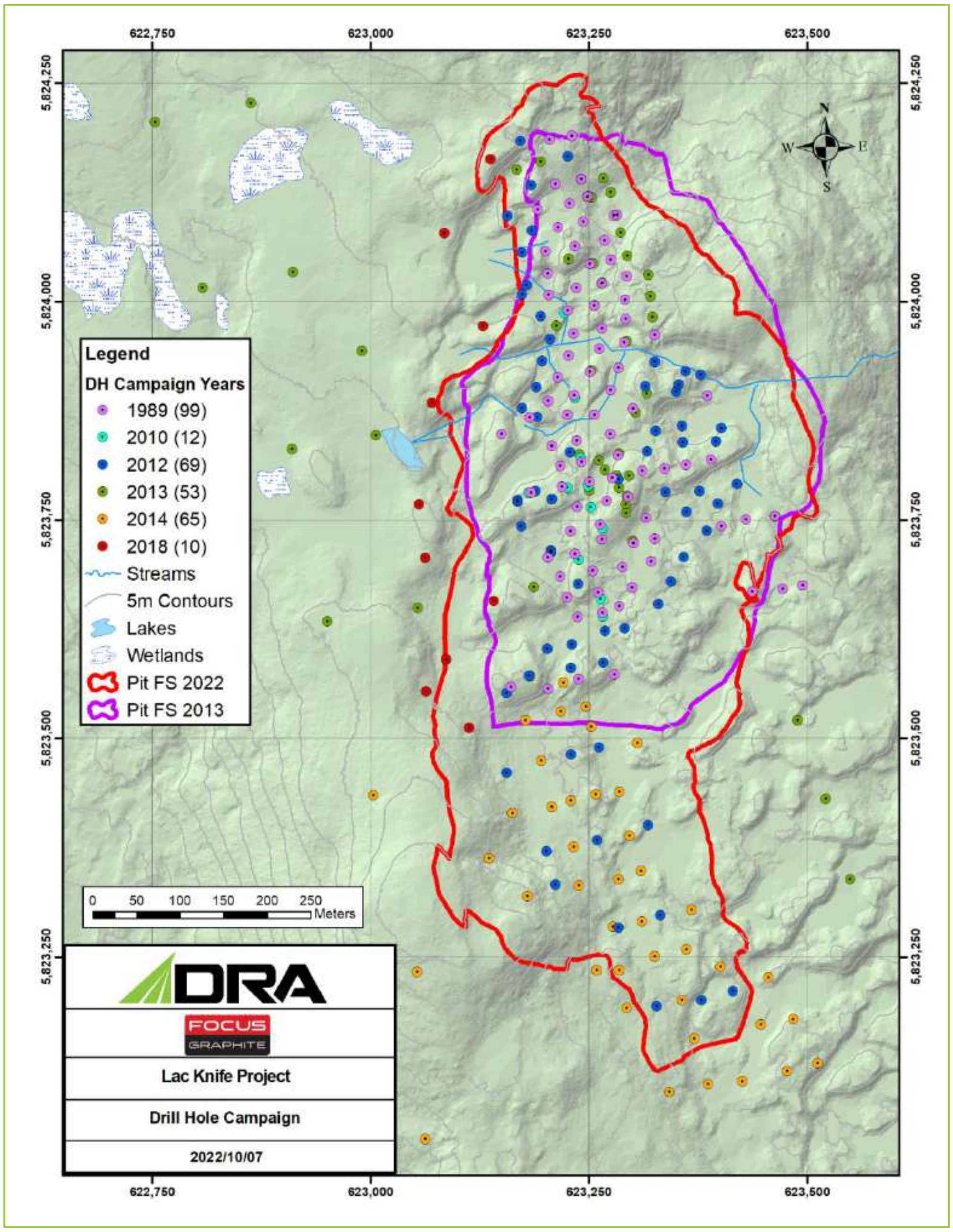


Source: IOS, 2022

10.8 1989 – 2018 Drilling Location

Figure 10.9 depicts the location of all exploration drill holes location at the Lac Knife Project in relation to the 2014 FS and the 2022 FSU pit shells.

Figure 10.9 – Location of all DDH for the 1989 to 2018 Drilling Campaigns



Source: DRA, 2022

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

The text is extracted and translated from the various drilling campaign reports produced by IOS with slight modifications by DRA for the purpose of this Section of the Report. These reports are referenced in Section 27.

The following procedures follow the core logging and sampling interval marking by IOS geologist. This portion of the work is usually performed by a geological and/or laboratory technician.

11.1 Core Sampling

Typically, all graphite mineralised intersections are sampled along with the portion of encasing waste rock, up to two (2) m above and below the mineralised intervals.

Typical sample size is 1.5-metre-long samples depending on programs with a minimum of 0.3 m and a maximum of 5.90 m for an average length of 1.67 m. The sample may also be constrained by lithological contacts, the variations of mineralisation and/or alteration as well as the losses of continuity of the intervals.

Table 11.1 details the number of samples collected, the total number of metres sampled that were pre-processed, pulverized, and shipped to COREM Laboratory for analysis.

Table 11.1 – Number of Samples and Metreage from Lac Knife

Year	Drilling Type	# of Holes	Drilled Length (m)	Assayed Length for %Cg (m)	# of %Cg Samples	Assayed Length for %S (m)	# of %S Samples
1989	DDH (BQ-Size)	99	7,670	4,251	2,791	625	272
2010	DDH (NQ-Size)	12	1,234	937	634	937	634
2012	DDH (NQ and PQ-Size)	69	7,312	3,554	2,689	3,554	2,689
2013	DDH (NQ and PQ-Size)	53	5,902	2,287	1,777	2,287	1,777
2014	DDH (NQ-Size)	65	8,072	3,253	2,973	3,253	2,973
2018	DDH (NQ-Size)	10	3,132	565	391	564	391
	TOTAL	**308**	**33,322**	**14,847**	**11,255**	**11,220**	**8,736**

11.2 Sample Preparation Protocol

The following sampling protocol was originally established by IOS for the 2010 Lac Knife Project drilling program and has been applied to subsequent years with some refinements. All sample preparation is performed by IOS personnel at their Chicoutimi, Québec core logging facility.

Drill core samples were prepared in the IOS laboratories and shipped to COREM for analysis. For all drilling programs, a sub-population of ~10% of the samples was also sent to Activation Laboratories (Actlabs) located in Ancaster, Ontario for check-analysis as well as for the calibration of trace elements. The different stages of the sampling protocol are described in the sections.

11.2.1 Drill Sample Preparation 1989

A report from Explograph entitled "Report on the Summer 2000 Field Work" dated from October 2000 indicated that the mineralized core that was shipped from the Lac Knife deposit was whole when sent to the laboratory for crushing and assaying. The crushed rejects were used to constitute bulk samples for the preliminary metallurgical testing at COREM.

The Davy-Roche Feasibility Study provided the following information regarding the sample preparation protocol for the 1989 drill core samples. All samples collected were sent to the Chimitec Ltd laboratory located in Sainte-Foy, Québec. Core was crushed in a jaw crusher to -1/2 inch and riffle split to extract a sub-sample between 200 to 300 grams (g). This sub-sample was pulverised to -150 mesh.

11.2.2 Sample Preparation Twin Drill Hole Program 2010

During the 2010 drill campaign, core boxes were collected by the IOS crew and returned to the Fermont facility by truck. The core was measured at the IOS facility, and core boxes were labelled with aluminum tags showing the drill hole number, box number, depth (from-to) in metres, and logged as described in Section 10 of this report.

At the IOS facility, the core was split in half longitudinally with a diamond saw. When required, sample twins were prepared by quartering the half core intended for assaying. Samples are described in samples booklets: one tag is placed with the sample, and a second tag is stapled into the core-box.

Quality control samples were inserted prior to sample shipment to the laboratory. Samples were shipped to the Inspectorate Exploration and Mining Services Inc, based in Richmond, British Columbia by road. Inspectorate is an ISO-9001-2008 certified laboratory, but at the time, was not registered as ISO-17025. Each hole being sent had a separate work order.

To resolve problems at the laboratory, half-core witness samples from drill holes LK-10-104 and LK-10-108 were quarter-split to prepare a twin sample to be shipped to ALS-Minerals for inter-laboratory crosscheck. Sample numbers were maintained the same as initial Inspectorate samples. A total of 91 such replicates were prepared.

The sample preparation indicated above is no longer relevant since all samples from the 2010 twin drill program were re-sampled and submitted to COREM in 2012.

11.2.3 SAMPLE PREPARATION 2012 AND 2013

At the IOS facility, the core is cut in half longitudinally with a diamond saw. For PQ core used in the 2012/2013 drill campaign and due to the large diameter of the core, two (2) 1-centimeter (cm) slices were cut from each side of the core. The one slice is used for the geochemical analysis, and the second slice is inserted back into the box along with the center portion intended to provide material for metallurgical testing.

At the IOS facility, the sample preparation including the re-sampling of the twin drill hole program is described as follows:

- Core was sawed longitudinally if received whole from the field and then bagged.
- The bags containing the samples are left open in a heated and ventilated room for drying.
- Since the 2012 drill program, density measurements are carried out on all samples using the water immersion method. Samples are not coated due to their low porosity.
- Samples are crushed in a Chipmunk-type jaw crusher then riffle split to create a sub-sample weighting between 200-250 g.
- The entire aliquot is pulverized in a standard ring mill pulveriser supplied by RockLab. The rings of the pulveriser are composed of either chrome steel or carbon steel. The speed and time of the pulverization are determined at the beginning of each project by conducting pulverization tests. The granulometry is monitored every 10 samples using a laser granulometric analyser. The ideal size is 85% passing 75 microns, but this ideal size is difficult to achieve for the Lac Knife project due to micaceous minerals breaking into flakes generally greater than 75 microns in size. For these samples, a visual examination using a stereomicroscope was performed and a decision was made to pulverize the sample a second time or leave it as is. A 60-gram aliquot is collected off the pulverised material for shipping to the analytical laboratory. The remaining material is stored at the IOS facility. It is unlikely that using carbon steel in the pulverizing ring would introduce significant contamination of the sample.
- Prior to shipping, an IOS technician ensures that all the samples are present and labelled properly. The technician also ensures that the internal quality control samples (blanks, duplicate and standard reference material) are weighted and inserted in the sampling chain.
- Pulp samples weighing 50-55 grams were then sent to COREM. Duplicate samples (1 in 10) were also shipped to ACTLABS for analysis.

For the 2014 FS Report, AGP reviewed the laboratory preparation protocols implemented by IOS since 2012 and found the procedure described in the various reports to respect industry standards. AGP inspected the IOS facility and although the author is not a specialist in laboratory procedures, the facility was found to be well maintained, clean and appeared to be operated in similar fashion as other facilities previously visited by the author.

11.2.4 Sample Prep 2014 and 2018

11.2.4.1 Cutting

The drill core was cut in half lengthwise using a diamond saw with one of the halves cut again in half to produce a quarter core destined for analysis. The remaining 3/4 core is put back in the box as witness core or for future resampling. The 1/4 core samples for analysis were individually bagged with a slip numbered with a bar code (e.g.: 80312385) according to the following nomenclature:

- project number (first three digits, i.e., 803).
- type of material (one digit); and
- sample (last four digits. i.e., 2385).

11.2.4.2 Drying

The samples, following being cut and bagged, were dried in a heated and ventilated room. The samples remained in their unclosed bag that was identified and prepared during the cutting stage and were placed on mesh shelves.

11.2.4.3 Density Measurements

The density of the rock was measured on each of the dried samples using the entire sample material for the analysis. The density measurement protocol was adapted from an ASTM standard method for the measurement of coarse aggregate density (ASTM designation C127-07). An internal protocol (surface dry) was implemented following a comparison with the ASTM method. The main parameters for calculating density were the weight of the dry sample and the weight of the sample in water.

The sample was immersed in a pool of water where the volume and temperature of the water were measured and controlled. An electronic balance was used, which automatically calculated the density of the sample. The calculation was redone on a spreadsheet as a quality control. The samples were then subsequently placed in a steel dish to be quickly re-dried and placed back in the plastic bags awaiting their crushing.

11.2.4.4 Crushing

Samples were crushed using a manganese steel jaw crusher (TM Engineering Terminator™) to reduce the particle size for pulverization. The optimal particle size sought was 70% to 85% passing 2 millimeters (mm), which was validated every 10 samples by sieving.

11.2.4.5 Splitting

Using a riffle splitter, an aliquot of 200 to 250 g was collected to be subsequently pulverized. Excess material was bagged and kept in plastic barrels in which nitrogen was added to limit oxidation. These barrels were inventoried and are currently stored at IOS's facilities in anticipation for metallurgical testing.

11.2.4.6 Pulverization

The 200-250 g aliquot was initially pulverized in a chrome steel bowls using a Rocklab shatter-box, and then in a tungsten bowl. The speed was fixed, and the pulverization time was determined at the beginning of the project to obtain the required particle size. The crushing time was occasionally readjusted, as needed when the material was not adequately pulverized. A check of the particle size obtained was carried out every ten samples using a laser dispersion particle size analyzer. If the particle size did not meet the specifications, the material was examined using a binocular magnifying glass to validate if the problem was due to the presence of micas, which could not be pulverized despite the energy supplied.

The desired optimum particle size was 85% passing 75 µm. Approximately 55 g were taken from the pulverized material and deposited in plastic bottles. The remaining material was bagged and stored in inventoried boxes.

11.3 Sample Handling Quality Protocols

A quality control program was developed over the many drilling campaigns and firmly established by IOS for the sampling preparation program.

11.3.1 Screening of Crushed Samples

During grinding, it was preferable for the particle size of the material to be stable and fine enough to ensure the representativeness of the material to be pulverized. The crushed material of approximately 1 out of 10 samples was sieved manually to check the proportion of material passing through 2 mm.

The jaw crusher (Terminator type) was used, and the average percentage of material below 2 mm was 90.6% with a standard deviation of 4.7%. When the percentage of material passing decreased below 75-80%, the gap between the jaws of the crusher was readjusted to reduce the particle size of the material. The proportions of material retaining at 2 mm met the specifications for all the checked samples.

11.3.1.1 Granulometry Analysis

The particle size distribution of the samples from the pulverization was measured using a Fritsch Analysette 22™ laser scatter particle size analyzer. The analysis provided the proportions of material passing at different particle sizes (38 µm, 45 µm, 63 µm, 75 µm, 106 µm, 125 µm, 150 µm, 250 µm, 500 µm and 1000 µm) as well as particle size curves. For each selected sample (approximately 10%), three measurements were carried out. When a measurement diverged, new replicas were produced until three comparable results were obtained. Note that this type of measurement diverged slightly from traditional sieving, assuming that the particles were spherical. During sieving, particles with high axis ratios tended to be preferentially retained in the sieves, creating a bias towards large particle sizes.

11.3.1.2 Granulometry of Certified Reference Material

An alignment of the particle size analyzer cell was carried out at the start of each day and a measurement of the F-500 certified reference material, supplied by Fritsch, or the internal G2MRI14 reference material was taken. A measure of the reference material was also performed approximately every 20 samples during a project, for the measurement of instrumental drift.

11.3.1.3 Visual Inspection

When the pulverization did not reach 85% of material passing 75 µm, a visual check was carried out to determine if this deviation was caused by the presence of mica, which could not be finely pulverized. As mica unravels into elastic sheets, it does not pulverize easily. If the problem is not related to the presence of micas, the series of samples must be pulverized again.

The examination for the presence of mica was carried out dry, by an IOS geologist, with the use of an episcopic polarizing stereomicroscope (Leica M205 C) and observations and comments were recorded. The samples in this project all exceeded the target of 85% passing 75 µm.

11.4 Sample Dispatch

Once the samples preparation was done, samples were ready for shipping. The shipping of the samples batches was carried out by a technician who ensured that all the samples for each hole were accounted for, and that the proposed analytical method was validated. Internal and certified reference materials as well as blanks were weighed from a prepared list and were inserted into the sampling stream. Samples and control materials sent to COREM were shipped in plastic containers provided by COREM. Each container had a barcode label and a handwritten number on the lid. Samples shipped to Actlabs were placed in plastic bags with tie-wraps.

11.5 Analytical Method

Graphitic carbon assaying is challenging due to the intrinsic difficulty of analyzing specific carbon species. Carbon in rocks can be lodged in graphite, pseudo graphite, and organic matter as well as carbon in carbonate and other minerals. (Barrette and Girard, 2012)

The assaying procedures for graphite assume (a) the removal of the non-graphitic carbon prior to assaying, or (b) the subtraction of the non-graphitic carbon from total measured carbon to obtain the graphitic carbon content.

For laboratories that choose to remove the non-graphitic carbon, inorganic carbon and organic matter are either roasted or oxidized at low temperatures or removed using an acid pre-treatment prior to assaying for graphitic carbon using equipment such as LEICO™ or Eltra CS-2000™ analyser. Graphitic carbon resists the heat from roasting and acid leaching.

For laboratories that subtract the non-graphitic carbon from the total carbon, the organic matter is oxidized during roasting; the carbonate carbon is often measured by colorimetric methods. The total carbon is typically determined using assay equipment such as the LEICO™ or Eltra CS-2000™ analyser. A formula is used to derive the graphitic carbon assay by subtracting from the total carbon the inorganic (carbonate carbon) and organic carbon portion of the sample.

IOS commented that the difficulty with removing the non-graphitic carbon prior to analysis is that the errors are cumulative. The induction furnace works by integrating through time the CO_2 or SO_2 emissions, which is thus cumulating errors. Therefore, graphitic carbon measurements are plagued with a sum of errors of all of the other manipulations or assays.

Excessive pulverization of a sample is also known to reduce a portion of the flake graphite to amorphous graphite, rendering it more susceptible to digestion by the acid pre-treatment and compounding the problem.

11.5.1 Chimitec Laboratory 1989

The Davy-Roche Feasibility Study provided the following information regarding the analytical procedure for the 1989 drill core samples. All samples were analysed at the Chimitec Ltd laboratory. Determination of the total carbon was realized by LECO™ analyser. Determination of the organic carbon was done by using colorimetric methods. The graphitic carbon was calculated by subtracting the organic carbon from the total carbon. The report did not indicate the handling of the inorganic carbon in the analytical procedure, but the inorganic portion of the total carbon at the Lac Knife is known to be very low.

11.5.2 Inspectorate Laboratory 2010 Twin Drill Hole Campaign

Samples from this laboratory were completely replaced with assays from COREM and a discussion on the analytical procedure used in the 2010 twin drill hole campaign at the Inspectorate facility is therefore no longer relevant.

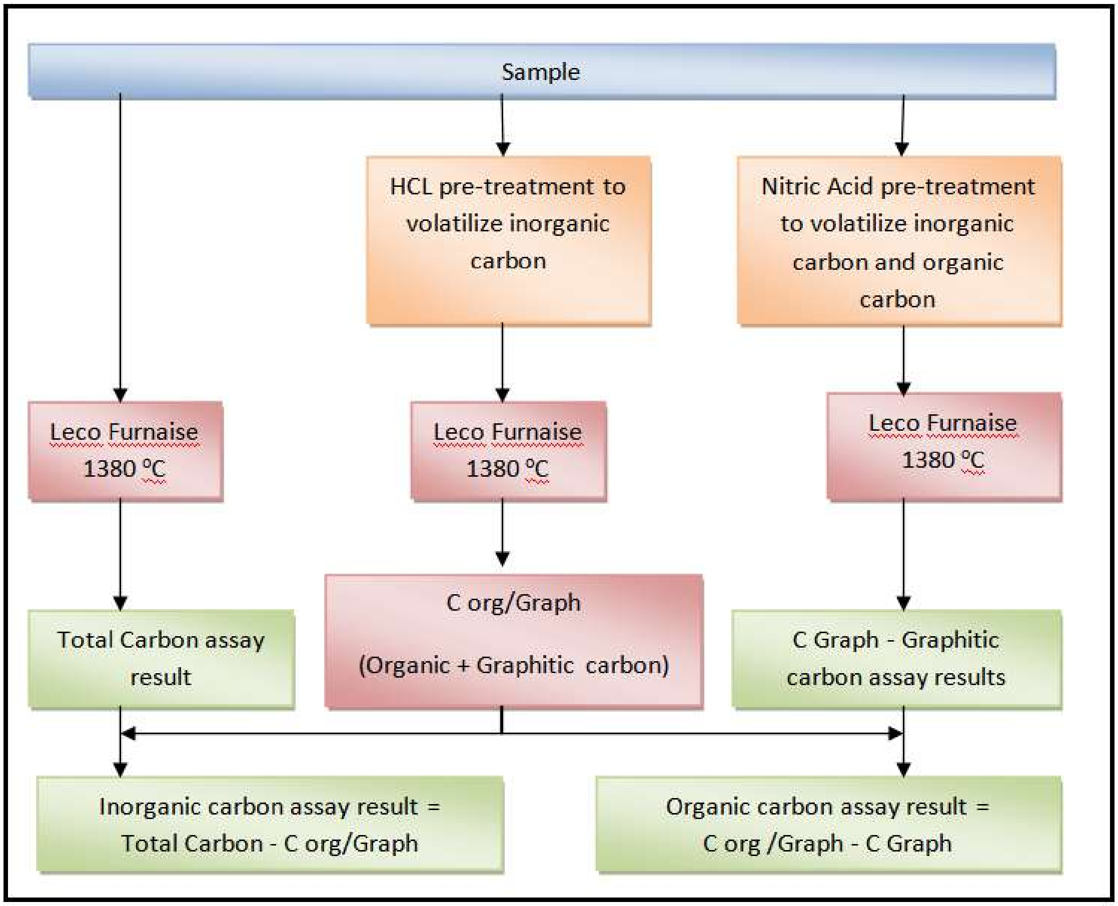
11.5.3 COREM 2010/2011 Re-Sampling Program - 2012, 2013, and 2018 Program

Samples for the 2012, 2013, 2014 and 2018 drill program and all the re-sampling of the 2010/2011 twin drill hole program were submitted to COREM Laboratory. COREM is an ISO/CEI 17025-2005 certified laboratory located in Québec City, Québec.

Every core sample was analyzed for Graphitic Carbon and Total Sulphur and every tenth sample was also analyzed for total carbon, inorganic and organic carbon.

The procedures described below are sourced from documents obtained by COREM. Figure 11.1 illustrates the procedure used for the various assay results.

Figure 11.1 – Summary of COREM Analytical Procedure



11.5.3.1 *COREM TOTAL CARBON AND TOTAL SULFUR*

COREM procedure code LSA-M-B45 dated October 1, 2012 is applicable for the determination of total carbon in rocks, coal, cast iron, ore, and concentrates whose content is between 0.05 and 100%. For sulphur, the LSA-M-B41 procedure dated October 1, 2012, is applicable for the determination of total sulphur in rocks, ore, petroleum products, coal, and cast iron whose content is between 0.005 and 100%.

The sample is placed in a LECO capsule and then introduced into the furnace (1,380°C) under an atmosphere of oxygen. Carbon is oxidized to CO_2. After the removal of moisture, gas (CO_2) is measured by an infrared detector. Sulphur is then oxidized to SO_2 and measured by the infrared detector. A computerized system calculates and displays the concentration of the total carbon and total sulphur present in the sample.

11.5.3.2 COREM Graphitic Carbon

COREM procedure code LSA-M-B10 dated October 22, 2012, is applicable for the determination of graphitic carbon in rocks, coal, cast iron, ore, and concentrates whose content of graphitic carbon is between 0.10 and 100%.

A sample 0.1 or 0.2 g is pre-treated with nitric acid to remove the inorganic (carbonate) and organic carbon. The 0.1 g charge is used for high graphite samples to improve the efficiency of the nitric acid attack. The sample is then placed in a LECO capsule and introduced into the furnace (1,380°C) under an atmosphere of oxygen. The residual carbon is oxidized to CO_2. After the removal of moisture, the gas (CO_2) is measured by an infrared detector. A computerized system calculates and displays the concentration of the graphitic carbon present in the sample. It is noted that nitric acid digestion requires delicate sample manipulation that can introduce small errors in the final graphitic carbon grade.

11.5.3.3 COREM Organic Carbon

COREM procedure code LSA-M-B58 is performed for the determination of organic carbon in rocks, coal, cast iron, ore, and concentrates whose content of organic carbon is between 0.4 and 100%.

First, the sample is pre-treated with hydrochloric acid to volatilize inorganic carbon; organic carbon and graphite will remain (C org/graph). A second portion of the sample is pre-treated with nitric acid to volatilize the inorganic and organic carbon; the graphitic carbon will remain (C graph). The samples are placed in a LECO capsule and then introduced into the furnace (1,380°C) under an atmosphere of oxygen. Carbon is oxidized to CO_2. After the removal of moisture, gas (CO_2) is measured by an infrared detector. A computerized system calculates and displays the concentration of the organic / graphitic carbon and the graphitic carbon present in the sample. The result of the organic carbon is obtained by a calculation using the following equation: Organic Carbon = C org/graph – C graph.

11.5.3.4 COREM Inorganic Carbon Analysis

COREM procedure code LSA-M-B11 is selected for the determination of inorganic carbon in rocks, coal, cast iron, ore and concentrates whose content of inorganic carbon is between 0.4% and 100%.

The sample is pre-treated with hydrochloric acid. Then, the sample is placed in a LECO capsule and introduced into the furnace (1,380°C) under an atmosphere of oxygen. Carbon is oxidized to CO_2. After the removal of moisture and ash, gas (CO_2) is measured by an infrared detector. A computerized system calculates and displays the concentration of the organic/graphitic carbon in the treated sample. A second part of the untreated sample is analyzed to determine its total carbon concentration. Inorganic carbon is determined by subtracting the concentration of organic carbon / graphite concentration from total carbon.

11.5.4 ACTLABS 2012, 2013, 2014 AND 2018 DUPLICATE SAMPLES

Ten percent of the 2012-2018 pulps were analysed for Graphitic Carbon and Total Carbon along with multi element ICP at Activation Laboratory (ACTLABS). The ACTLABS Ancaster facility is an ISO/IEC 17025:2005 with CAN-P-1579 certified laboratory located in Ancaster, Ontario.

The procedures described below are sourced from documents obtained from ACTLABS.

11.5.4.1 ACTLABS TOTAL CARBON AND TOTAL SULPHUR

For the ACTLABS procedure code 4F, an accelerator material is added to a 0.2 g sample. The inductive elements of the sample and accelerator couple with the high frequency field of the induction furnace. The pure oxygen environment and the heat generated by this coupling cause the sample to combust. During combustion, carbon-bearing elements are reduced, releasing the carbon, which immediately binds with the oxygen to form CO and CO_2, the majority being CO_2. Also, sulphur-bearing elements are reduced, releasing sulphur, which binds with oxygen to form SO_2. Sulphur is measured as sulphur dioxide in the first Infrared (IR) cell.

A small amount of carbon monoxide is converted to carbon dioxide in the catalytic heater assembly; SO_2 is converted to SO_3, while sulphur trioxide is removed from the system in the cellulose filter. Carbon is measured as carbon dioxide in the IR cell as gases flow through the IR cells. Carbon dioxide absorbs IR energy at a precise wavelength within the IR spectrum. Energy from the IR source is absorbed as the gas passes through the cell, preventing it from reaching the IR detector. All other IR energy is prevented from reaching the IR detector by a narrow bandpass filter. Because of the filter, the absorption of IR energy can be attributed only to carbon dioxide. The concentration of CO_2 is detected as a reduction in the level of energy at the detector. An Eltra CS-2000TM analyzer is used for the analysis.

11.5.4.2 ACTLABS GRAPHITIC CARBON

For ACTLABS procedure code 5D, a 0.5 g sample is subjected to a multistage furnace pre-treatment to remove all forms of carbon, but graphitic carbon. Either a resistance or induction furnace is used for analysis. The inductive elements of the sample and accelerator couple with the high frequency field of the induction furnace. The pure oxygen environment and the heat generated by this coupling cause the sample to combust. During combustion, carbon-bearing elements are reduced, releasing the carbon, which immediately binds with the oxygen to form CO and CO_2, the majority being CO_2. Carbon is measured as carbon dioxide in the IR cell as gases flow through the IR cells.

Carbon dioxide absorbs IR energy at a precise wavelength within the IR spectrum. Energy from the IR source is absorbed as the gas passes through the cell, preventing it from reaching the IR detector. All other IR energy is prevented from reaching the IR detector by a narrow bandpass filter. Because of the filter, the absorption of IR energy can be attributed only to carbon dioxide (CO_2). The concentration of CO_2 is detected as a reduction in the level of energy at the detector. An Eltra CS-2000™ analyzer is used for the analysis.

11.5.4.3 *Actlabs Multi-Element ICP*

For ACTLABS procedure code 1E2, a 0.5 g of sample is digested with aqua regia for 2 hours at 95°C. Sample is cooled then diluted with de-ionized water. The samples are then analyzed using a Varian™ Inductively coupled Plasma - Optical Emission Spectrometer ICP-OES for the 35-element suite.

11.6 Quality Assurance and Quality Control Program

The Lac Knife Project drill hole assays have been monitored by a quality assurance program and quality control program (QA/QC) since 1989. The programs in place during the 1989 campaign were limited in scope and only consisted of pulp duplicate and check assays. DRA notes this program was consistent with the industry practice at the time the drilling was conducted.

Under the supervision of IOS, a more comprehensive program was implemented in 2010. This program consisted of quarter split duplicates, blanks, and insertion of commercially available certified reference material.

Prior to the 2012 drill campaign, and following the issues encountered at the Inspectorate Laboratory, the QA/QC program was reviewed IOS carried out a round-robin assay program to help in the selection of a primary laboratory and to resolve the graphitic carbon analytical issue. The program was reviewed by consulting firm Roscoe Postle and Associates (RPA) of Toronto, Ontario. As part of the round-robin program, an internally developed reference material was also added to the suite of the commercially available material.

Changes were implemented for the 2012 campaign: IOS added the insertion of internally generated reference material, crusher duplicates and pulp duplicates. IOS also implemented a 10% check assays program at an umpire laboratory.

These QA/QC protocols remained in place for the 2013 drill campaign and have been adopted as the de facto procedures for the Lac Knife Project.

DRA notes that IOS routinely monitored results of the internal QA/QC program along with the QA/QC program of the analytical laboratory during the drill program execution to ensure quality assays. DRA notes that AGP reviewed and commented on the information provided by IOS in the various end-of-campaign drill reports, which are summarised below.

11.6.1 QA/QC Program 1989

The Davy-Roche Feasibility Study provided the following information regarding the QA/QC protocol in place at the time the drilling was conducted. To control the quality of the analysis from the Chimitec laboratory, two (2) protocols of verification were implemented:

- Pulp Duplicate: Fifty-five (55) pulps originally analysed at Chimitec were re-analysed at Metric Lab of Montreal, Québec.
- Check assays: Fifteen samples pulps were re-analysed three (3) times at the Chimitec laboratory and then forwarded to the *Centre de Recherches Minérales de Québec* (CRM) inQuébec City, Québec for re-analysis.

Results from the pulp duplicate program show that except for four outliers, the grade differences between Chimitec and Metric Lab were evenly spread about the zero line. The sum of the differences indicated +24.44% Cg. However, once the four outliers were removed from the dataset, the sum of the difference was reduced to -0.72% Cg which translated to an average lower value of 0.01% Cg per sample for the Chimitec laboratory.

Results from the check assay program indicated that on average, CRM reported values 0.29% Cg higher than those of the Chimitec laboratory. The average relative difference was 4.07%, which was considered acceptable by Davy-Roche.

AGP reviewed the information presented and, although details of the analytical procedure used for the Metric Lab and CRM were lacking in the report reviewed, AGP concurred with the assessment of the author of the Davy-Roche Feasibility Report.

11.6.2 QA/QC Twin Drill Hole Campaign 2010

Samples from this drill campaign had numerous issues related to the QA/QC results. Recommendations were made to re-sample the core and replace all assay results with assays from COREM, Focus's primary laboratory. Discussion on the QA/QC protocol and results for the twin drill hole campaign conducted in 2010 is no longer relevant.

11.6.3 QA/QC Drill Hole Campaign 2012

11.6.3.1 COREM versus ACTLABS

A total of 10% of the pulps submitted to COREM were also analyzed at ACTLABS allowing the comparison of the graphitic carbon and total sulphur assays. The correlation between the labs is excellent despite the differences in the pre-treatment of the samples. For 2012, the 199 duplicates indicated an R^2 correlation coefficient of 0.9967 and 0.9975 for Cg and Stot, respectively.

11.6.3.2 Core Duplicates

A total of 45 core duplicates consisting of a second 1 cm thick slice of the PQ core were inserted in the sample chain with non-consecutive sample numbers. The correlation of the graphitic carbon is excellent with an R^2 correlation coefficient of 0.9724. The correlation coefficient was slightly lower for sulphur at 0.8824. The slope of both regressions is near 1 indicating a lack of bias.

11.6.3.3 Crusher Duplicates

A total of 37 crusher duplicates collected at the riffle splitter were inserted in the sample chain with non-consecutive sample numbers. The correlation coefficient R^2 for the graphitic carbon and the total sulphur assay of 0.9918 and 0.9975 respectively is excellent. The slope of both regressions is near 1 which is indicative of a lack of bias.

11.6.3.4 Pulp Duplicate

A total of 28 pulp duplicates consisting of a second cut weighing between 50 and 60 grams were submitted into the sample chain with non-consecutive sample numbers. No issues were reported by IOS. The correlation coefficient R^2 for the graphitic carbon and the total sulphur assay of 0.9899 and 0.9988 respectively is excellent. The slope of both regressions is near 1 which is indicative of a lack of bias.

11.6.3.5 Reference Material

Five (5) types of CRM were inserted in the sample chain. In 2012, reference material correctly certified for graphite was not available from Australian or North American suppliers. The material used at Lac Knife was sourced from Mongolia and China and several issues were noted in the IOS report:

- The number of measurements used to determine the certified values was not mentioned in the documentation.
- All the laboratories participating in the round-robin program were mentioned, but a number of them are not certified.
- The assaying methods for the graphitic carbon are not necessarily comparable to the North American market.

IOS concluded that the reliability of the graphitic carbon assay is found to be questionable regarding the specification required by the Project.

Reference material CGL003 and CGL004 were ordered from Techlab and originate from the Central Geological Laboratory in Mongolia. Both materials originated from graphite deposits located in Mongolia. The certified value is expressed as total carbon.

Reference material NCS DC 6019, 6029, 6021 were ordered from Sylab in France and are approved by the China National Analysis Center for Iron and Steel in China. Table 11.2 shows the certified material expected value and the average grade obtained by the laboratory used by Focus.

Table 11.2 – Certified Material

CRM	Element	Certified Value (%)	Average Cg 2012 (%)	Count 2012
CGL 003	C Total	14.43 ± 0.64	13.7	31
CGL 004	C Total	13.38 ± 0.67	12.4	27
NCS DC 60119	C Graphitic	2.90 ± 0.12	3.2	37
NCS DC 60120	C Graphitic	9.91 ± 0.08	10.1	28
NCS DC 60121	C Graphitic	76.5 ± 0.08	78.8	27

IOS generally reported that the precision was good for the certified reference materials GL003 and CGL004. For reference materials DC 60119, DC60120 and DC60121, the values obtain by COREM and ACTLABS generally remained fair but imprecise.

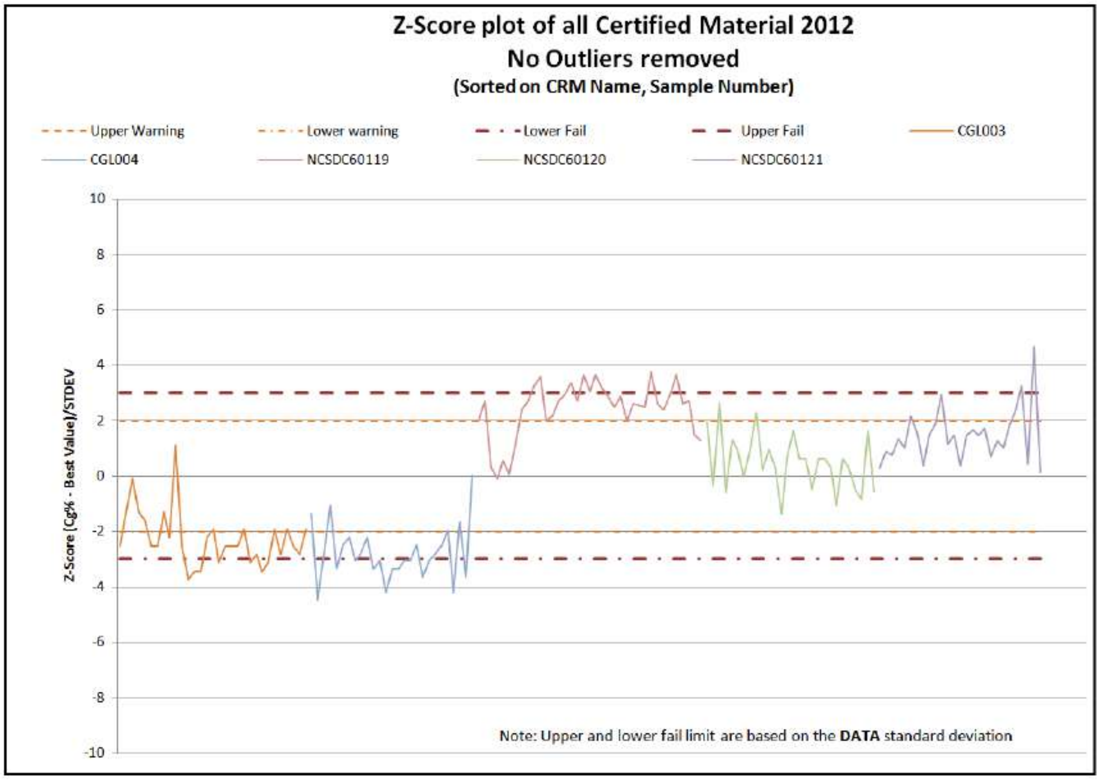
AGP reviewed the performance of the certified material for the 2012 drill campaign. Results indicated that on average, the laboratories used by Focus under-estimated the grade of the Mongolian CGL003 and CGL004 reference material and overestimated the grade of the Chinese reference material. The average grade is somewhat closer to the ±95 confidence limit of the certified value. AGP noted the CGL003 and CGL004 reference grade is expressed as total carbon and not graphitic carbon, which would explain the lower grades reported by COREM and ACTLABS. A Z-Score chart produced with the 2012 certified reference material using the data standard deviation indicated the SRM analyzed at COREM marginally stayed within 3 standard deviations of the data as shown in Figure 11.2.

11.6.3.6 Blanks

Blank material used by IOS originates from a high purity quartz vein found at Lac Bouchette, Québec. The material was clean, crushed, and pulverized using a ceramic disk pulveriser supplied by Bico Braun Int. as well as a mini rod mill with stainless steel rods. The quartz is certified sterile with metal assays under detection limit. The material allows the detection of contamination at the analytical level.

Approximately 230 blank samples were inserted into the sampling chain that was submitted to COREM during the 2012 drill campaign. IOS reported that no sample contamination was detected which was confirmed by AGP.

Figure 11.2 – CRM Z-Score chart (pass limits are based on the data standard deviation)



11.6.3.7 *INTERNAL REFERENCE MATERIAL*

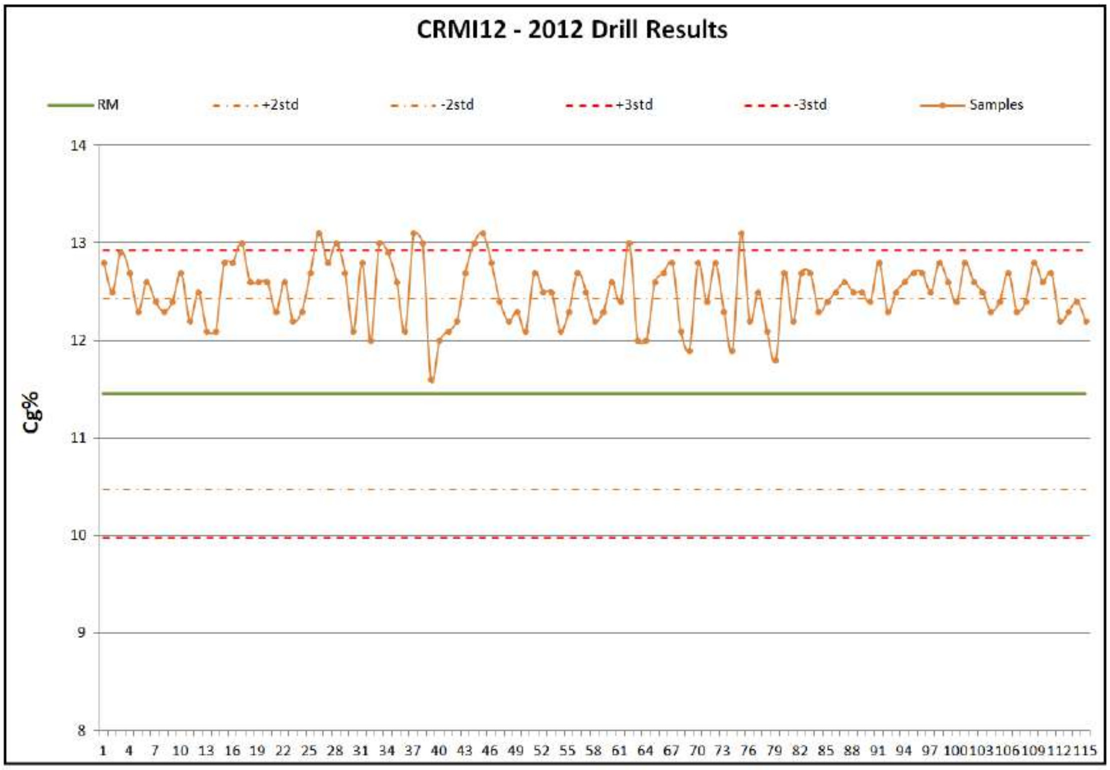
In addition to the above commercial reference materials, IOS has prepared an in-house standard material made from the reject sample material from the 2010 drilling campaign. The pulps were placed in an empty, clean, plastic barrel containing rods of various diameters and the barrel was rolled for 2 hours to homogenize the material. IOS screened the material to 1 mm then bagged it in 10 kg lots. This standard is referred to as CMRI12. The material was sent to five accredited laboratories, each of the laboratories received nine samples to assay. The result is that for CMRI12, at the round-robin stage, 45 assay results were available to derive an average value for this reference material.

The global average for CMRI12 from the 45 results is 11.45% Cg. It must be noted that not all laboratories have reported results as graphitic carbon; the results have been interpreted for ALS and SRC to derive a graphitic carbon value. If the results from these two laboratories are excluded, the remaining 27 results average 11.20% Cg. Either from 45 or 27 samples, the average value of CMRI12 can be determined with a reasonable level of confidence. AGP noted that the number of samples for the internal reference material was low when compared to commercial standards. Smee and Associate Consulting Ltd recommend a minimum of 60 analyses using a minimum of five laboratories be used for the preparation of a geological standard.

More than 150 CMRI12 were inserted in the sample chain during the 2012 drill campaign. IOS reported the assay results for graphitic carbon from COREM and ACTLABS averaged 12.4% Cg and were "stable" with a coefficient of variation of 3.2% for Cg and 1.6% for Ctot.

RPA reported the round robin assay results for the internally developed CMRI12 returned a global average grade of 11.45% Cg grade. AGP plotted 115 CMRI12 results analysed at COREM against the inter laboratory round robin data. Results indicated that COREM consistently overstated the grade of the CMRI12 by an average of 1.05% Cg. Results also show that the COREM assays (with a few exceptions) stayed within the +3 and +2 standard deviation limits as shown in Figure 11.3.

Figure 11.3 – CRMI12 Results for the 2012 Drill Campaign at COREM



11.6.4 QA/QC 2013 DRILL HOLE CAMPAIGN

11.6.4.1 COREM VERSUS ACTLABS

A total of 10% of the pulps submitted to COREM were also analysed at ACTLABS allowing for the comparison of the graphitic carbon and total sulphur assays. The correlation between the labs is excellent despite the differences in the pre-treatment of the samples. For 2013, the 130 duplicates indicated a R^2 correlation coefficient of 0.9981 and 0.9867 for Cg and Stot respectively.

11.6.4.2 CORE DUPLICATES

A total of 26 core duplicates consisting of a second 1 cm thick slice of the PQ core were inserted in the sample chain with non-consecutive sample numbers. The correlation of the graphitic carbon is excellent with a R^2 correlation coefficient of 0.9565. The correlation coefficient was slightly lower for sulphur at 0.9374. The slope of both regressions is near 1 indicating a lack of bias.

11.6.4.3 CRUSHER DUPLICATES

A total of 17 crusher duplicates collected at the riffle splitter were inserted in the sample chain with non-consecutive sample numbers. The correlation coefficient R^2 for the graphitic carbon and the total sulphur assay of 0.996 and 0.9784 respectively, is excellent. The slope of both regressions is near 1 which is indicative of a lack of bias.

11.6.4.4 PULP DUPLICATES

A total of 16 pulp duplicates consisting of a second cut weighing between 50 and 60 gr were in the sample chain with non-consecutive sample numbers. No issues were reported by IOS. The R^2 correlation coefficient for the graphitic carbon and the total sulphur assays were 0.9975 and 0.9967 respectively and considered excellent. The slope of both regressions is near 1 which is indicative of a lack of bias.

11.6.4.5 REFERENCE MATERIALS

For the 2013, the six types of certified reference materials (CRM) sourced from Mongolia and China remained in use along with the internally developed reference material.

Table 11.3 shows the certified material expected value and the average grade obtained by the laboratory used by Focus.

Table 11.3 – Certified Material for the 2013 Drill Program

CRM	Element	Certified Value	Average	Count
		(%)	Cg 2013 (%)	2013
CGL 003	C Total	14.43 ± 0.64	13.6	11
CGL 004	C Total	13.38 ± 0.67	12.3	12
NCS DC 60119	C Graphitic	2.90 ± 0.12	3.3	13
NCS DC 60120	C Graphitic	9.91 ± 0.08	10.1	14
NCS DC 60121	C Graphitic	76.5 ± 0.08	78.0	11
CRMI12	C Graphitic	11.45	12.5	54

IOS generally reported that the precision was good for the certified reference materials GL003 and CGL004.

The average value returned by the laboratories and used by Focus remains lower than the expected grade, the grade of the CRM being reported in total carbon and not graphitic carbon.

For reference material DC 60119, DC60120, and DC60121, the value obtained by Focus`s laboratory was higher than the expected value of the CRM. IOS reported the value remained imprecise.

Results for the internally developed CRMI12 mimic results from the 2012 drill program.

The average value obtained by COREM is about 1.05% Cg higher than the expected value derived from the inter lab round-robin program.

11.6.4.6 BLANKS

Approximately 115 blank samples were inserted in the sampling chain submitted to COREM during the 2013 campaign. IOS reported no contamination of the samples were detected, which was confirmed by AGP.

11.6.5 QA/QC 2014 AND 2018 DRILL HOLE CAMPAIGNS

11.6.5.1 COREM VERSUS ACTLABS

A total of 10% of the pulps submitted to COREM were also analysed at ACTLABS allowing for the comparison of the graphitic carbon and total sulphur assays. The correlation between the labs is excellent despite the differences in the pre-treatment of the samples. For 2014, the 178 duplicates indicated a R^2 correlation coefficient of 0.0.996 and 0.998 for Cg and Stot, respectively. For 2018, the 33 duplicates indicated a R^2 correlation coefficient of 0.0.9987 and 0.9981 for Cg and Stot, respectively.

11.6.5.2 CORE DUPLICATES

A total of 27 core duplicates from 2014 and three (3) from 2018 consisting of a second 1 cm thick slice of the PQ core were inserted in the sample chain with non-consecutive sample numbers. The correlation of the graphitic carbon is excellent with a R^2 correlation coefficient of 0.997 for 2014 and 0.9796 for 2018. The correlation coefficient was slightly lower for sulphur at 0.963 for 2014 and 0.8057 for 2018. The slope of both regressions for 2018 is not representative since they only have 3 data points.

11.6.5.3 CRUSHER DUPLICATES

A total of 28 crusher duplicates from 2014 and 3 from 2018 collected at the riffle splitter were inserted in the sample chain with non-consecutive sample numbers. The correlation coefficient R^2 is 0.998 for 2014 and 0.999 for 2018 for the graphitic carbon, and 0.997 for 2014 and 0.9966 for

2018 for total sulphur assay. The slope of both regressions is near 1, which is indicative of a lack of bias.

11.6.5.4 *Pulp Duplicates*

A total of 28 pulp duplicates from 2014 and three (3) from 2018 consisting of a second cut weighing between 50 and 60 g were in the sample chain with non-consecutive sample numbers. A small issue was reported by IOS for duplicate sample 80318444: it appears that the wrong sample was duplicated which will influence the R2 coefficient. No other issues were reported by IOS. The R^2 correlation coefficient for the graphitic carbon is 0.888 for 2014 and 0.9976 for 2018. Total sulphur assays were 0.949 for 2014 and 0.9997 for 2018 and considered excellent. The slope of both regressions is near 1 which is indicative of a lack of bias.

11.6.5.5 *Reference Materials*

For both 2014 and 2018, seven types of CRM were used. Some of the CRM sourced from Mongolia and China remained in use but are slowly being phased out from the CRM list and will be replaced by other CRM, along with the internally developed reference material. CGL 003 and CGL 004 are being phased out in 2018.

Table 11.4 shows the certified material expected value and the average grade obtained by the laboratory used by Focus.

Table 11.4 – Certified Material for the 2014 and 2018 Drill Program

CRM	Element	Certified Value	Average	Count	Average	Count
		(%)	Cg 2014 (%)	2014	Cg 2018 (%)	2018
CGL 003	C Total	14.43 ± 0.64	13.5	18	N/A	N/A
CGL 004	C Total	13.38 ± 0.67	12.2	19	12.4	1
CDN-GR-1	C Graphitic	3.12 ± 0.11	2.95	29	3.08	3
NCS DC 60119	C Graphitic	2.90 ± 0.12	3.7	13	3.24	4
NCS DC 60120	C Graphitic	9.91 ± 0.08	9.86	15	9.92	3
NCS DC 60121	C Graphitic	76.5 ± 0.08	79.8	9	77.4	3
OREAS 724	C Graphitic	12.6 ± 0.31	N/A	N/A	12.7	6
CRMI12	C Graphitic	11.45	12.1	67	12.4	12

The average value returned by the laboratories and used by Focus vary over the years but are still well within expected grade and show improvement for the 2018 values.

For reference material DC60119, DC60120, and DC60121, the value obtained by Focus`s laboratory was higher than the expected value of the CRM in 2014 but seem to have improved in the 2018 results.

Results for the internally developed CRMI12 mimic results from the previous years drill programs.

11.6.5.6 Blanks

Approximately 139 blank samples were inserted in the sampling chain submitted to COREM during the 2014 and 2018 campaign. IOS reported no contamination of the samples were detected which was confirmed by DRA.

11.7 Sample Security

Until the samples were received at the laboratory, samples collected by IOS were only accessible to authorized IOS or Focus personnel. DRA believes the chain of custody described in various reports and observed for the sampling during site visit at IOS facilities is to high industry standards. The author was able to observe most of the procedures described in this section, except for the drill program portion since no drilling was taking place at the time of the visits. However, the author was able to observe the drilling and quick logging portion in 2021 at another IOS led drilling program at Focus's Lac Tétépisca graphite project.

11.8 Comments by DRA

In DRA’s opinion, the sampling procedures, handling in the field, sample preparation at the IOS prep lab, sample and data security, and the analytical procedures were sufficient to maintain the integrity of the samples as representative of the material sampled.

Overall, the QP concludes that IOS implemented a complete QA/QC program that meets or exceeds industry standard. DRA considers that the assay results are adequate to support the Mineral Resource Estimate presented in this report.

12 DATA VERIFICATION

This Section has been summarised and updated from the Report available on SEDAR entitled NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study Québec – Canada" Met-Chem Project # 2013-064, issued on August 8, 2014, prepared for Focus Graphite Inc.

IOS has managed all drilling programs for Focus since 2010. IOS is an independent company providing exploration, sample preparation, and Geographical Information System (GIS) services to various exploration companies and government agencies. IOS has made a strong commitment to the geological and assay database and has, as far as possible, produced a database that is complete, well documented, and traceable. Prior to 2010, the former owner of the Project, Mazarin, managed the drilling programs. The original drill core was discarded and no longer available for review.

Field inspection and database validation were carried out by a number of authors prior to this FSU and are summarised below. Section 12.2 details the field inspection carried out by DRA on separate site visits at the Lac Knife project site on July 15 and 16, 2021, as well as at the IOS facilities in Chicoutimi, Québec, on October 4 and 5, 2021.

12.1 Summary of Previous Field Inspections

12.1.1 2010 to 2011 Roche Ltd. Field Inspection

Mr. Edward Lyons, P. Geo. of Tekhne Research on behalf of Roche Ltd. visited several work sites on the Lac Knife project between October 2010 and March 2011. He also visited the IOS laboratory and office located in Chicoutimi, Québec. Mr. Lyons reported that the original Mazarin drill hole sites were located from several areas using existing drill casing or definitive evidence of a drilling site, including old burlap pieces, core bits, pieces of drill pipe, etc.

At the time of the visit, the reconstructed grid coordinates were in NAD 27 and were reportedly validated in the field. The 2010 twin hole drill program was in progress during his last visit and Mr. Lyons reported the holes were carefully marked and all coordinates were surveyed using a hand-held GPS unit. At the rig, the core was properly marked and handled with due care. Core boxes were transported to a small field logging facility where a reconnaissance log was performed by the geologist on site. The core was then covered and shipped by truck to the IOS facility in Chicoutimi, Québec.

At the IOS laboratory, the core was received and stored in a secure yard adjacent to the facility for later processing. Core was detailed and logged following as much as possible the procedures that were established by Mazarin. Samples were saw-cut in half, tagged, and shipped to the Inspectorate Exploration and Mining Services Ltd., based in Richmond, British Columbia.

Mr. Lyons recommended that Mazarin's drill collars be verified in the field during the summer season and that all holes be properly marked and surveyed using a differential GPS unit competently operated.

Mr. Lyons concluded the work was satisfactory and that he believed that the core was properly handled and tracked, and that the sampling was done with a reasonable standard of care.

No independent samples were reported to have been collected by Roche.

12.1.2 2012 RPA/Soutex Field Inspection

June 28, 2012, RPA engineers Messrs. R. de l'Etoile and M. Lavigne visited the project site. At the time of the visit, a crew of geologists and operators was setting up a base camp for the 2012 drilling campaign.

Several drill sites from the 2010-2011 drilling program were visited and the location of the holes were clearly identified by metal casings with a metal cap engraved with the drill hole number. RPA commented that even if the position of the 1989 drill holes could not be verified in the field due to a lack of casing and/or hole identification. Evidence of human activity and drilling were observed at the expected drill hole locations.

RPA engineers also observed several locations where bulk sample material was taken in the 1990s and subsequently rehabilitated. Evidence of work and earth moving could be observed. Outcrops of mineralised, graphite-bearing rocks were examined from within the stripped area.

RPA concluded it was reasonably confident the drill holes from 1989 did, in fact, exist and considered acceptable to use the information related to these drill holes for Mineral Resource Estimate. During their site visit, RPA did not collect independent samples.

12.1.3 2013 AGP Field Inspection

October 30, 2013, Mr. Pierre Desautels, P.Geo of AGP visited the Lac Knife property, accompanied by Mr. Mikaël Block P.Geo., Exploration Geologist for IOS as well as Mr. Michel Lecuyer, a local outfitter. No field work or drilling was active at the time of the site visit. Based on Mr. Desautels' review on the QA/QC program, data validation, and statistical analysis, AGP noted the following:

- For the historical drilling, samples have been prepared and assayed at the Chimitec assay laboratory facility (now ALS Chemex). The analytical method used for the historical holes was not available. Historical assays were validated via a twinning drill program in 2012, with a follow up campaign in 2013. The twin drill hole results indicated that, while the high grade and low-grade sections were reproduced accurately, the twin hole could not reproduce individual assays within the various zones.

Overall, the grade distribution in the twin versus the original historical holes was found to be in close agreement and it is AGP's opinion that the use of historical holes in the resource estimate would not introduce a significant bias.

- Samples for all newer holes were prepared at the IOS facility and assayed at COREM. A routine 10% of check assays were done at ACTLABS. COREM pre-treated the samples with nitric acid followed by LECO furnace with the resulting CO_2 gas measured with an infrared detector. ACTLABS used a similar approach and the assays duplicated between ACTLABS and COREM correlated extremely well.
- A QA/QC program was established for the 2010 drill program which included the insertion of blank, standard, and duplicate samples. Improvements to this program were made during the 2012 and 2013 campaign which included the addition of in-house reference material and the routine submission of 10% of the pulps assayed at COREM to ACTLABS. The QA/QC submission rates meet industry accepted standards with IOS routinely monitoring the QA/QC program.
- No rigorous QAQC program was implemented by Mazarin for the 1989 drill program, and as the core is no longer available, no such program could be implemented by Focus.
- Data verification was performed by AGP through site visits, collection of independent character samples, and a database audit prior to the mineral resource estimation. AGP found the database to be well-maintained and virtually error-free.
- The bulk density samples collected by IOS in 2012 and 2013 indicated an average of 2.80 g/cm^3, which correctly reflects the density expected for this type of deposit.
- Core handling, core storage, and chain of custody were consistent with industry standards.

In conclusion, AGP identified no material sample bias during the review of the drill data and assays. The data collected by Focus adequately represented the style of mineralisation present on the Lac Knife Project without a restriction on resource classification. The error rate in the Lac Knife drill database, for the data that was verified by AGP, was found to be very low. In AGP's opinion, the current drill hole database was sufficiently complete and accurate for interpolating grade models for use in resource estimation.

12.2 2021 DRA Site Visits

12.2.1 Lac Knife Site

Mr. Claude Bisaillon, P. Eng., visited the Lac Knife property on July 15 and 16, 2021, accompanied by Ms. Celine Charbonneau, DRA Project Manager along with Mr. Mikael Block, P.Geo., Exploration Geologist for IOS. At the time of the visit, no drilling activities were being conducted. The visit consisted of travelling to the Lac Knife site and walking the ground to see the conditions of the site, location of drill hole markers, etc.

A similar visit took place at the Montagne-aux-Bouleaux dolomite occurrence to visit the location of 2018 exploration drilling and walk the two (2) exploration trenches. DRA also had the opportunity to fly over the entire Focus Lac Knife property in a helicopter to put the Project in perspective and evaluate new potential access roads.

12.2.2 IOS Chicoutimi Core Yard

Mr. C. Bisaillon visited the IOS Chicoutimi core yard and logging facilities on October 4 and 5, 2021, accompanied by Mr. Mikael Block. Mr. Rejean Girard, President of IOS was also at the site at that time. More data exchange with IOS was initiated. Mr. Bisaillon also met with IOS chemist Karen Gagné, P.Chem. to review and discuss the resampling program requested for the current resource estimate as well as the QA/QC program for the Lac Knife project and its evolution since the start of its management by IOS.

12.2.3 Site Visit Activities

The 2021 site visit entailed brief reviews of the following:

- Overview of the geology and exploration history of the Project;
- Discussions on the management of the Lac Knife exploration program by IOS;
- 2014 and 2018 Drill hole collar locations check;
- Description of the drill rig procedures including core handling;
- Description of the quick log procedures at the field core shack including core handling;
- Sample collection protocols at IOS's core logging facility;
- Discussion on the transportation of samples and the sample chain of custody including security;
- Core recovery check on core photos vs logs;
- Review of QA/QC program (insertion of standards, blanks, duplicates, etc.) and discussions with Ms. K. Gagné who was in charge of the QA/QC program for IOS at the Chicoutimi core logging and sample preparation facilities;
- Review of diamond drill core, core logging sheets and core logging procedures with IOS geologist M. Block, responsible for the 2018 drilling program. The review included commentary

on typical lithological units, alteration, and mineralisation mineralization styles, and contact relationships at the various lithological boundaries;

- Review of specific gravity sample collection;
- No independent sampling program was undertaken. IOS was already working on a resampling program set up by DRA. During the Chicoutimi site visit, Mr. Bisaillon examined sections of the core to check logged lithologies and evidence of sampling in mineralised and unmineralized areas.

Since 2014, IOS has been responsible for managing all aspects of the drill programs, sample preparation, logistics, and management and monitoring of the QA/QC program at the Lac Knife project for Focus. At the end of each drill program, IOS also authored a series of comprehensive internal reports for Focus as well as the statutory assessment work Reports which Focus had to file with the government of Québec at the end of all exploration seasons.

Figure 12.1 – Site Visit Photographs

Hole LK- LK-10-103 Drill Location

Same DDH, looking downhill towards Lac Knife

Typical road to drill sites

DDH in a flooded area, typical of southern portions of the pit

12.2.4 Database Validation

Following the site visit and prior to the resource evaluation, DRA carried out an internal validation of the drill holes in the Focus database. The database was received prior to the July 2021 site visit, the verification extended to a summary review of the drill hole database and geological interpretation at that time. Upon review of the database, a resampling program was requested to fill gaps in the geological and sampling data. An updated database with all updated geological information but without updated assays was received on January 14, 2022, and the final updated geological and assay database was received in February 2022.

As described from the previous sections of the Report, sampling intervals are on average 1.5 m in length. The sampling intervals honour the geological boundaries with proper shoulder samples as stated in the IOS field reports.

Approximately 95% of the holes are drilled perpendicular to the graphite lens at a dip of -41 to 90° and an azimuth ranging from N070º to N090º degrees (averaging N080°) accounting for deviation. The Assay database is comprised of a total of 11,255 samples as per Table 12.1.

Table 12.1 – Assay Database Lac Knife

Drill Program Year	Number of Assays
1989	2,791
2010	634
2012	2,689
2013	1,777
2014	2,973
2018	391
Total	**11,255**

12.2.5 Assay Quality Verification

As previously stated in the Section 11 conclusions, the sample assay protocol and the QA/QC protocol put in place by IOS are appropriate for this type of deposit and effective at preventing analytical bias and drift. During the IOS facility visit in Chicoutimi, Québec, the QP had various discussions with the geologist in charge of the Project as well as the IOS chemist in charge of the assaying and QA/QC. These discussions centered on assaying and quality of the analyses and the procedure put in place by Focus and IOS.

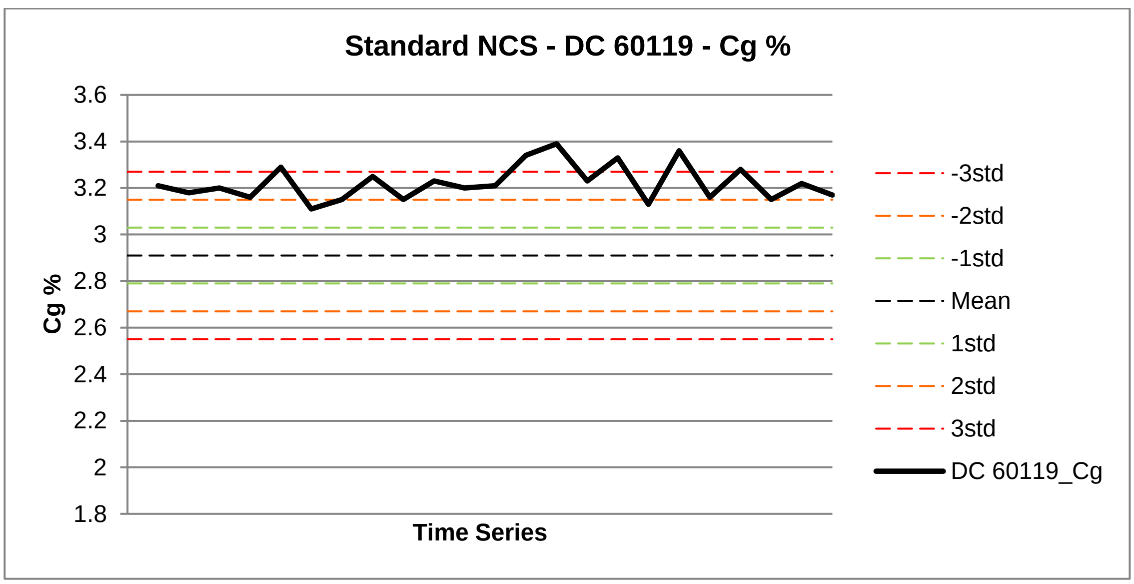
No independent sampling program took place during the Lac Knife site visit since there was no new core to sample and a resampling program requested by DRA to fill gaps for the resource estimate was in progress. All Focus core is stored on pallets or in core racks in the IOS Chicoutimi core yard.

During the second visit at the IOS facilities performed in October 2021, Mr. Bisaillon walked through the core yard and pulled out selected core from the core racks. Mr. Bisaillon verified portions of the 2014 and 2018 drill core as well as older core to verify logged lithologies and to verify evidence of sampling in mineralised and unmineralized areas and compared the findings with logs and core photographs.

During the many drilling campaigns, at least eight (8) different certified reference materials (CRM) were introduced in the sampling and assaying stream to assess accuracy of the analyses for Cg and Stot. CRM NCS DC 60119, NCS DC 60120 and NCS DC 60121 and CMRI12 are four of the CRM used, and they cover various percentages of Cg and Stot. CRM NCD DC 60119 is medium range Cg and medium range Stot, NCS DC 60120 is high range Cg and High range Stot while NCS DC 60121 is medium range Cg and low range Stot as depicted in Figure 12.2 to Figure 12.7.

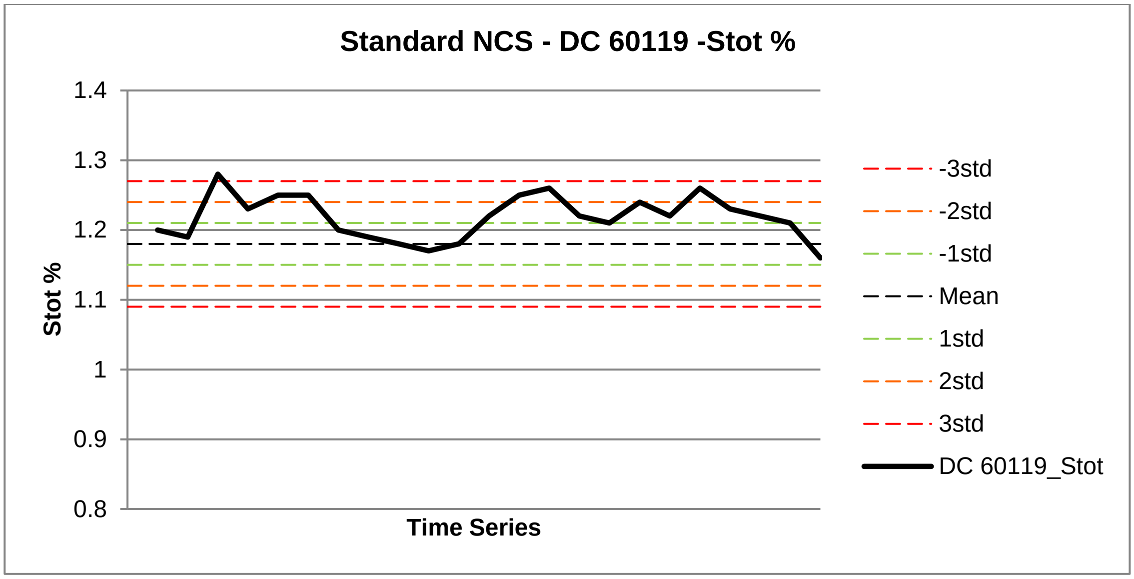
As discussed in Section 11, 2010 and 2012 drill programs relied solely on certified reference material soured from China and Mongolia, the certification process of which was not according to current industry standard. Either round-robin or routine analyses of these material diverged from their certified value, although being consistent among laboratories. It has been concluded that certification of these were discrepant, as reflected in the Z-score time series of these material.

Figure 12.2 - CRM NCS DC 60119 - Cg%



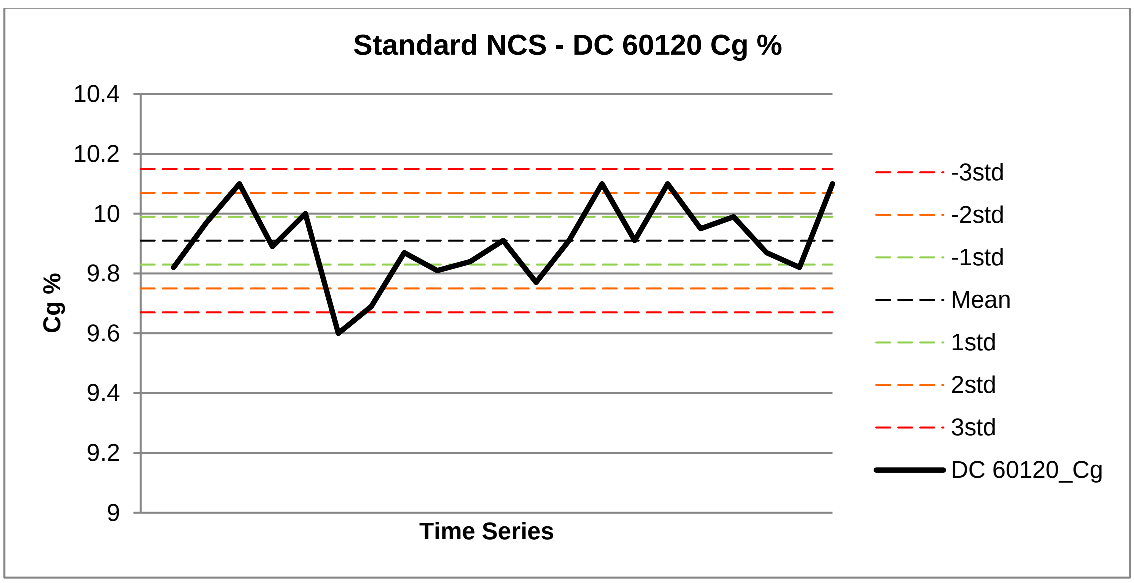
Source: DRA, 2022

Figure 12.3 - CRM NCS DC 60119 - Stot%



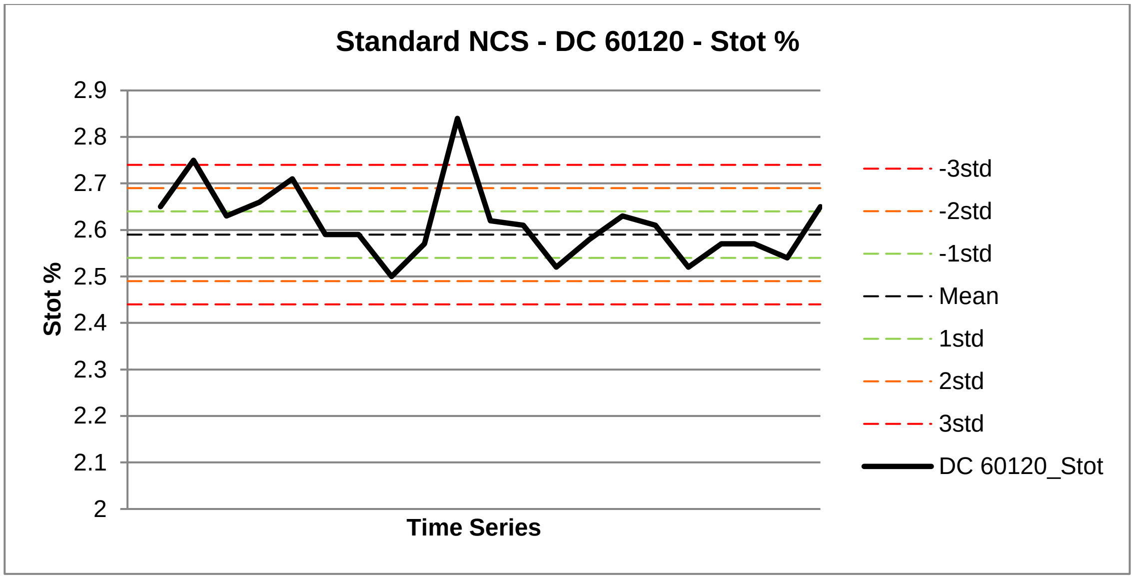
Source: DRA, 2022

Figure 12.4 - CRM NCS DC 60120 - Cg%



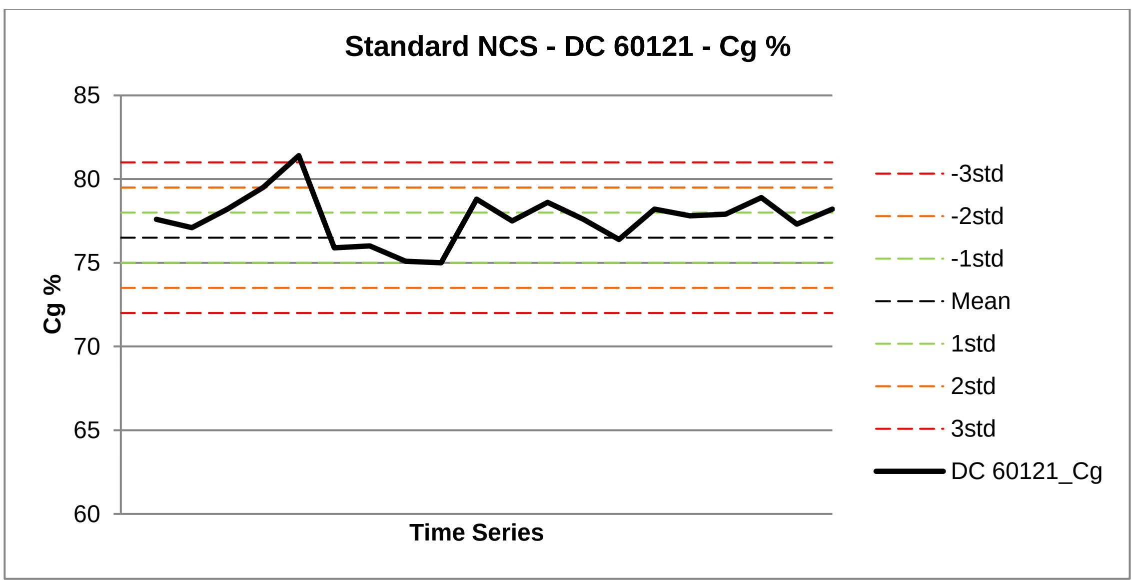
Source: DRA, 2022

Figure 12.5 - CRM NCS DC 60120 - Stot%



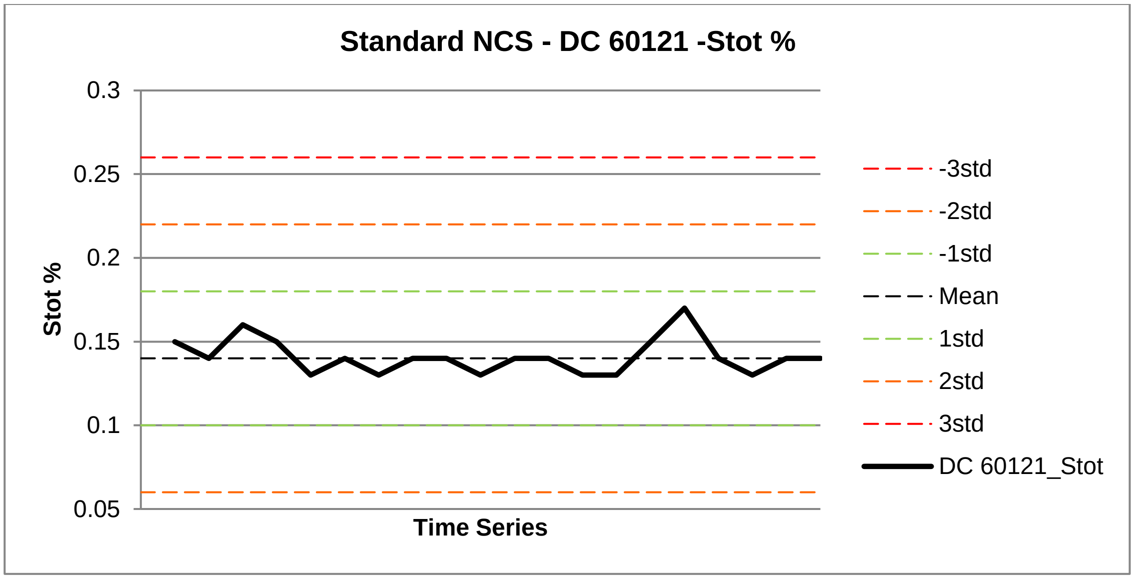
Source: DRA, 2022

Figure 12.6 - CRM NCS DC 60121 - Cg%



Source: DRA, 2022

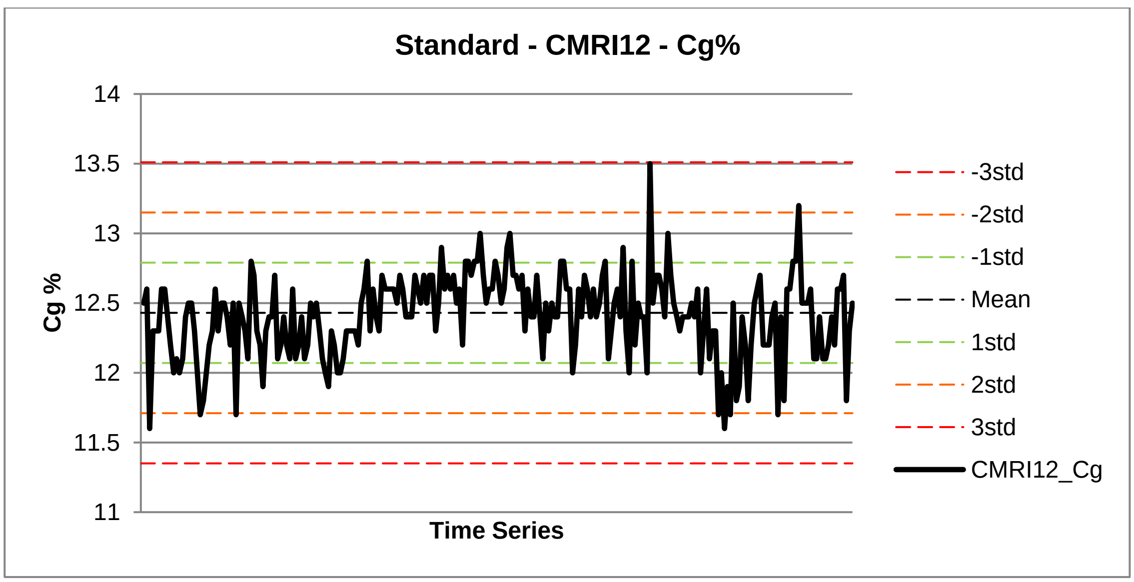
Figure 12.7 - CRM NCS DC 60121 - Stot%



Source: DRA, 2022

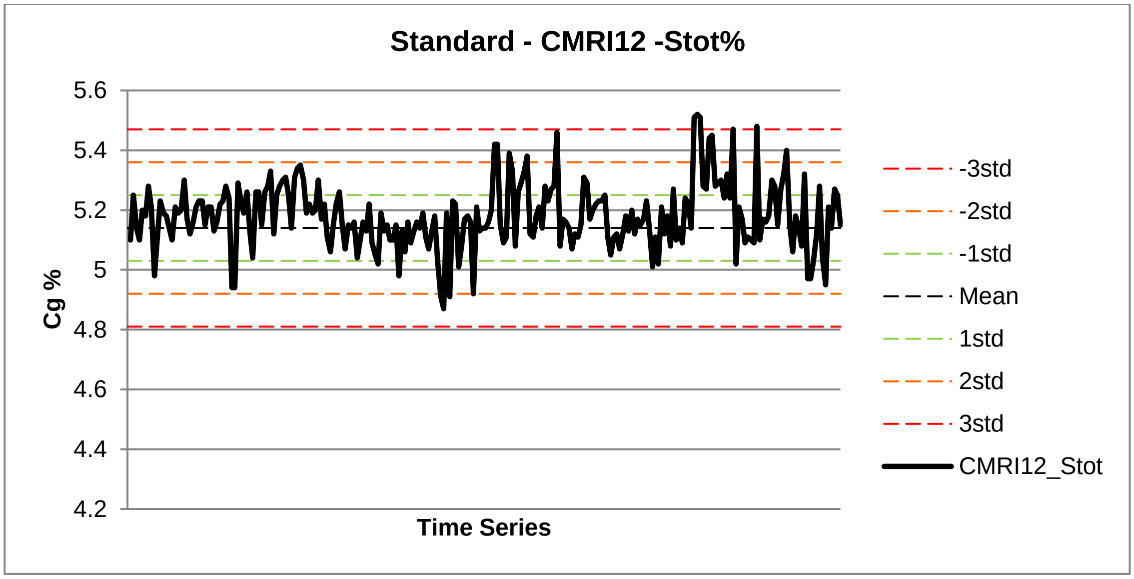
The Internal Reference Material, CMRI12, manufactured from pulp of the 2010 core samples, has a Graphitic Carbon mean of 12.4 % (Figure 12.8) and a Total Sulphur mean of 5.18 %. (Figure 12.9). Both figures indicate that the 605 replicates assay results from COREM and 121 replicate assays from ACTLAB are mostly within one standard deviation with minor spikes into the second standard deviation, rarely in the three (3) standard deviation range.

Figure 12.8 - CRMI12 Internal Standard - Cg %



Source: DRA, 2022

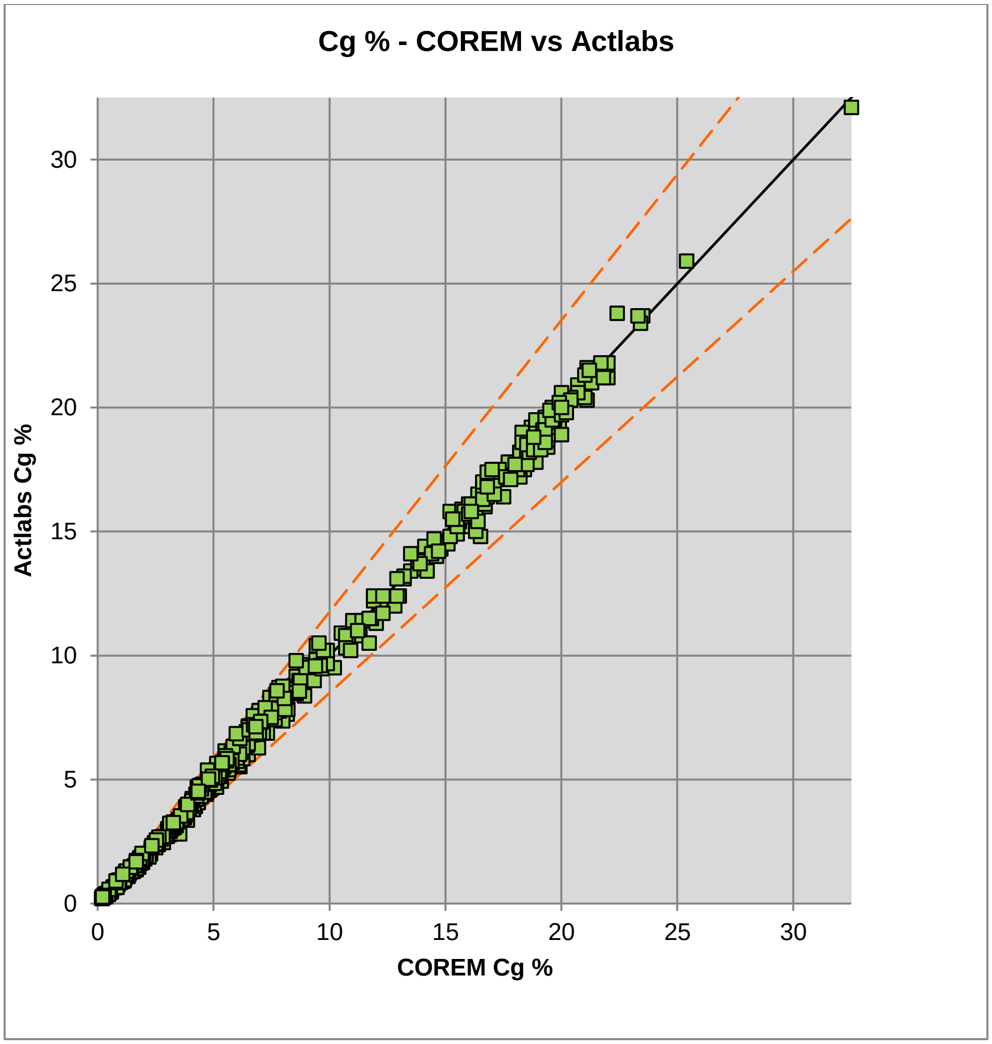
Figure 12.9 - CRMI12 Internal Standard – Stot%



Source: DRA, 2022

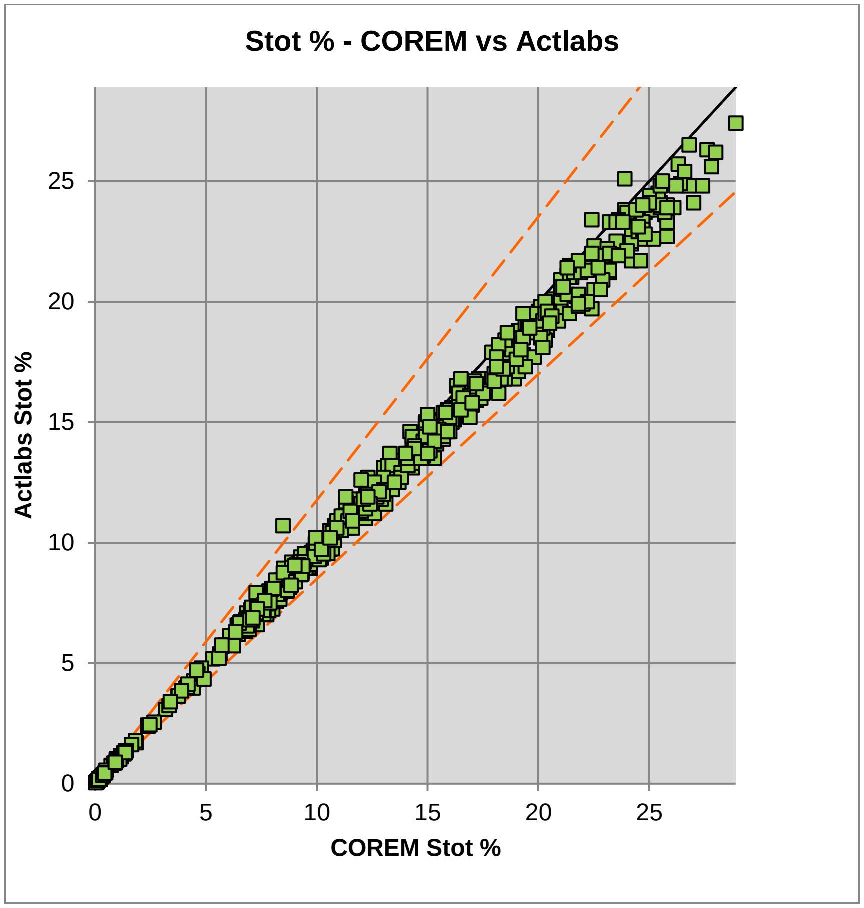
With no independent samples, DRA used the 623 duplicates from COREM (roughly 10%) that were sent to ACTLABS for check sampling. Figure 12.10 and Figure 12.11 show duplicates from various holes and from the various programs and best represent the entire assay population. The slopes of both the regression lines (45° line) indicate a high reproducibility between ACTLABS and COREM in both Cg % and Stot %.

Figure 12.10 - COREM vs Actlabs - Cg %



Source: DRA, 2022

Figure 12.11 - COREM vs Actlabs - Stot %



Source: DRA, 2022

This random spot check allowed DRA to better understand the sampling and assaying program put in place and to provide assurances that it is up to Canadian mining standards. No issues were reported by IOS and none were detected by the QP.

12.3 Conclusion

The QP is confident that the Project data and results are valid, based on the observations made during the site visit, discussions with the technical team on-site. Inspection of the work procedures shows that they have adhered to best practices and industry standards required by NI 43-101. The data verification process did not identify any material issues with the assay data and the results from the QC samples used to monitor the laboratories performance were successful in showing that the analytical results are sufficiently reliable to be used in the current resource estimation.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

This Section has been summarised and updated from the Report available on SEDAR entitled "NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study Québec – Canada" Met-Chem Project # 2013-064, issued on August 8, 2014, prepared for Focus Graphite Inc.

A FS was completed for the Project in 2014, supported by a test work program completed in 2013-2014 by SGS Canada Inc., in Lakefield, Ontario ("SGS"). The work completed by SGS included pilot plant test work on a sample from the Lac Knife deposit. Their results permitted SGS to develop a flow sheet comprised of two-stage grinding followed by mechanical flotation and polishing followed by column flotation. The flow sheet was capable of producing a final graphite concentrate greater than 99% total carbon in the +100-mesh size fraction and above 94% total carbon in the finer size fractions. Concentrates generated from the pilot test work were further used for additional testing at select equipment suppliers.

In 2023, an update to the FS was completed and was supported by two (2) additional metallurgical programs completed by SGS. The first set of additional testing was focused on the dewatering of the tailings to consider the addition of dry-stack tailings to the flow sheet. The second program was focused on upgrading trials for the finer graphite fractions with an objective of producing a higher-grade fine graphite product.

13.1 Historical Test Work Summary

Cambior and Mazarin performed a feasibility analysis on the Project in 1991. The metallurgical test work, both on a laboratory and pilot plant scale were performed at the Mineral Research Centre of the Ministry of Energy and Resources of Québec.

In 2002, a series of tests aimed at characterizing the ore and developing the flow diagram were completed.

During 2011 and 2012, Focus completed a series of metallurgical test work at SGS on composite samples extracted from different drilling areas and at various depths. The test work confirmed the good response of graphite to flotation with the inclusion of polishing using ceramic media facilitated improving graphite recovery by flotation. Results from the fine particles (-200 mesh) separation step followed by polishing are inconclusive. Overall, the results from the 23 laboratory tests and locked-cycle tests on various drill core samples were consistent and reproducible.

13.2 Bench Scale Test Work Program Supporting the Feasibility Study

In 2013 and 2014, SGS performed a metallurgical test work program on a composite sample from the Lac Knife deposit with the objective of developing a flow sheet that can produce saleable graphite concentrates of greater than 94% C(t), while minimizing graphite flake breakage and optimising overall graphite recovery. Test work was conducted in addition to head analysis and mineralogical characterisation of the sample. The results from the head analysis are presented in Table 13.1.

Table 13.1 – Head Analysis of Composite Sample

Assay (%)				
C(t)	C(g)	CO_3	S	Si
22.2	19.3	7.49	6.27	16.7

The total carbon and graphitic carbon content were 22.3% C(t) and 19.3% respectively. The balance of the carbon was found in both organic carbon and carbonates. A sulphur content of 6.27% S was analysed, flotation tailings may be acid generating. The high carbonate content may decrease the acid generating potential of the tailings, especially if the carbonates are present as calcite. The mineralogical study by QEMSCAN identified graphite (21%), sulphides (17.3%), quartz (19.9%), clinopyroxene (11.4%), plagioclase (8.8%), mica (6.8%), carbonates (5.7%), orthoclase (4.9%), other silicates (1.9%) and chlorite (1.4%) as major minerals in the sample.

Heavy liquid tests aimed at graphite pre-concentration prior to milling and flotation failed to produce good separation for the application of dense media separation (DMS). Based on the results from the test work for flow sheet development, the front end of the processing circuit revealed that a two-stage grind-float approach is suitable to recover 99% of the graphite units into a combined flash and rougher concentrate thus minimizing breakage of graphite flakes. Flotation reagents used were fuel oil #2 (diesel) as collector and methyl isobutyl carbinol (MIBC) as the frother.

A total of 18 batch cleaner tests were conducted to develop the cleaning circuit. The unit operations evaluated during the development of cleaning circuit were polishing with ceramic media, magnetic separation, and flotation in mechanical flotation cells. Column flotation was not evaluated due to the limited sample mass in the cleaning circuit. Two (2) locked-cycle tests (LCT), each comprising of six (6) cycles were performed to evaluate the flow sheet. The mass balance of the locked-cycle test 2 (LCT-2) is presented in Table 13.2.

Table 13.2 – Simplified Mass Balance of LCT-2

Sample Identification	Weight	Assay	Graphite Distribution
	(%)	(%) C(t)	(%)
Combined Concentrate	20.4	91.6	92.6
Combined Tailings	79.6	1.89	7.4
Head (calc)	100.0	20.3	100.0
Head (direct)		19.3	

A total of 92.6% of the graphite was recovered into the three (3) concentrate products at a combined concentrate grade of 91.6% C(t).

The size analysis of combined concentrate for the locked-cycle test (LCT-2) presented in Table 13.3 show that the coarser size fractions greater than 100-mesh have achieved target concentrate grade of greater than 94% C(t) and the +200-mesh fraction graded 93.2% C(t). The main reason for the lower concentrate grade for the -200-mesh fraction was attributed to the high level of impurities present in that fraction. The test work summary presented here is based on the metallurgical testing program described in SGS July 2013 Report.

Table 13.3 – Size Analysis of Combined Concentrate from LCT-2

Size fraction	Weight	Assay	Distribution
	(%)	(%) C(t)	(%)
+48 mesh	16.2	95.8	16.9
-48+65 mesh	13.9	94.8	14.3
-65+80 mesh	6.9	94.9	7.1
-80+100 mesh	7.1	94.6	7.3
-100+200 mesh	24.6	93.2	24.9
-200 mesh	31.4	86.5	29.6
Final Concentrate	**100.0**	**92.0**	**100.0**

13.3 Feasibility Study Pilot Plant Test Work Program

In 2013 and 2014, SGS completed a pilot plant test work program on two (2) composite samples to demonstrate the suitability of the proposed flow sheet from the lab-scale test work on a larger scale and continuous operation. A larger concentrate mass was produced for testing at select supplier companies for downstream processes such as concentrate thickening, filtration, drying and screening of the dried product.

Two (2) composite test samples tested were identified as the commissioning composite sample and the drill core composite sample. The pilot plant test results for the drill core composite sample produced comparable results obtained from the bench-scale tests on the variability composites, attesting the robustness of the proposed flow sheet for the Lac Knife deposit. The results from the pilot plant test number 16 (PP-16) were selected for the process design criteria. The combined concentrate grade for the pilot plant test PP-16 was 97.8% C(t) with a carbon recovery of 88.3%. The flake size distribution into the final concentrate shows that 33% of the mass reported to the +80-mesh size fraction at a concentrate grade greater than 99% C(t). In the medium flake range, -80+150 mesh, 31.4% of the concentrate mass reported at an average grade greater than 99% C(t). For the finer flake product, -150-mesh fraction, 35.7% of the concentrate mass reported with an average concentrate grade greater than 95% C(t).

13.3.1 Pilot Plant Operations Summary

Nineteen (19) pilot plant tests, PP-01 to PP-19, were conducted on two (2) bulk composite samples, weighing about 47 tonnes received from Lac Knife deposit. One (1) composite was supplied in super sacks consisted of a bulk sample that was intended for mechanical and metallurgical commissioning of the pilot plant due to the lack of available drill core. The second composite arrived in crates containing drill core and was supplied to generate the metallurgical process data once commissioning was completed. The bulk composite is referred to as the "Commissioning Composite" and the drill core sample as the "Drill Core Composite" in this Report.

Due to the complexity of the circuit, the pilot plant was commissioned in three (3) phases, allowing proper configuration of each part of the flow sheet.

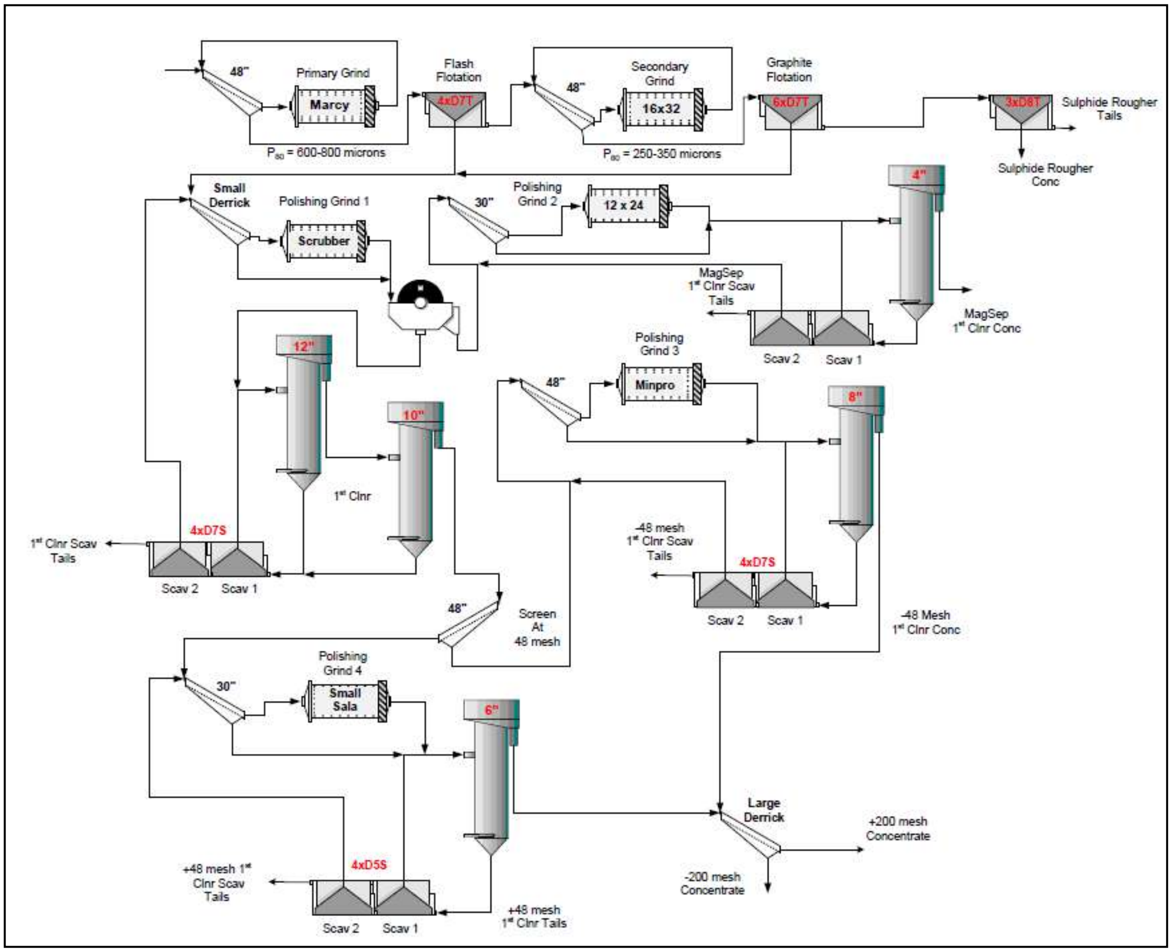
During the pilot plant test PP-01, phase 1 was commissioned and the flash and rougher graphite flotation circuits were operated to produce a combined flash and rougher concentrate for the processing of phase 2. Pilot plant test PP-02 focused on the operation of magnetic separation and the primary cleaning circuits. During the pilot plant test PP-03, the circuit was operated phase 1 and phase 2 together and generated additional feed for phase 3 of the pilot test operation. Phase 3 was the commissioning and operation of the pilot plant flow sheet at start-up presented in Figure 13.1. The phased commissioning approach proved successful with the mechanical commissioning of the entire flow sheet at the end of PP-05.

Test runs PP-06 to PP-11 processed the commissioning composite sample, generating concentrate for downstream testing and to optimise metallurgy, while test runs PP-12 to PP-19 processed the drill core composite sample for generating mass balance data for the development of the process design criteria.

In order to develop full circuit mass balances, a total of 40 streams were sampled five (5) times over the course of one-hour sampling period. Sizing and assaying were performed on various products. All products were assayed for carbon total, C(t) and the tailings streams with lower graphite content were assayed for carbon graphite, C(g). Mass balances were generated using data reconciliation software (BILMATTM). Grab assay samples were also collected at every hour from different product streams throughout the test campaign and the assay turnaround times were typically less than one (1) hour for rapid evaluation of performance. Size analysis of the primary and secondary grinding circuits and selected internal and product streams were performed to ensure the grind conditions were met and served as indicators of potential problems arising out of the pilot plant tests.

SGS recommended that the data collected from drill composite runs be used for process design criteria for the 2014 FS and Met-Chem had agreed with this statement.

Figure 13.1 – Lac Knife Pilot Plant Flow Sheet at Start-up



Source: SGS Canada Inc., Project 13330-003A — Final report dated April 23, 2014

13.3.2 Metallurgical Results

Two (2) batch cleaner flotation tests and one locked cycle test were performed before and during the pilot plant campaign.

The metallurgical response of the two (2) pilot plant composites outperformed the performance of the Master Composite that was used in the original flow sheet development program. A summary of the testwork result comparison is shown in Table 13.4.

Table 13.4 – Comparison of the Metallurgical Performance of Batch Cleaner Tests

Sample Identification	Product	Weight (%)	Assay (%)	Distribution (%)
Commissioning Composite	Combined Conc.	14.9	94.4	89.8
	Head Grade		15.7	
Drill Core Composite	Combined Conc.	9.56	98.3	87.6
	Head Grade		10.7	
Master Composite	Combined Conc.	15.1	94.9	70.0
	Head Grade		20.4	

The commissioning composite sample produced comparable graphite grades as the master composite sample with about 20% higher recovery. The recovery of the drill core sample was about 18% higher with 4% higher graphite grade than the master composite sample.

The average (BILMATTM™) adjusted head assay of the eight (8) pilot plant runs from PP-12 to PP-19 was 11.5% C(t). Test results of PP-15 and PP-17 were excluded from analysis since the tests were not operating under steady state conditions. The average concentrate grades of the pilot plant tests excluding PP-15 and PP-17 was 96.6% C(t) compared to 96.4% C(t) of the locked-cycle tests for the variability composites. This grade was achieved despite the fact that the -200-mesh fraction was not subjected to further cleaning during the pilot plant tests. The average grade of the size fractions greater than 200 mesh was 98.0% C(t) compared to the average grade of 97.2% C(t) from the locked-cycle tests.

Pilot plant test PP-16 results were used to develop the process design criteria for the 2014 FS based on its overall metallurgical performance. A summary of the mass balance is presented in Table 13.5.

Table 13.5 – Summary of Mass Balance of Pilot Plant Test PP-16

Product Stream	Weight (%)	Assay (%) C(t)	Distribution (%) C(t)
Primary Mill Screen U/S	100	12.2	100.0
+48 mesh Concentrate	3.4	98.6	27.6
-48 mesh Concentrate	7.6	97.4	60.6
Combined Concentrate	11.0	97.8	88.3
Combined Tails	89.0	1.60	11.7

The mass balance presented in Table 13.5 reveals that the test achieved an overall concentrate grade of 97.8% C(t) with a carbon recovery of 88.3%.

Table 13.6 shows that the concentrate grades greater than 99% C(t) were achieved for most of the size fractions except the finer size fractions of 200-mesh that achieved graphite grades of 98.4% C(t) and 93.3% C(t) respectively. The mass recovery of flakes into the coarser fractions, +80-mesh was 33% for the test.

Table 13.6 – Size by Size Analysis of Final Graphite Concentrate (PP-16)

Product Stream	Weight (%)	Grade C(t) (%)
+48 mesh	10.0	99.7
-48+65 mesh	14.5	99.6
-65+80 mesh	8.5	99.8
-80+100 mesh	11.0	99.7
-100+150 mesh	20.4	99.3
-150+200 mesh	17.1	98.4
-200 mesh	18.6	93.3
Total (Calculated)	100.0	98.2
Total Direct Assay		97.8

Based on the pilot plant results, a revised flow sheet was proposed. The revised flow sheet presented in Figure 13.2 is used for process design criteria for the 2014 FS. The main differences in the revised flow sheet compared to the flow sheet proposed for the pilot test work are:

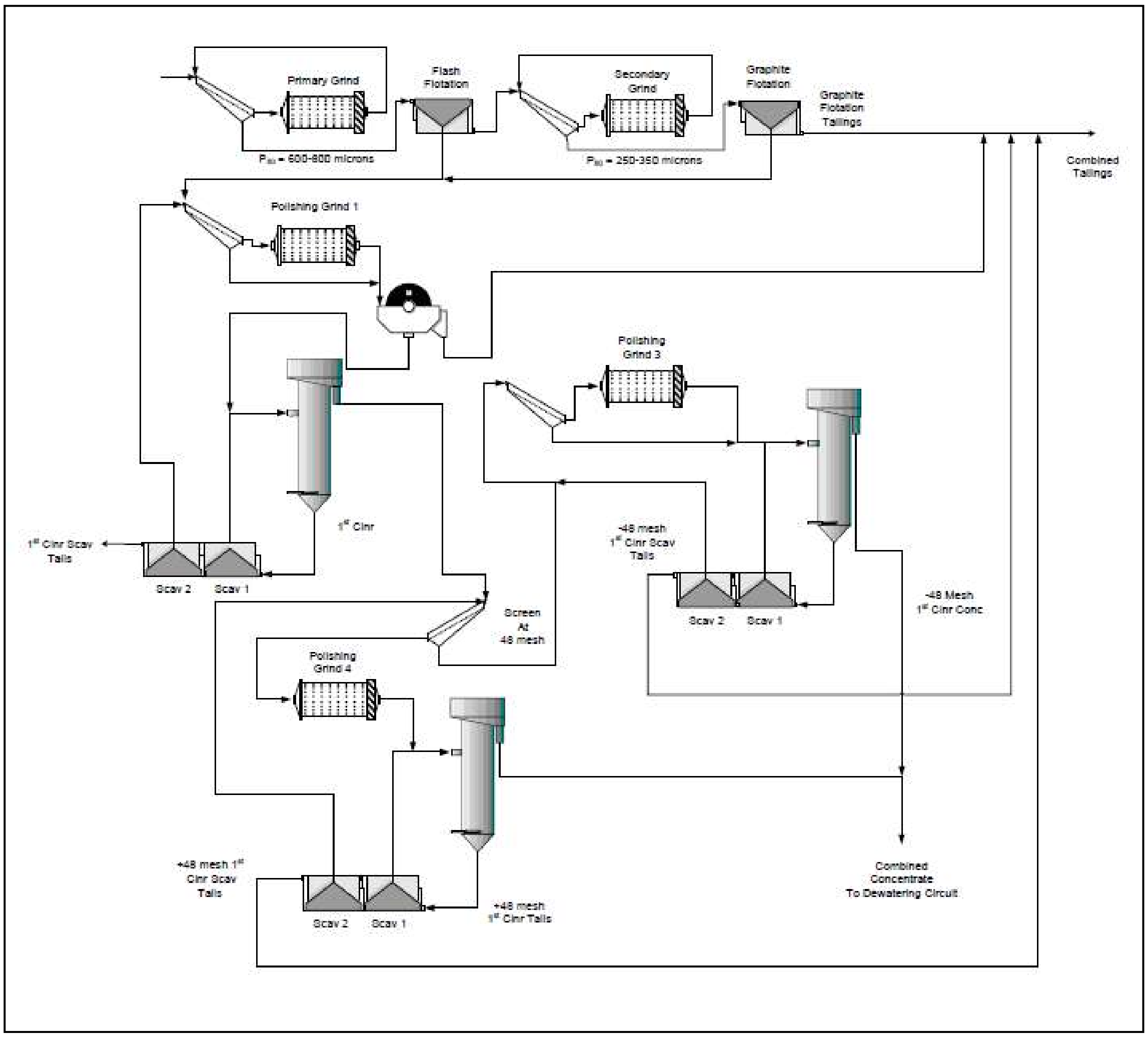
a. The sulphide circuit was removed as it was not effective in producing non-acid generation tailings.

b. A single stage column cleaning after primary polishing proved sufficient for achieving acceptable grades for the combined flash and rougher concentrate prior to sizing at 48 mesh and subsequent secondary cleaning.

c. The magnetic concentrate cleaning flotation circuit was eliminated as the amount of magnetic concentrate was small and the cleaner concentrate grade achieved was low.

d. The separate cleaning circuit for the -200-mesh size fraction has been eliminated, as the immediate financial benefit was not obvious.

Figure 13.2 – Proposed Revised Flow Sheet



Source: SGS Canada Inc., Project 13330-003A — Final report dated April 23, 2014

13.4 Additional Testing for Feasibility Study Update

In addition to the piloting work performed for this FSU, concentrate thickening, filtration, drying, and screening testing was performed to support the design of the concentrate dewatering and screening circuits.

13.4.1 Concentrate Thickening

Two (2) suppliers conducted graphite concentrate thickening test work.

Test #1. Static settling and dynamic tests were done to evaluate the most effective flocculant. Percol-E10 was selected for sizing the thickener. Based on a solids loading rate of 0.196 $m^2/t/d$, the selected high capacity thickener can produce an underflow with contents of greater than 38% solids and an overflow containing less than 100 ppm solids using a flocculant dosage of 16 g/t.

Test #2. A second set of static and dynamic thickening tests were done with the flocculant MF-351. The test work indicated solids loading rate of 0.05-0.25 t/m^2h and a rise rate of 0.60-2.98 m/h. At flocculant dosage of 2-20 g/t, the thickener underflow density between 36 to 40% solids was achievable with overflow clarity of 50-150 ppm total suspended solids.

Both test work produced sizing criteria that would suggest a thickener of similar size.

13.4.2 Concentrate Filtration

One (1) supplier performed pressure filtration tests. The filtration tests were conducted on a graphite concentrate sample provided by SGS. The results from the test work indicate that cake moisture content between 13-18% with cake thickness of 31-53 mm can be achieved at filtration rates of 183 to 423 kg/m^2h. The test work evaluated filter cloth selection, filter cake thickness, filtration rate, cake moisture content and cake handling characteristics for achieving less than 15% w/w moisture for the filter cake.

13.4.3 Concentrate Drying

Several suppliers performed drying test work on graphite concentrate to determine the most effective and efficient method of drying.

The graphite concentrate samples produced by SGS during pilot plant test work ranging 45% to 50% solids required filtration to a solid content of 60% to 65% prior to dryer test work at the different dryer suppliers. All dryers produced a small number of aggregates or balls. The balls were formed as wet very fine graphite rolled over slightly bigger pieces and then stuck to the larger graphite particles. The balling or aggregate formation varied between the dryer types. The aggregates were fragile and most failed during material handling.

The test work using a small a rotary vertical tray dryer was able to achieve moisture contents of less than 0.5%, while producing very few aggregates during the drying process.

The twin screw dryer test work was able to achieve a moisture content of 0.5%, however it did produce aggregates during the drying process. The rotary dryer test work was able to achieve a moisture content of less than 0.5%, however produced aggregates during the drying process. The fluid bed dryer test work failed to produce results.

13.4.4 Dry Graphite Screening

Dry screening test work was done to determine the model and number of screens for making 48-mesh, 80-mesh, 100-mesh, 200-mesh and 325-mesh separations. Screening tests were performed on two (2) samples delivered from the dryer test work. The screening tests indicated that each vibratory screen could produce clean products at a rate of about 1 t/h. This was maintained as a base case assumption but was revised in the FSU where vibratory sifting boxes were adopted for the design.

13.5 Tailings Dewatering Test Work Program (2021 – 2022)

The tailings dewatering test work program comprised of four (4) tests including flocculant scoping and static settling, rheology, vacuum filtration, and pressure filtration.

13.5.1 Flocculant Scoping and Static Settling

The flocculant scoping test consisted of evaluating the performance of various types of flocculants, where Magnafloc 333, a very high molecular weight non-ionic polyacrylamide flocculant, resulted in the best response.

The two-stage static settling tests were done to examine the settling rate and the underflow clarity following solid-liquid separation. Originally, the settling experiment was composed of static settling followed by dynamic settling. However, the mechanical failure of the testing equipment required the replacement of the dynamic test with a static test.

The best results were achieved using a dosage of 12 g/t Magnafloc 333. This test produced an underflow with 65% solids by weight and an overflow clarity of 19 mg/L total suspended solids (TSS). The hydraulic and solids loadings were 488 $m^3/m^2/d$ and 0.09 $m^2/t/d$, respectively.

Due to the mechanical issues with the testing, the static test results have been used as input to thickener sizing for the FSU. Future dynamic thickening work is recommended in the next project phase.

13.5.2 Underflow Rheology

Four (4) concentric cylinder rotational viscometry (CCRV) rheology tests were performed on samples ranging from 59.0% to 66.5% solids by weight and three (3) vane rheology tests were conducted on samples ranging from 68.0% to 72.3% w/w solids by weight. Based on these tests, the critical solids density (CSD) and yield stress under unsheared sample conditions of the tailings were found to be approximately 68% w/w solids and 54 Pa, respectively.

13.5.3 Tailings Vacuum Filtration

Vacuum filtration tests were performed on tailings samples having been thickened to 67% w/w solids with a vacuum level of 0.68 bar. The results from the test work indicate that cake moisture content between 15.5-27.7% with cake thickness of 19-51 mm can be achieved at filtration rates of 648 to 5,631 kg/m^{2}h.

13.5.4 Tailings Pressure Filtration

Pressure filtration tests were performed on tailings sample having been thickened to 67% w/w solids using a filtration pressure of 5.5 bar. The results from the test work indicate that cake moisture content between 13.2-15.6% with cake thickness of 20-35 mm can be achieved at filtration rates of 3,488 to 4,302 kg/m^{2}h. Based on these results, pressure filtration of the tailings was selected as the preferred technology for filtration prior to dry stacking.

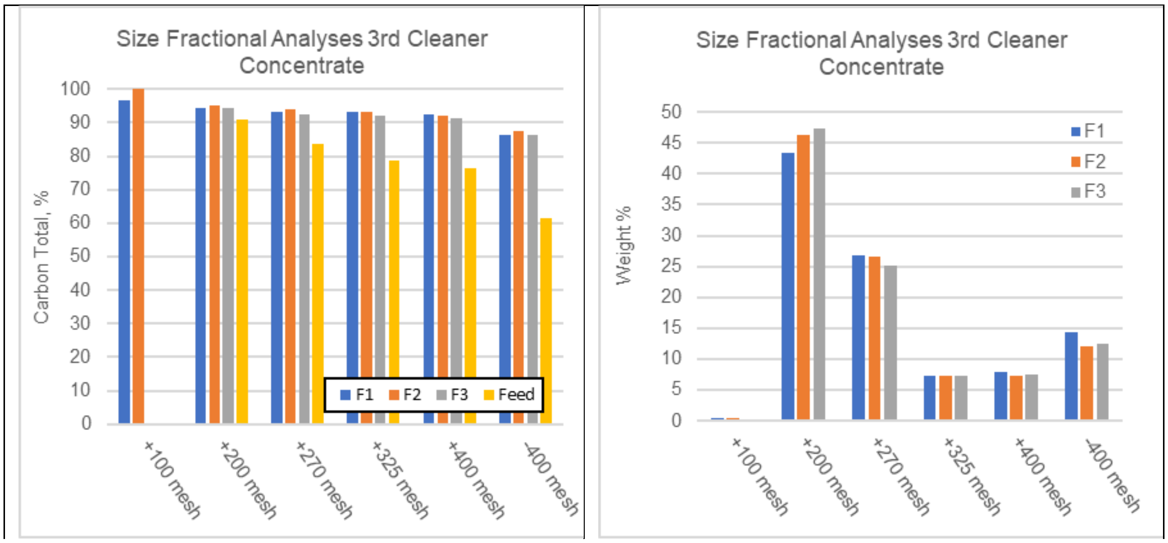
13.6 Concentrate Upgrading Test Work Program (2021 – 2022)

Graphite concentrate (-48 mesh) from the 2014 pilot plant was sent to SGS for concentrate upgrading tests. The graphite was screened at 150 um and was subjected to a series of upgrading tests to evaluate the potential of using stirred media grinding to improve the total carbon grade of the graphite concentrate,

Three (3) tests were performed (F1, F2, and F3) where the duration in the stirred media polishing mill varied between 5, 10, and 15 minutes, respectively. The flotation products were submitted for carbon assays on individual size fractions. The final concentrate grades and size fraction distributions are shown in the figures below. Some +100-mesh fractions contained insufficient masses for assaying due to the feed preparation method for these tests. Ultimately, no significant upgrading of -400-mesh material was shown to be possible as the grades were between 86.4 and 87.5 % C(t).

The tests perform did not result in an improvement of total carbon grade in the graphite concentrate and therefore the overall graphite production remains based on PP-16 from the 2014 pilot plant. The size fractional analysis of the -200-mesh material was used to infer the breakdown of -200+400-mesh material and -400-mesh material from the 2014 pilot plant testing as indicated in Table 13.7. It was noted that the -400-mesh material, or ultrafine graphite, currently does not have a market. It was therefore recommended to remove this fraction by desliming and sending it to tailings rather than including them in the fine graphite concentrate and decrease the overall grade of the -200-mesh material.

Figure 13.3 – Size Fractional Analysis of the 3rd Cleaner Concentrates



Concentrate Upgrading Tests Showing Assays

Distribution

Source: SGS Canada Inc., Project 18797-01 — Final report dated November 28, 2022

Table 13.7 – Size by Size Analysis of Final Graphite Concentrate (PP-16), with Inferred -400 Mesh Fraction

Concentrate Size Fraction	Weight (%)	Grade C(t) %
+48 mesh	10.0	99.7
-48+65 mesh	14.5	99.6
-65+80 mesh	8.5	99.8
-80+100 mesh	11.0	99.7
-100+150 mesh	20.4	99.3
-150+200 mesh	17.1	98.4
-200+400 mesh*	14.1	95.3
-400 mesh*	4.4	86.8
Total (Calculated)	**100.0**	**98.2**
Total Direct Assay		**97.8**

*Note:
The -200+400 mesh and -400 mesh fraction has been inferred based on PP-16 and the fines upgrading test work performed in 2021. The PP-16 -200 mesh material represent 18.6% of the weight with 93.3 C(t)%.

14 MINERAL RESOURCE ESTIMATE

DRA completed a Mineral Resource Estimate (MRE) update for the Lac Knife Project located in Québec, Canada. The Project is located in the Esmanville Township, at approximately 45 km driving distance from the town of Fermont.

This updated MRE follows infill and exploration drilling completed on the Project since the Feasibility Study (FS) lodged in 2014. A total of seventy-five (75) holes, with a cumulative length of 11,204 m, were drilled between 2014 and 2018 since the effective date of the MRE which served as the basis to support the FS released on August 8, 2014.

14.1 Definitions

According to the May 10, 2014, version of CIM Definition Standards and the November 29, 2019 CIM MRMR Best Practice Guidelines:

- A ***Mineral Resource*** is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.
- An *Inferred Mineral Resource* is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.
- An *Indicated Mineral Resource* is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.
- A *Measured Mineral Resource* is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade

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

14.2 Data Supplied

The drill hole database was supplied to DRA by IOS Services Géoscientifiques (IOS) on February 8.2022. IOS is responsible, on behalf of Focus, for conducting exploration activities on the Lac Knife Project. The drill hole database consists of Excel files for collars, surveys, assays, lithologies, density and structure extracted from the main Access project database managed by IOS. After having reviewed the initially received drill hole database, DRA recommended complementary sampling to fill gaps inside mineralised zones and cover the borders of the mineralised envelopes. This was to help in the modelling process, considering the structural complexity of the Lac Knife Deposit.

The results of the complementary resampling program were received on February 8, 2022 and this date constitutes the effective date of the MRE.

14.3 Mineral Resource Estimation Procedure

The Lac Knife Project MRE includes the following procedures and steps:

- Validation of the drillhole database directly in the Excel files.
- Drillhole database importation into MS Torque, a SQL based database manager integrated into HxGN MinePlan 3D and further validation process.
- Request for a complementary sampling campaign to fill some sampling gaps within mineralised zones and help guide the modelling approach given the structural complexity of the Lac Knife deposit. The complementary sampling program also aimed to sample the borders of the mineralised zones to better help in the modelling and mine planning.
- Creation of 2D based sectional interpretation of grade zones using a rough 3% Cg COG to discriminate between mineralised and un-mineralised zones at the envelope limits.
- Construction of a 3D wireframe for each mineralised domain by joining 2D polygons digitised in 2D sections.
- Modelling of the Overburden surface.
- Exploratory Data Analysis for grade samples constrained within each mineralised envelope for assessing its statistical parameters.
- Statistical analysis of sampling length to determine the suitable length for compositing.
- Statistical analysis of bulk density data.

- Geostatistical analysis of Cg% grades to assess the spatial continuity to guide the selection of interpolation parameters.
- Generation of a block model covering the estimation domain and having a block size of 5 m × 5 m × 5 m respectively in the X, Y, and Z directions.
- Setup of interpolation parameters.
- Grades interpolation of Cg% using the Inverse Distance Squared (IDW2) approach.
- Interpolation of density using available density measurement data and based on IDW2.
- Validation of the MRE using 2D and 3D visual inspection and comparison, appreciation of descriptive statistics between assays, composites, and blocks grades and generation of swath plots.
- Generation of an optimised pit shell, using the Pseudoflow algorithm, to constrain part of the mineralisation demonstrating potential economic viability.
- Classification of the Mineral Resource according to CIM Standards.
- Reporting of Mineral Resource Estimate and final statement.

14.4 Drill Hole Database and Data Verification

14.4.1 Drill Hole Database

The initial drill hole database was supplied to DRA in Excel files for collars, surveys, assays, lithologies, structure and density exported from the main Access database built and managed IOS on February 8, 2022. Received files were reviewed to check for inconsistencies prior to importing them into MS Torque, HxGN MinePlan™ 3D's SQL-based database manager. Only a few errors were found and subsequently corrected.

Sampling gaps within mineralised zones were noted for some of the drill holes drilled during the 2014 and 2018 drilling campaigns. Additionally, instances where sampling stopped abruptly at the envelope ends with high Cg% rendering shoulder and dilution modelling more complicated, were also noted. A complementary sampling program was recommended to fill sampling gaps and better help the MRE.

Only Cg% was interpolated since sulphur was not sufficiently assayed. The breakdown of the drill hole statistics in the database by drilling campaign is presented in Table 14.1. A summary of items imported in the MRE drill hole database is presented in Table 14.2.

Table 14.1 – Database Statistics

Year	Drilling Type	Nº. of Holes	Drilled Length (m)	Assayed Length for Cg% (m)	Nº. of Cg% Samples	Assayed Length for S% (m)	Nº. of S% Samples
1989	DDH (BQ-Size)	99	7,670	4,251	2,791	625	272
2010	DDH (NQ-Size)	12	1,234	937	634	937	634
2012	DDH (NQ and PQ-Size)	69	7,312	3,554	2,689	3,554	2,689
2013	DDH (NQ and PQ-Size)	53	5,902	2,287	1,777	2,287	1,777
2014	DDH (NQ-Size)	65	8,072	3,253	2,973	3,253	2,973
2018	DDH (HQ-Size)	10	3,132	565	391	564	391
	TOTAL	**308**	**33,322**	**14,847**	**11,255**	**11,220**	**8,736**

Table 14.2 – Attributes Items Present in the Drill Hole Database

File	Field
Collar	Hole ID, Easting, Northing, Elev, Azimuth, Dip, Depth
Surveys	Hole ID, Depth, Azimuth, Dip, TypeDeviation
Litho	Hole ID, From, To, Resume, Litho, LCODE, Titre
Structure	Hole ID, From To, Str-Resume, Str-Desc, CoreAngle, Str_Titre
Assays	Hole ID, From, To, Sample_ID, Cg%, S%

14.4.2 DATA VERIFICATION

The following steps were performed to verify soundness of the drill hole database provided by IOS:

- Location and elevation discrepancies and unusual values.
- Minimum and maximum values for each quality element to ensure that all values were within acceptable limits.
- Inconsistencies in the lithological units and overlaps in the lithology and assay intervals.
- Gaps in the lithology code intervals.
- Repeated intervals/samples.

This first validation step was performed in the Excel files provided by IOS prior to importing the data into MS Torque. A further validation process was completed in MS Torque. Only a few errors were found and corrected.

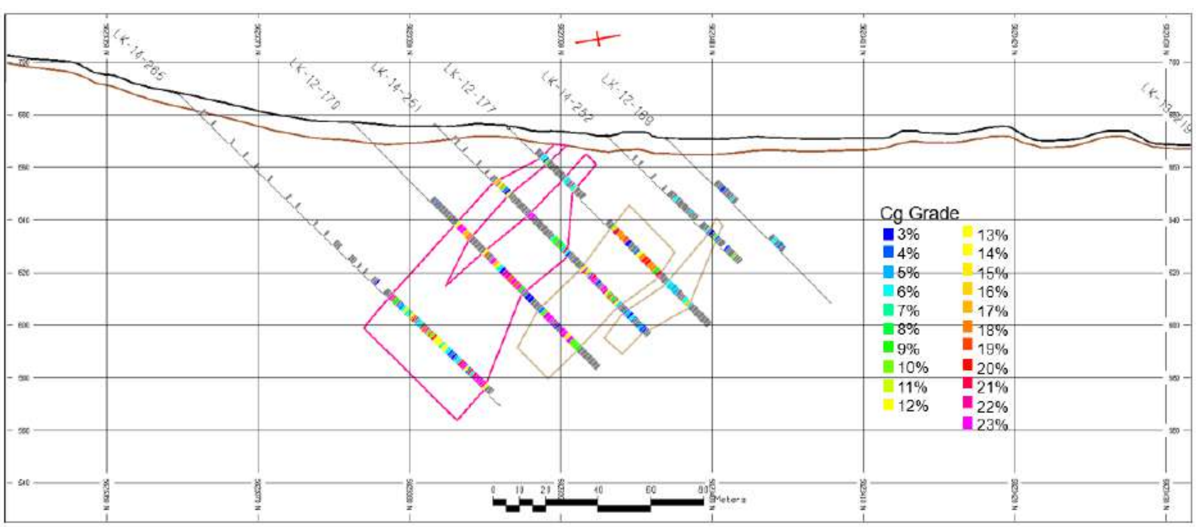
14.5 Interpretations and Geological Modelling Procedures

The historical geological solids, such as defined for the FS, were transferred to DRA in DXF formats and were imported into HxGN MinePlan™. The initial objective was just to update them, assuming little changes, by incorporating the results of the more recent drilling campaigns of 2014 and 2018. However, the incorporation of the results of the 2014 and 2018 drilling campaigns highlighted structural complexities in the orebody, leading to the need to redo the geological interpretation on a sectional basis prior to the construction of new grades and geological 3D envelopes.

Geological and grade interpretation and modelling started with the generation of 2D vertical cross sections covering all drilled areas. Polygons were digitised on the vertical cross sections based on both geology and grades.

Essentially, the grade profile typically shows a reduction in grade near the contact between the graphitic gneiss, which represents the most graphite hosting horizon, and the quartzofeldspathic gneiss. The grade-based contact delineating the mineralization zones generally follow this lithological contact with exception to some intervals close to the boundaries described as quartzofeldpsathic but having returned Cg% of economical interest or also some other intervals described as graphitic gneiss but having returned poor Cg%. A rough boundary threshold cut-off of 3% Cg has been used as guidelines to discriminate between mineralisation of economical interest and waste. Figure 14.1 depicts a typical cross section with polygons digitised in 2D.

Figure 14.1 – Typical Cross Section (Section 3+00)



Source: DRA, 2022

Most of the Cg% concentration of economic interest is hosted within a graphitic paragneiss. The polygons defining the limits of the mineralisation were drawn using a rough contact cut-off of 3% Cg as guideline, which is different from the MRE results statement cut-off. Internal zones of lower grades (less than 3% Cg) but located within mineralised zones, were kept as they are, and diluted with neighbouring higher-grade intersections during the compositing process for sampling length regularization.

Given the structural complexity and the metamorphic nature of the Lac Knife Deposit, isolated small intervals with high Cg grades occurred sporadically in some areas with no possibility to connect them to other holes on the same 2D section or to connect them with neighbouring 2D sections and generate 3D solids. Such intervals were simply ignored in this MRE.

The supplied topographic surface originates from a Light Detection and Ranging (LIDAR) survey of the entire Lac Knife property. The helicopter-supported survey was carried out in 2012 by Mosaic 3D of La-Peche, Québec and the deliverables included a high resolution geo-referenced LIDAR image, an ASCII database of XYZ elevation points, a geo-referenced air photo mosaic, and a geo-referenced topographic contour map in digital format.

An overburden surface model was developed by DRA based on the combination of the LIDAR topographical surface and overburden thicknesses intersected in drill holes. In this modelling process, the topographical surface was gridded into small cells and the resulting gridded surface was lowered, where each cell is moved downward proportionally to the overburden thicknesses intersected in drill holes located in the vicinity. The resulting overburden surface is thought to better reflect the reality of the ground condition than simply triangulating a surface using the contact points in drill holes between the base of the overburden and the fresh rock.

A total of nine (9) mineralised envelopes were defined during the modelling, of which two (2) appear to be the biggest volumetric contributors (Solids 2 and 6) and present better spatial continuity. All solids present azimuth orientations varying roughly between 330º and 360º and dipping to the west, except one (1) solid which appears to be dipping to the east.

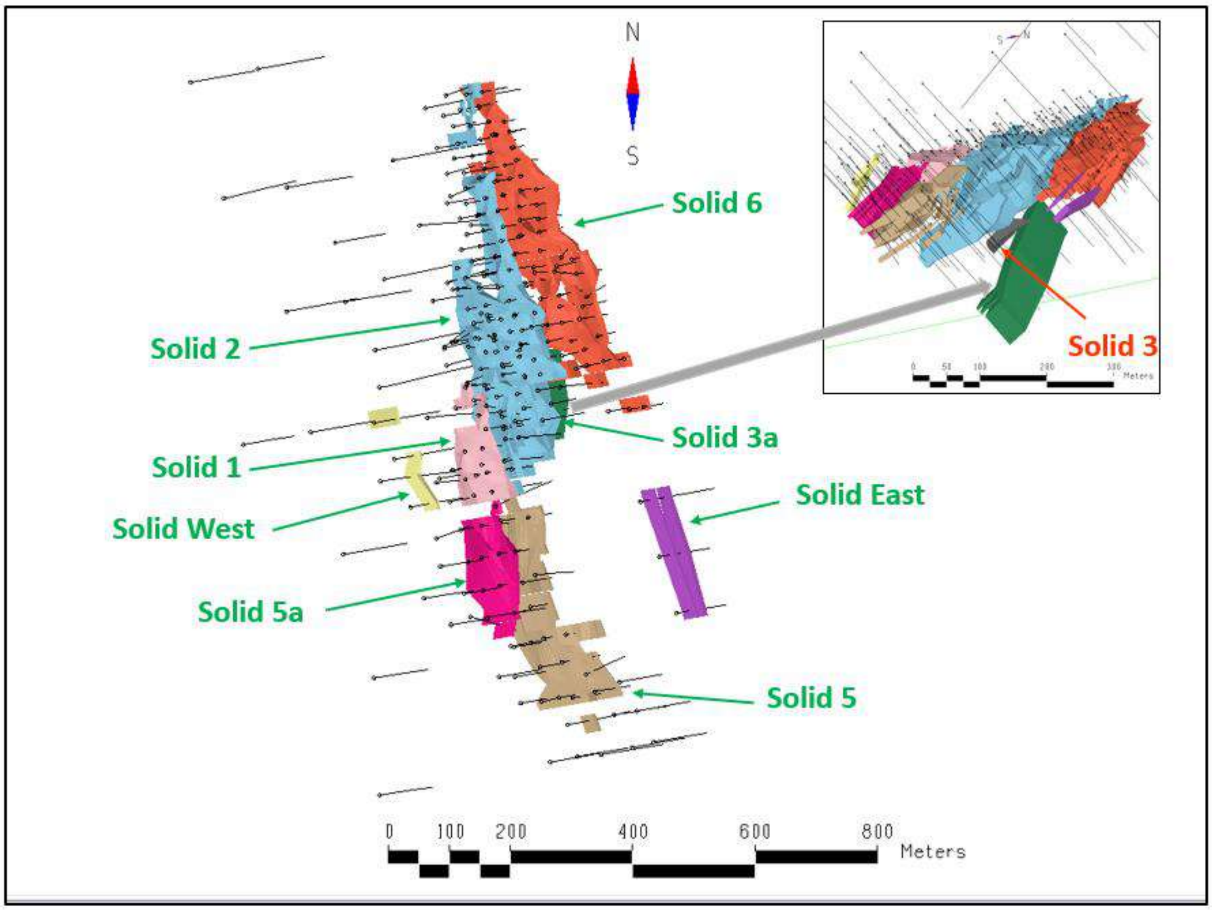
The modelled 3D solids were clipped to the overburden surface, resulting in the 3D final resource solids (Figure 14.2). Table 14.3 presents the volume associated to each modelled mineralised solid.

Table 14.3 – Volume of the Mineralised Solids

Solid	Volume (*1,000 m^3)
Solid 1	251
Solid 2	1,951
Solid 3	21
Solid 3a	305
Solid 5	729
Solid 5a	411

Solid	Volume (*1,000 m^3)
Solid 6	1,172
Solid Zone West	43
Solid Zone East	84

Figure 14.2 – Main Mineralised Geological Solids



Source: DRA, 2022

14.6 Exploratory Data Analysis

Exploratory data analysis (EDA) is the process of characterising the statistical behaviours of a sample population, or two (2) or more different sample populations, using tools such as descriptive statistics, histograms and cumulative frequency curves, probability plots, scatter plots, etc. For the current MRE, the grade solids were used to code the samples located within each solid. Descriptive statistics were generated for these in-solid constrained assays and are presented in Table 14.4. The larger solids (Solid 2 and Solid 6) present, respectively, a Cg length weighted average of 14.7%

and 16.95% with a lower coefficient of variation (COV) in Solid 6. Solid 5 is the third in terms of size and presents a Cg length weighted average of 14.2% while the average for Solid 5a is 14.16%.

Table 14.4 – Summary Descriptive Statistics for Cg% by Mineralised Solid

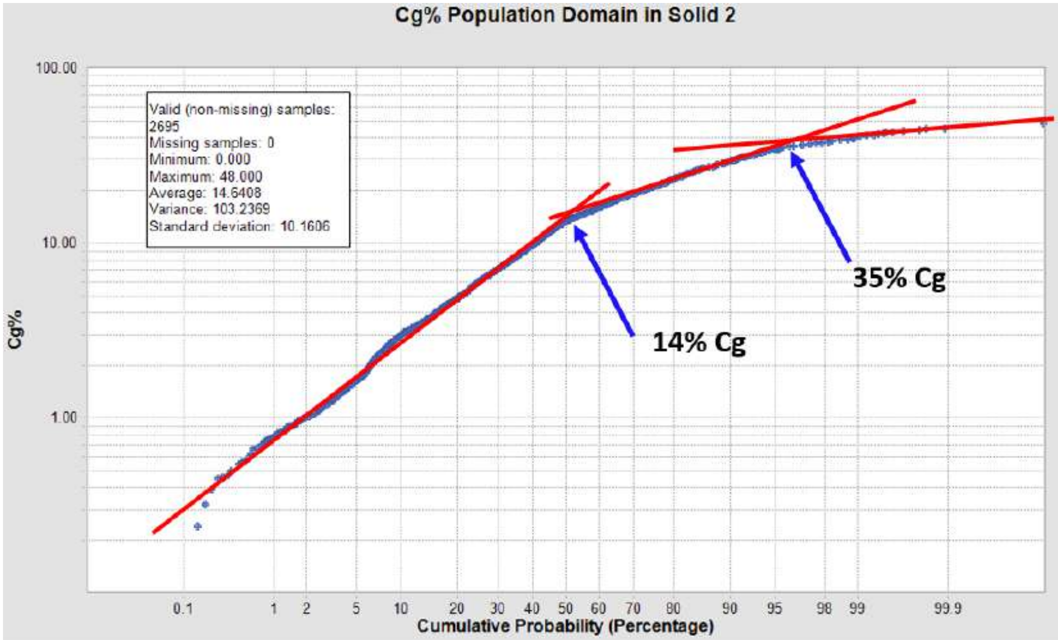
Description	Arith. Mean	W. Mean	Median	Mode	St. Dev.	COV	Min	Max	Count
Solid 1	13.24	13.23	13.70	19.40	6.78	0.51	0.00	29.00	369
Solid 2	14.64	14.73	13.34	15.20	10.16	0.69	0.00	48.00	2695
Solid 3	9.28	8.15	6.71	1.72	8.95	0.96	1.72	33.40	22
Solid 3a	17.68	17.63	17.00	16.20	5.98	0.34	0.84	37.80	142
Solid 5	14.72	14.73	15.20	17.00	9.78	0.66	0.00	41.60	618
Solid 5a	14.13	14.29	15.25	19.00	8.07	0.57	0.10	32.70	298
Solid 6	16.80	16.95	16.90	17.90	8.89	0.53	0.00	53.15	1749
Solid Zone West	8.29	8.16	7.17	6.64	5.11	0.62	0.36	17.50	36
Solid Zone East	10.30	10.33	7.43	-	7.26	0.70	0.44	24.00	31

Histograms and Cumulative Probability Plots (CPP) were then generated for the main volumetric solids (Solids 2, 5, and 6) to assess the different statistical populations present (Figure 14.3 to Figure 14.8).

Three (3) main different Cg populations can be distinguished in Solid 2's CPP with two (2) break points at about 14% and 28%. With a less pronounced signature, these three statistical populations can also be observed on the related histogram. For Solid 5, one can distinguish two (2) statistical populations on the Cg% CPP. The break dividing these populations is situated at about 12% Cg. Again, with a less pronounced signature, both statistical populations can be observed on the related histogram. For Solid 6, one can also distinguish two (2) statistical populations on the Cg% CPP. The break dividing these populations is situated at about 12% Cg. As with the other solids, the two statistical populations inside this solid can be observed on the histogram.

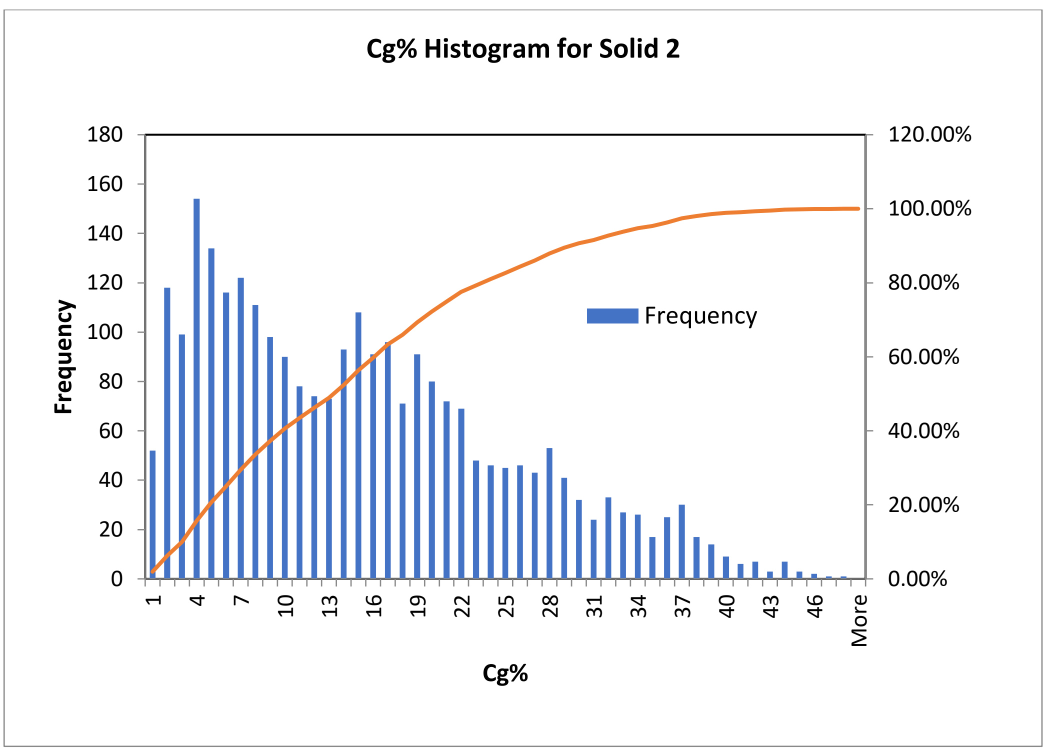
For each of these three (3) solids, it has not been possible to segregate the internal sub-populations within each solid during the modelling process.

Figure 14.3 – Cg% Cumulative Probability Plot for Solid 2



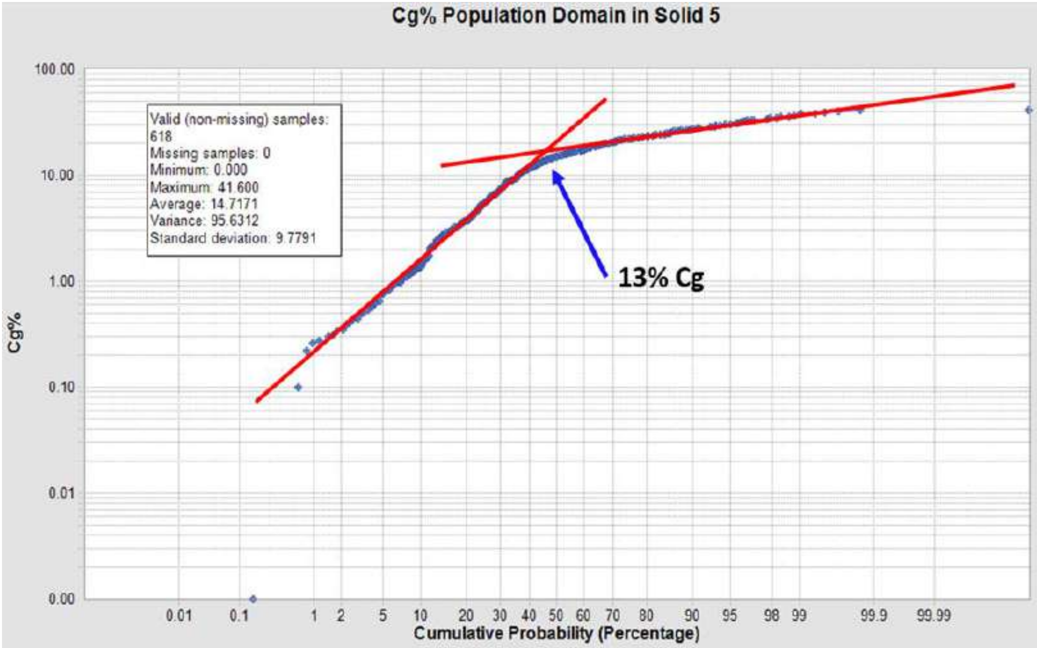
Source: DRA (2022)

Figure 14.4 – Cg% Histogram for Solid 2



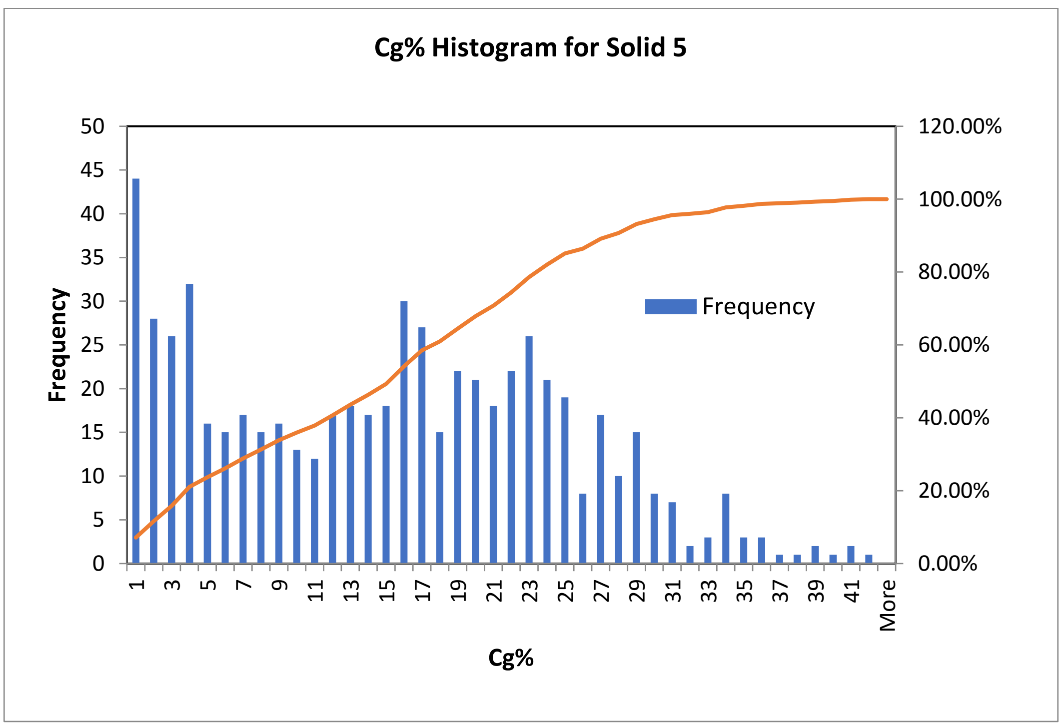
Source: DRA (2022)

Figure 14.5 – Cg% Cumulative Probability Plot for Solid 5



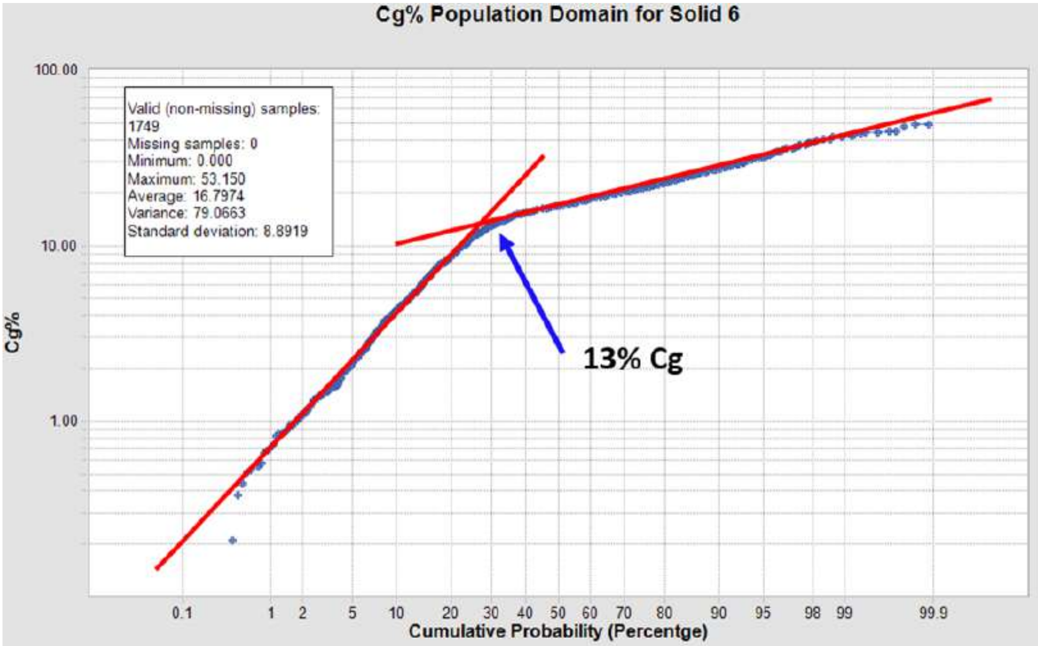
Source: DRA (2022)

Figure 14.6 – Cg% Histogram for Solid 5



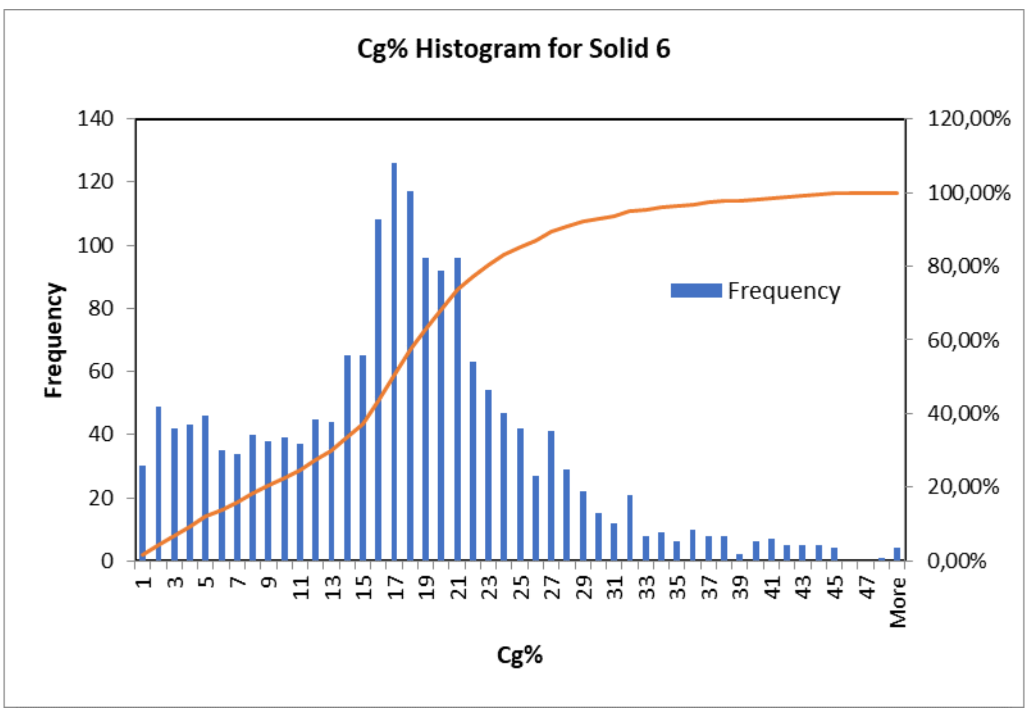
Source: DRA (2022)

Figure 14.7 – Cg% Cumulative Probability Plot for Solid 6



Source: DRA (2022)

Figure 14.8 – Cg% Histogram for Solid 6



Source: DRA (2022)

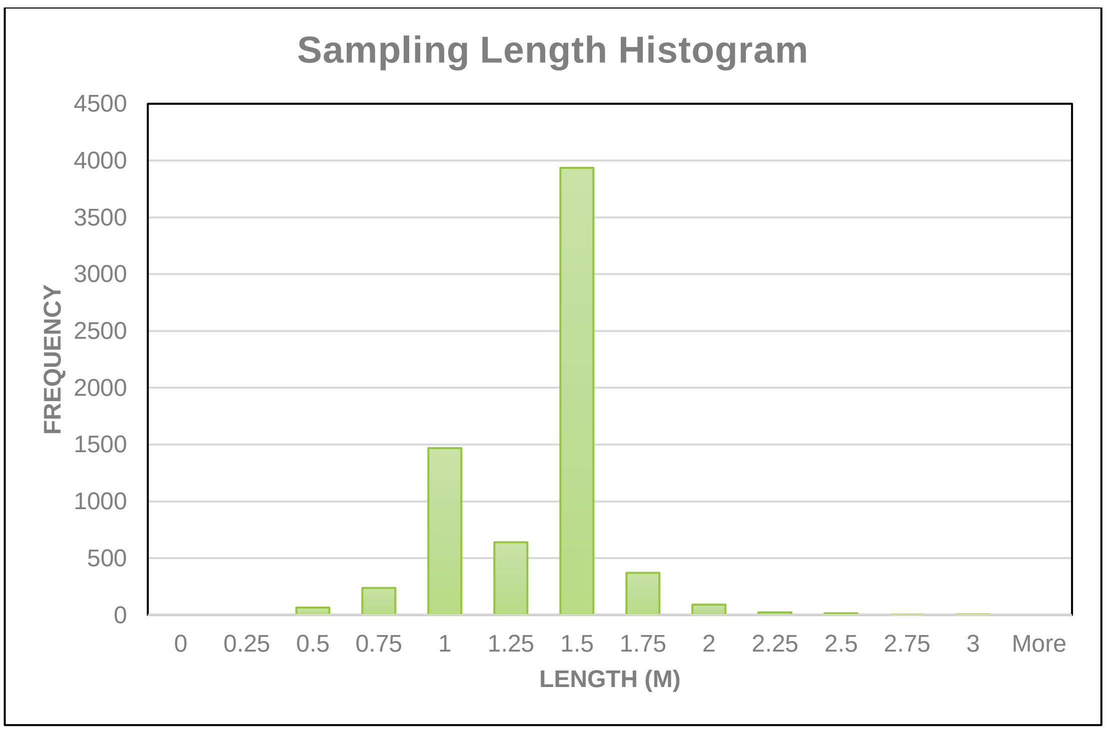
14.7 Grade Capping

Grade capping is an approach traditionally applied in a MRE to reduce the impact of extreme values (outliers) that can contribute to the overestimation of the content of the mineral of interest and lead to biased results. In such cases, individual samples would unduly influence the values of surrounding model cells. A review of the Cg% CPP and histograms for assays constrained within the different resource solids do not show any particular population related to outliers; therefore, grade capping was not applied prior to compositing.

14.8 Compositing

Compositing is a length-weighted regularisation process of grades with the objective of giving an identical weight to all samples and avoid introducing a bias due to length support differences. The selection of the regularization length is based on a statistical analysis of the sampling length. A sampling length histogram was generated for resource estimate mineralised zones and presented in Figure 14.9. A successful compositing approach should be an aggregation process rather than a disaggregation process. An aggregation process avoids splitting too many samples into small length intervals with repeated grade values, which does not reflect the actual grade variability of the mineralisation. The histogram shows 1.5 m, with about 3,500 samples at this length, as the statistical mode of sampling length with more than 1,000 samples also taken at 1 m.

Figure 14.9 – Sampling Length Histogram



Source: DRA, 2022

Statistics show that 92.5% of samples constrained within the resource solids do not exceed 1.5 m in length and this length was found to be the more suitable for compositing. A fixed length compositing approach was selected, and the process was constrained to each resource solid. Residual composites less than 1/3 (0.5 m) on the compositing length were removed to avoid introducing any bias that may be related to short length composites.

For all solids combined, the Cg arithmetic mean of composites is 15.17% and compares well with the length weighted average from assays, which is 15.29% (Table 14.5). As expected, the composite dataset shows a lower coefficient of variation.

Table 14.5 – Comparative Descriptive Statistics Between Assays and 1.5 m Composites for All Resource Solids

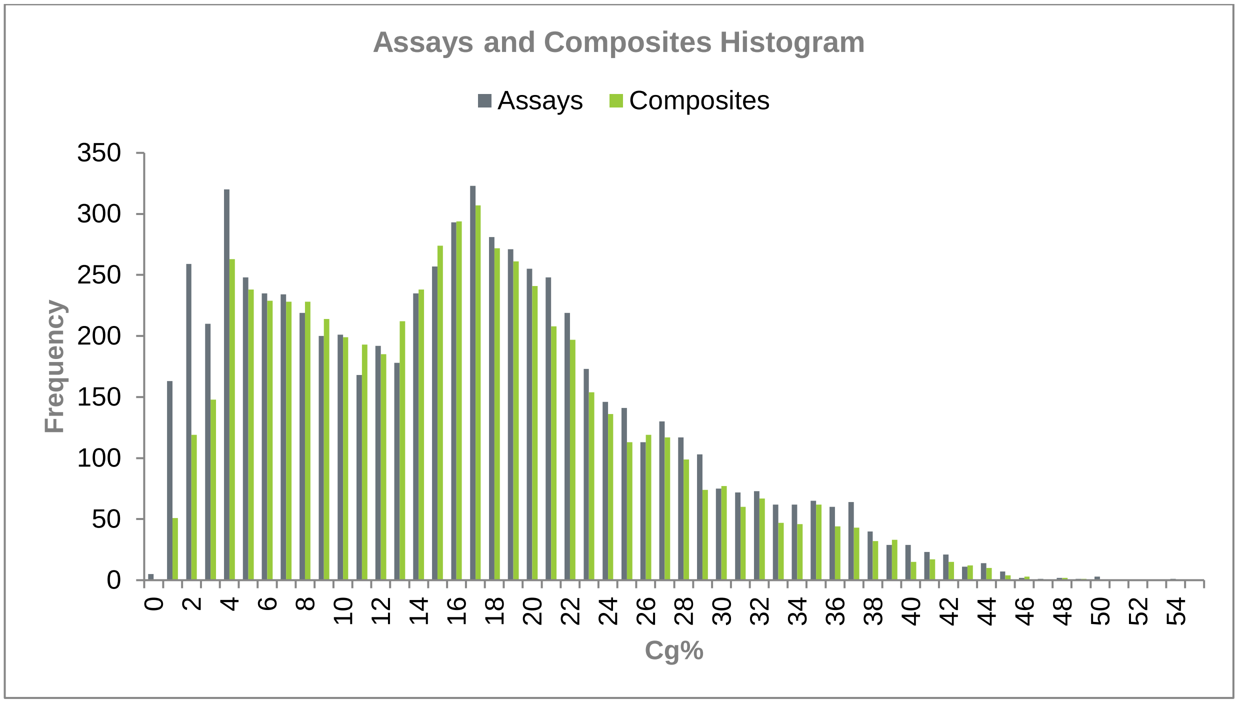
Description	Assays	Composites
Attribute	Cg%	
Arith. Mean	15.16	15.17
Weight. Mean	15.29	
Median	15.17	14.96
Mode	16.60	16.70
St. Dev.	9.45	8.74
COV	0.62	0.58
Minimum	0.00	0.10
Maximum	53.15	47.78
Count	5,960	5,400

A comparative breakdown of statistics between assays and 1.5 composites by resource solid is provided in Table 14.6. Here again it could be noted a good performance of the compositing process when comparing composites and assays Cg% averages for the three (3) main volumetric resource solids, namely Solids 2, 5 and 6. Figure 14.10 illustrates a superimposition of assay and composite histograms.

Table 14.6 – Comparative Statistics Between Assays and Composites by Resource Solid

Resource Solid	Assays (Arith. Mean)	Composites	Volume
	Cg%		(1,000 m^3)
Solid 1	13.23	13.22	251
Solid 2	14.73	14.68	1951
Solid 3	8.15	8.07	21
Solid 3a	17.63	17.63	305
Solid 5	14.73	14.60	729
Solid 5a	14.29	14.46	411
Solid 6	16.95	16.91	1,172
Solid Zone West	8.16	8.02	43
Solid Zone East	10.33	10.58	83

Figure 14.10 – Histograms of Assays and 1.5 m Composites



Source: DRA, 2022

14.9 Variograms Modelling

Variograms were generated to assess and analyze the spatial continuity of grades and ultimately help with the selection of interpolation parameters to better reflect the reality of grades and the mineralisation.

Variograms were modelled in HxGN MinePlan™ Data Analyst (MSDA) using the 1.5 m composites dataset. The rotation convention used is MEDS (ROTN, DIPN, DIPE) implemented in the software used. A focus was given to the most volumetric resource solids with a higher number of samples and which had the opportunity to produce more stable variograms. Directional variograms were generated for Solids 2, 5 and 6. More specifically, and for Solid 2, the software was set to generate all possible combinations of variograms on strikes and dips, from 0º to 360º in a horizontal orientation and with a 15º incremental step, and from 0º to -90º in the dip direction with a 10º incremental step. For Solids 5 and 6, the incremental step in the horizontal orientation was 10º. The resulting variograms were then analyzed for their stability, structural quality and parameters (strike, dip, nugget effect, sill and range).

Table 14.7 presents, for each main resource solid, the best variograms parameters obtained in the major, semi-major and minor axis. Downhole variogram parameters were found as being the best approximation of the ranges in the minor axis and the nugget value. For Solid 5, only the omnidirectional variogram was considered for both the major and semi-major axis.

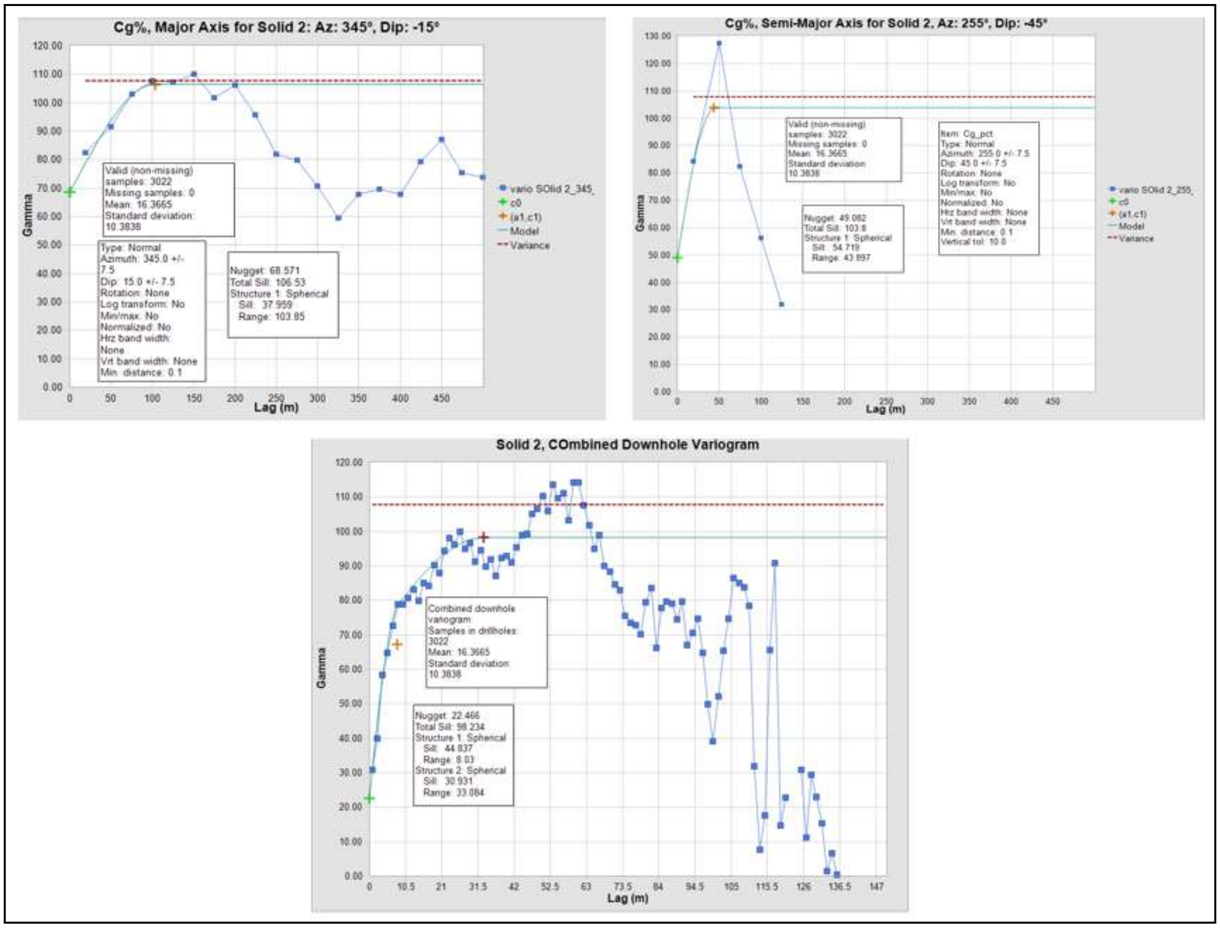
The outputs of variograms modelling, along with the known strike and dip direction for each resource solid, were used as guide to set search ellipse parameters for the Mineral Resource interpolation. A conservative approach was used and consisted of using 3/4 of the variograms ranges for the major and the semi-major axis in the first estimation pass. The complete range of the major and semi-major axis was used to interpolate during the second pass while for the third pass, the range for both axes was relaxed to a factor of 1.5. The full range of the downhole variogram used as the best approximation of the minor axis was used to interpolate both during the first and the second pass. It was relaxed to factor of 2 for the third pass of Solids 2 and 6 and to a factor of 3 for the third pass of Solid 5.

The same interpolation parameters as setup for interpolating Solid 5 were used to interpolate the remaining smaller resource solids, namely Solid 1, Solid 3, Solid 4, Solid 7, Solid 9, and Solid 10.

Table 14.7 – Best Variograms Parameters Obtained

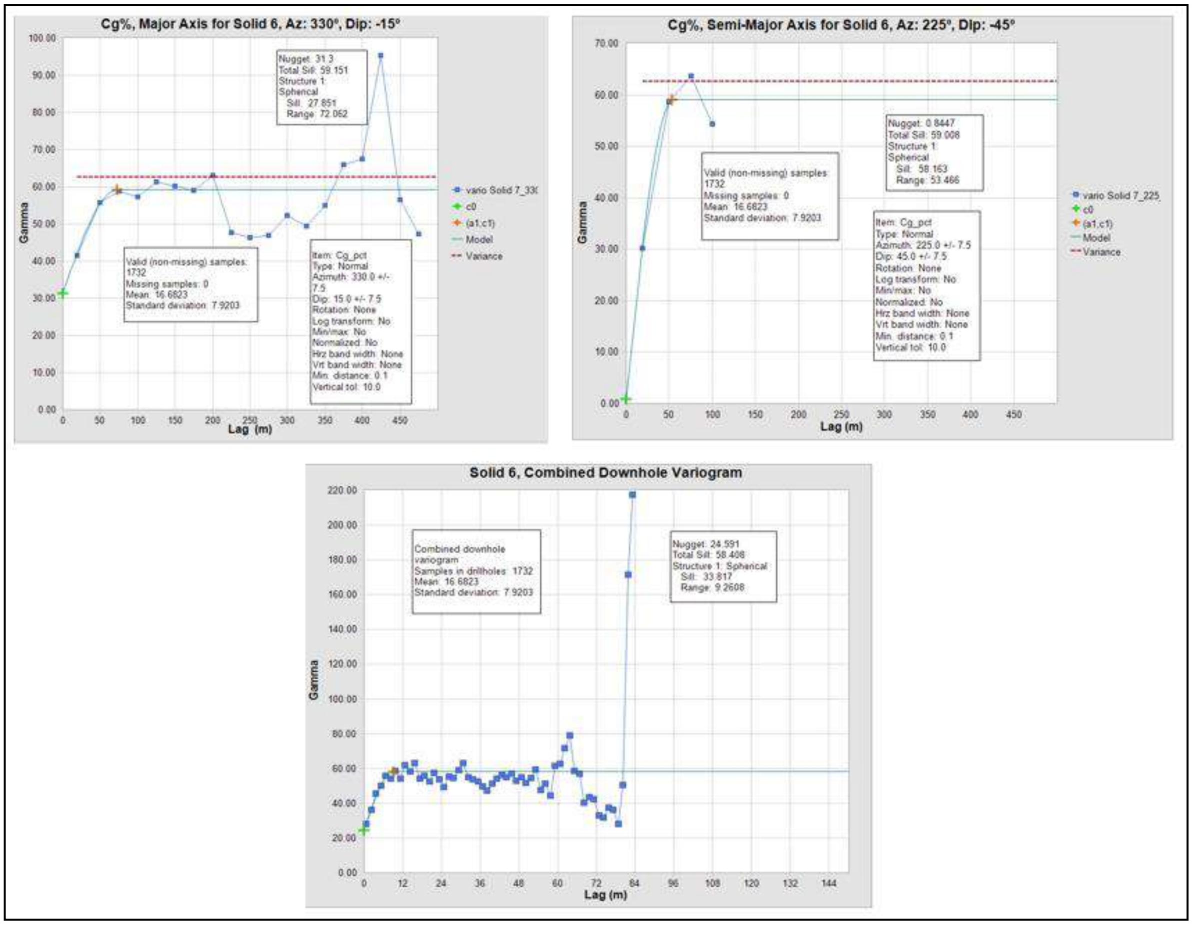
Solid	Type	Direction	Dip	Range (m)	Nugget	Sill	Total Sill	Comment
Solid 2	Major	345	-15	104	68.57	37.96	106.53	Good structure
	Semi	255	-45	44	49.02	54.72	103.8	Fairly poor structure
	Downhole	-	-	23	22.47	75.77	98.23	Best approximation of the minor axis
Solid 6	Major	330	-15	72	31.3	27.85	59.15	Good structure
	Semi	225	-45	53	0.85	58.16	59.01	Semi not exactly orthogonal to major
	Downhole	-	-	9	24.59	33.82	58.41	Best approximation of the minor axis
Solid 5	Major (Omni)	-	-	64	63.74	10.68	74.42	Omni directional variogram
	Semi (Omni)	-	-	64	63.74	10.68	74.42	Omni directional variogram
	Downhole	-	-	12	29.33	45.78	78.11	Best approximation of the minor axis

Figure 14.11 – Best Variograms Defined in Solid 2 for Cg%



Source: DRA, 2022

Figure 14.12 – Best Variograms defined in Solid 6 for Cg%



Source: DRA, 2022

14.10 Block Model Setup and Coding

A block model was setup using the HxGN MinePlan™ software package to generate a grid of regular blocks to estimate Cg% grade and density. A single block model was created for all of the resource estimation domains. The industry standard is to consider block sizes ranging from one half (1/2) to one quarter (1/4) or one fifth (1/5) of the drill spacing. Block size is a particularly sensitive parameter when using geostatistical estimation methods such as Kriging (Ordinary Kriging, Simple Kriging, Indicators Kriging, etc.). Even for estimates that are not based on geostatistical methods such as Inverse Distance Squared, using a block size that is too small will lead to oversmoothed estimates and lead to results that do not reflect the drilling density and the reality of the mineralisation and grades.

Given the structural complexity of the Lac Knife graphite mineralisation, some areas have been tightly drilled up to less than 25 m spacing. The less drilled areas and some solids' edges show an average spacing of 50 m between holes. Based on the different considerations, namely drill spacing and the deposit's structural complexity, DRA is of the opinion that a block size of 5 m × 5 m × 5 m, respectively in the X, Y and Z directions, is suitable for the Mineral Resource Estimate update of the Lac Knife graphite project. The selection of this block size is based on the targeted mining selectivity. No rotation was applied to the block model and the limits of the model were determined based on drilling extents. Table 14.8 shows the block model setup parameters and Table 14.9 presents the block model items.

Table 14.8 – Lac Knife Block Model Setup Parameters

	Minimum (m)	**Maximum** (m)	**Size** (m)	**# of Blocks**
Easting	622,000	624,000	5	360
Northing	5,822,850	5,826,650	5	760
Elevation	300	850	5	110

Table 14.9 – Block Model Items

Item	**Description**
TOPO%	Percentage of block below topography
CG	Graphitic Carbon grade (%)
DENS	Density (t/m^3)
SOLID	Solid Code
NCOMP	Number of Composites used for Block Interpolation
DISTA	Composites Average Distance
DISTC	Distance to Closest Composite
DISTF	Distance to Farthest Composite
NHOLE	Number of Holes use for Block Interpolation
PASS	Pass ID
RCAT	Resource category
CONC%	Concentrate yield (%)

14.11 Bulk Density

A density database was supplied by IOS and encompasses 7,688 density measurements performed on core from the drilling campaigns from 2010 to 2018. When removing repeated readings (Duplicates), 7,447 density readings remain in the density database. Density measurements were performed using the principle of weight in the air and weight in water, surface-dry ASTM C-127-07 protocol. Most of the graphite mineralized material is made of graphitic gneiss and some intervals of quartzofeldspathic gneiss with a mixture of pyrrhotite and pyrite. The bulk density taken on all samples within the database averaged 2.80 g/cm^3 with a standard deviation of 0.11, a coefficient of variation of 0.04 and a median of 2.78 g/cm^3.

There is a poor linear relationship between density and graphite content, and the density appears to be more correlated with the sulfur content, which is not populated for all samples in the drill hole database. It was elected to interpolate the density using IDW2 for all resource estimation domains. The resulting block density population shows similar statistical patterns than the input density measurements from the database (Table 14.10).

Table 14.10 – Comparative Statistics of Blocks and Bulk Density

Description	Blocks Density	Bulk Density
Mean	2.82	2.81
Median	2.80	2.78
Mode	2.78	2.74
Standard Deviation	0.09	0.12
COV	0.03	0.04
Minimum	2.59	2.52
Maximum	3.17	3.37
Count	39,022	4,295

14.12 Mineral Resource Estimation Procedure

The mineral resource of the Lac Knife deposit was estimated using Inverse Distance Squared (IDW2).

Three (3) successive interpolation passes were used to inform the different estimation domains. The size of the search ellipsoid was variable and adapted to each resource domain depending on the results of the variogram analysis performed to determine ranges. The search ellipsoids were constrained to ensure that only composites located within each estimation domain are those used to interpolate blocks locate inside it.

Interpolation parameters and search ellipse sizes are respectively summarised in Table 14.11 and Table 14.12.

The original drillhole database contained few holes with Cg% high grade intervals but drilled parallel to the mineralisation and not giving a true picture of the reality of the orebody. These holes were drilled for metallurgical purposes. These holes were removed in the final resource interpolation database to avoid introducing bias in the results.

Table 14.11 – Interpolation Parameters

Items	Description		
Grade Interpolation Method	Inverse Distance Squared (IDW2)		
Compositing	By fixed length of 1.5 m		
High Values Capping	Not applicable		
Holes drilled parallel to the mineralisation	Removed from the MRE database		
Ellipse Orientation	Solid 7: Az=330º, Dip= -45º, Plunge = -15º		
	Remaining Solids: Az=340º, Dip= -40º, Plunge = 0º		
Declustering	Octant search. Limit of 4 composites per octant		
Interpolation Pass	Pass 1	Pass 2	Pass 3
Min. Number of Composites/Block	9	6	3
Max. Number of Composites/Block	15	15	15
Max. Number of Composites/Hole	3	3	3

Table 14.12 – Search Ellipse Size

Solid	Search Ellipse Size	Pass 1	Pass 2	Pass 3
Solid 2	Major Axis (Strike)	78	104	156
	Semi-Major Axis (Dip)	34	45	68
	Minor Axis	23	23	46
Solid 6	Major Axis (Strike)	53	70	105
	Semi-Major Axis (Dip)	38	50	75
	Minor Axis	9	9	27
Solid 5 and Remaining solids	Major Axis (Strike)	48	64	150
	Semi-Major Axis (Dip)	48	64	150
	Minor Axis	12	12	60

14.13 Mineral Resource Validation Procedure

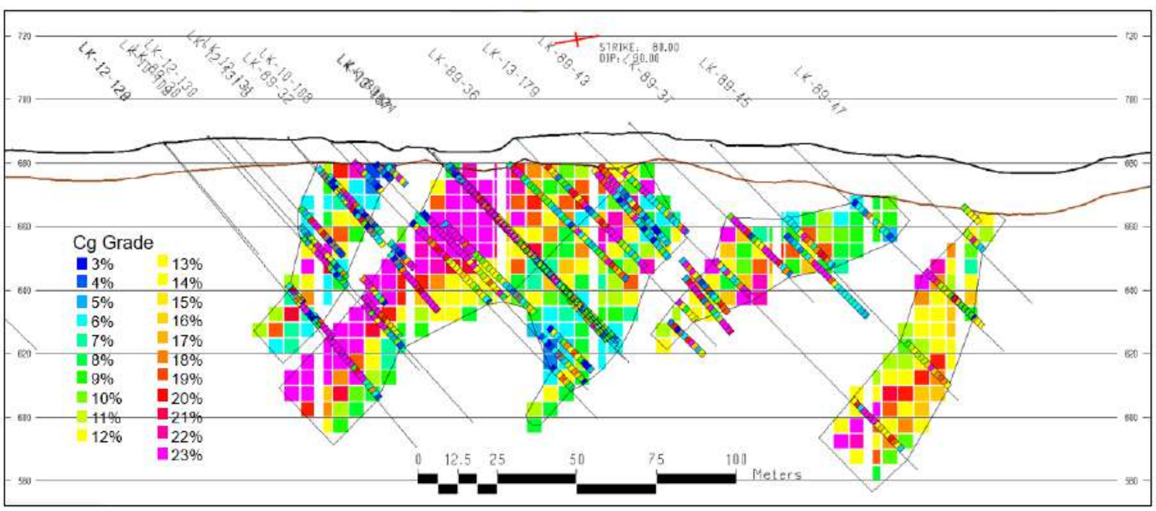
14.13.1 Visual Inspection

The first step for validating the output of the MRE results was to perform visual comparisons of input composites and blocks grades in both 2D and 3D visualization to ensure the main grade characteristics of the mineralisation have been reproduced faithfully in the block model. The 2D inspection consisted of visualising each cross section with composite grades and block grades superimposed. It was found that the results of the block model faithfully reproduce composite grades.

In sections where a continuity of grades along dip are observed in the drill hole, such as section 7+00 in Figure 14.13, it could be noted that the block model faithfully reproduces this grade continuity. On the other hand, in areas where grades appear to be discontinuous between holes along dip, such as section 3+50 in Figure 14.14, one can also note that this is also faithfully reproduced in the block model.

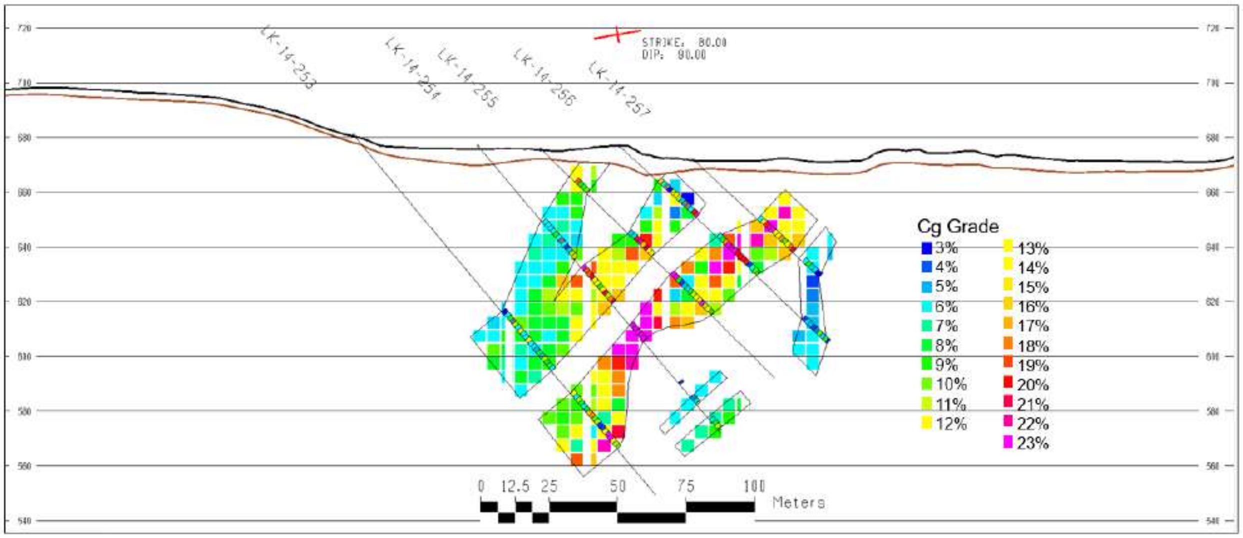
A plan view of the block model and input composites is presented in Figure 14.15. Figure 14.16 and 14.17 represent respectively an East-West longitudinal view of the Block Model and composites, and a slice view at level 650 m of the block model and the composites.

Figure 14.13 – Typical Cross-Section with Composite and Block Grades (Section 7+00)



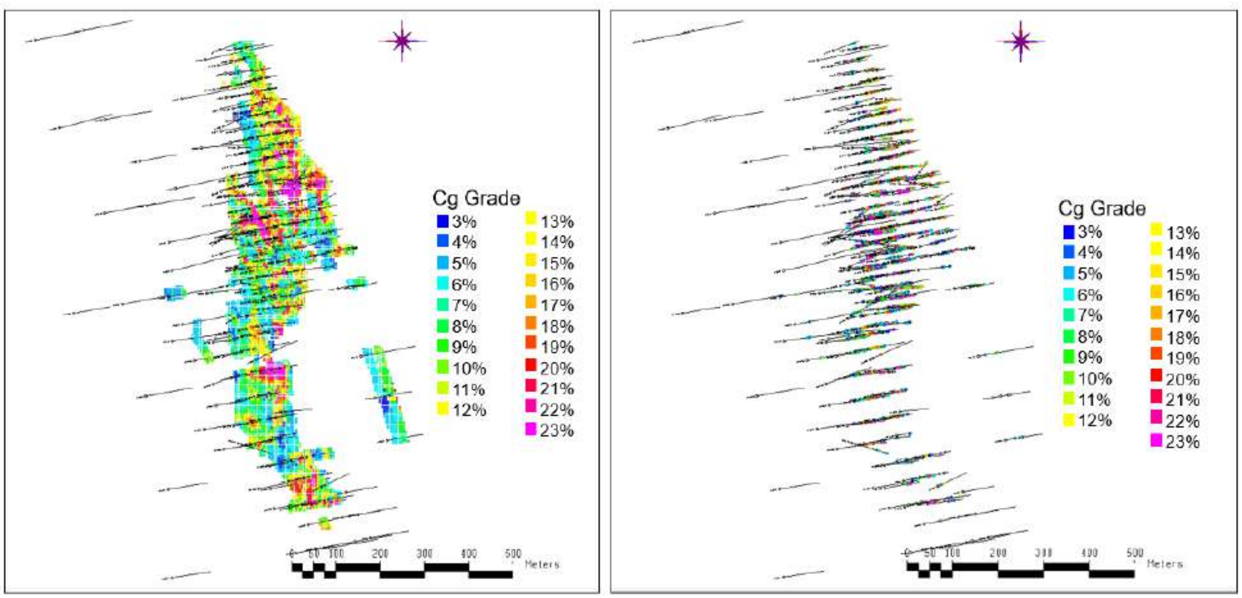
Source: DRA, 2022

Figure 14.14 – Typical Cross-Section with Composite and Block Grades (Section 3+50)



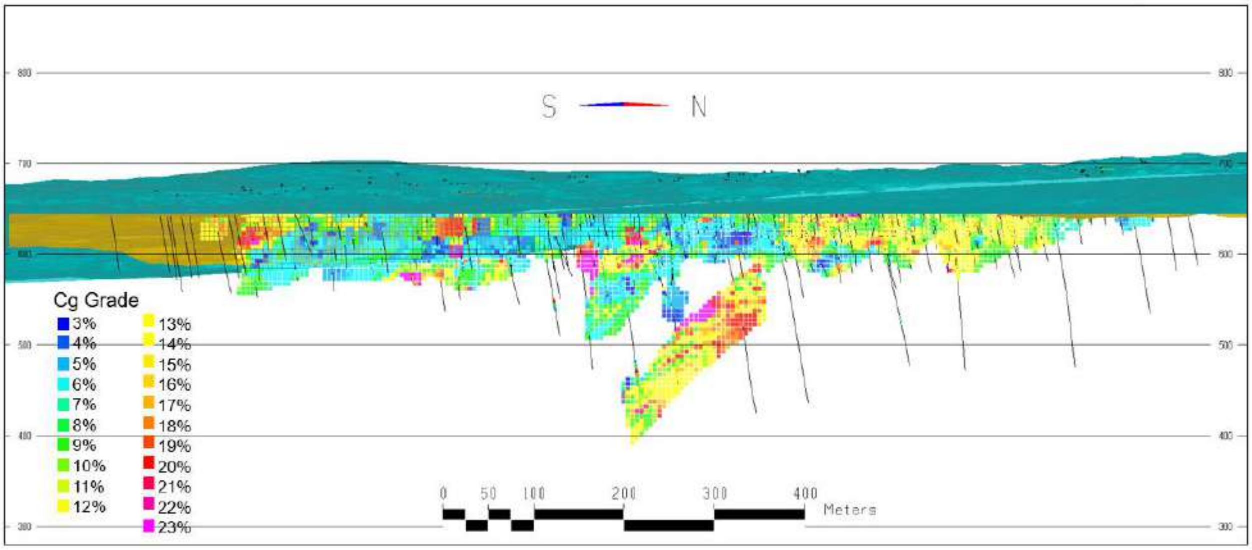
Source: DRA, 2022

Figure 14.15 – 3D Plan view of BM versus Composites



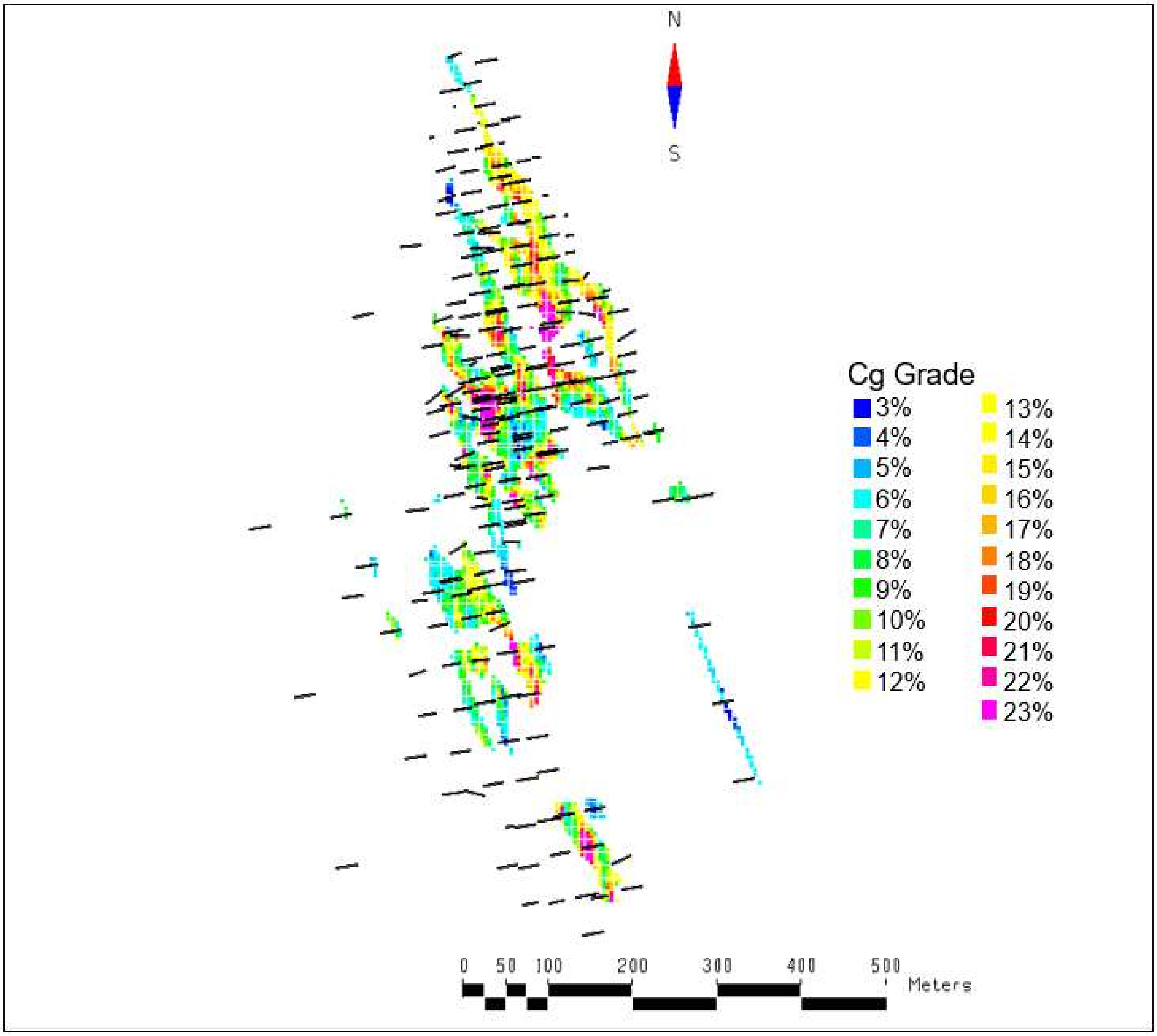
Source: DRA, 2022

Figure 14.16 – South-North (looking west) Longitudinal View of the Block Model and Composites



Source: DRA, 2022

Figure 14.17 – Slice View at Level 650 m of the Block Model



Source: DRA, 2022

14.13.2 DESCRIPTIVE STATISTICS

Descriptive statistics were generated as part of the validation to compare input assays, composites and blocks grades and ensure that no bias has been introduced during the estimation. The results show that the composites and blocks have similar means, with a very slight smoothing effect introduced in the block model. This was expected given the very high number of estimated blocks compared to the low number of composites used as input, and the fact that the estimate was subject to several parameters and constraints. Descriptive statistics are presented in Table 14.13.

Table 14.13 – Validation Statistics between Assays, Composites and Block Model

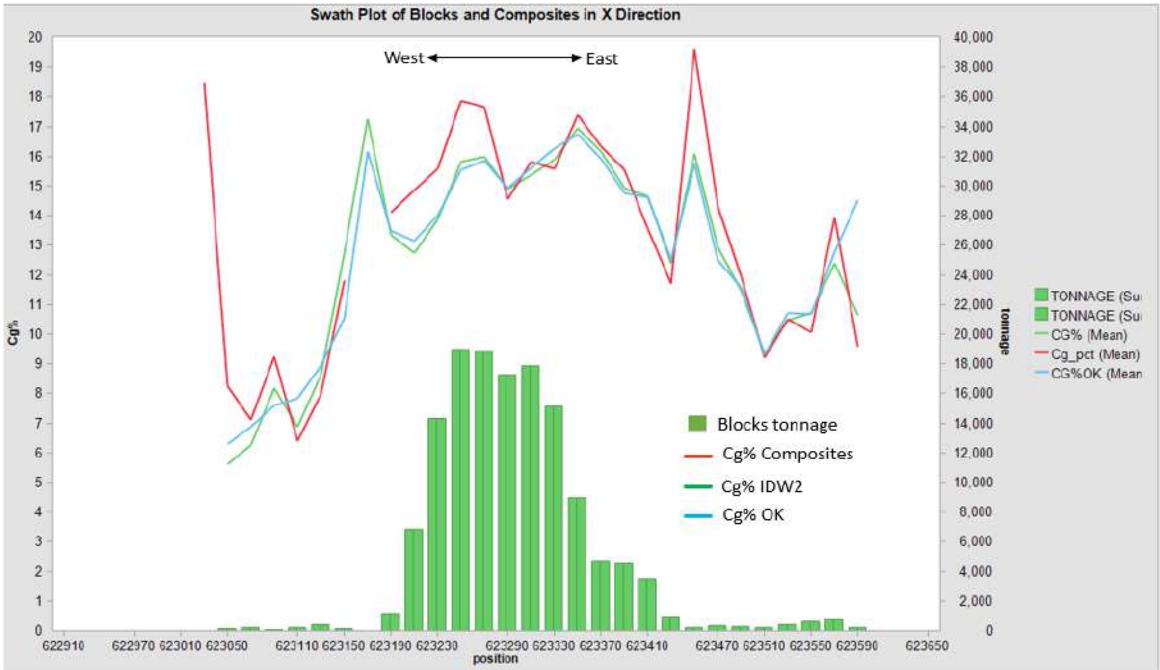
Description	Assays	Composites	Block Model
Attribute	Cg%		
Mean	15.29	15.17	15.14
St. Dev.	9.45	8.74	5.50
COV	0.62	0.58	0.36
Minimum	0.00	0.10	1.13
Maximum	53.15	47.78	43.15
Count	5,960	5,407	39,022

14.13.3 Swath Plot

Swath plots were also generated to validate the estimate. Swath plots present the block model data aggregated in two dimensions and projected onto the third dimension. It may be used to compare results of two interpolation methods or to compare blocks grade and composites grade trends in a given direction through an ore body. DRA generated swath plots for both blocks and composites superimposed, respectively in the X, Y and Z directions, to ensure that grade trends from the composite dataset are acceptably reproduced in the estimated block model (Figure 14.18 to Figure 14.20). Blocks trends are shown in green and composites trends are shown in red.

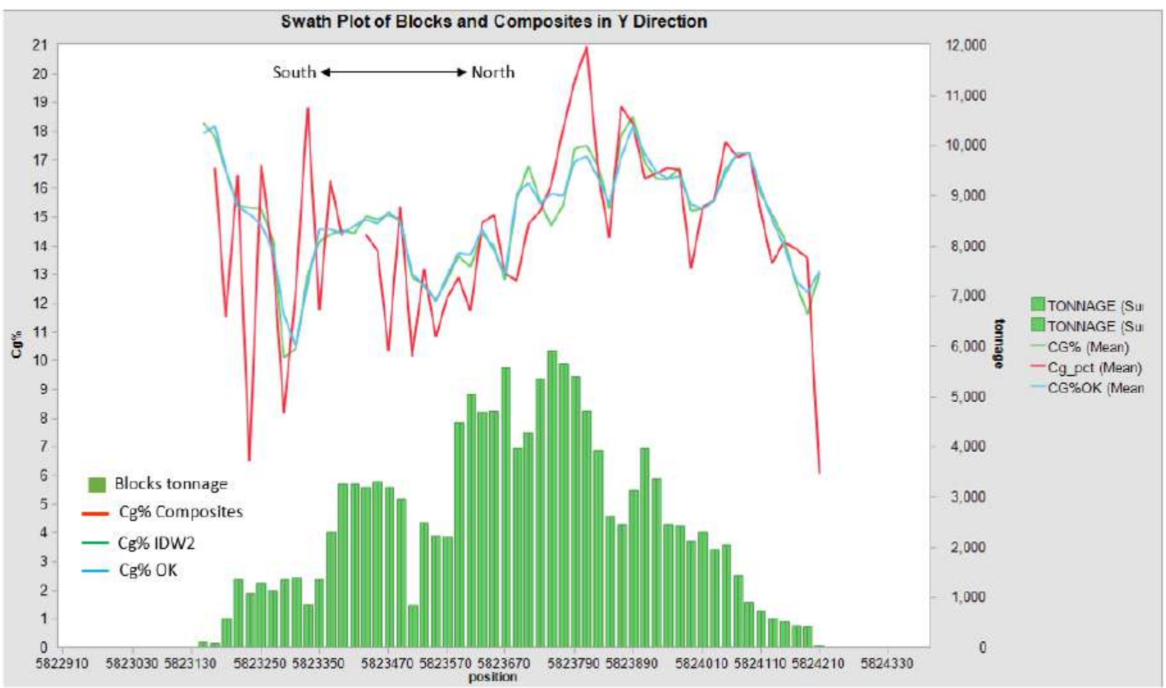
The results show that the general trends in grade variation in the composites are faithfully reproduced in the grade model with an expected regional smoothing effect in the estimated block model, reducing the impact of isolated high Cg% composite values. This smoothing effect is caused by both the estimation parameters and the use of several composites originating from different spatial location to interpolate a block.

Figure 14.18 – Cg% Swath Plots on the X Direction for Blocks and Composites



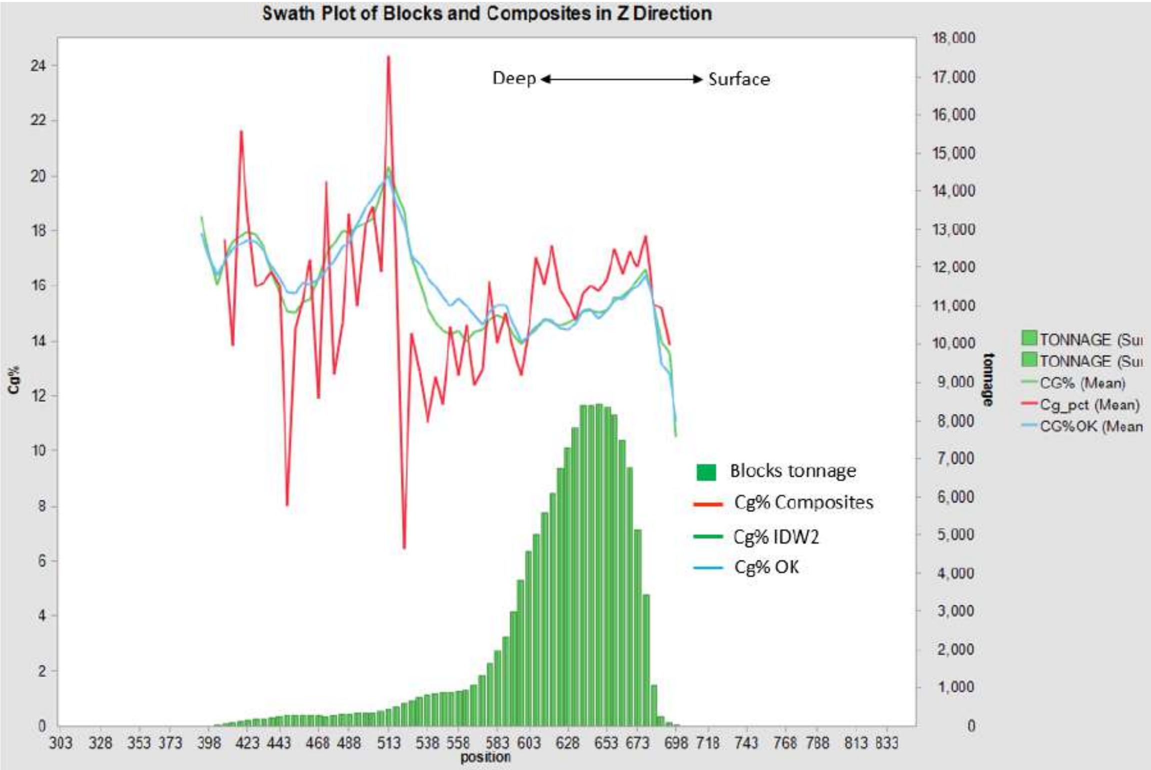
Source: DRA, 2022

Figure 14.19 – Cg% Swath Plots on the Y Direction for Blocks and Composites



Source: DRA, 2022

Figure 14.20 – Cg% Swath Plots on the Z Direction for Blocks and Composites



Source: DRA, 2022

14.13.4 Comparison between IDW2 and Ordinary Kriging

As another validation process of the MRE, a separate interpolation run was performed using Ordinary Kriging (OK) as estimation methodology. Parameters defined by the variography analysis were used as input parameters along the other parameters as set for the IDW2 estimation. A comparative table presenting the outcomes of this exercise is presented in Table 14.14. For Pass 1 and Pass 2, where respectively 75% and 100% of variogram ranges have been used, IDW2 delivers grade slightly higher than OK as expected due to the smoothing effect introduced by OK. For the third pass where the search ellipses were relaxed to a factor of 1.5 to 3, OK gives an average grade higher of about 1% Cg than IDW2 and this is related to the fact that the relaxation of the search ellipses with OK suggests higher ranges, and thus better grade continuity, allowing a larger extrapolation of high-grade values. The global results, Pass 1 to Pass 3, still gives a slightly higher Cg% with IDW2.

Table 14.14 –Comparative Table Between Interpolation Results of IDW2 and Ordinary Kriging

Open Pit Restricted (Cut-Off of 4% Cg)						
Description	**IDW2**			**Ordinary Kriging (OK)**		
	Tonnes	Cg%	Concentrate (Mt)	Tonnes	Cg%	Concentrate (Mt)
Pass 1	9,137,907	15.57	1.32	9,170,930	15.44	1.32
Pass 2	2,811,871	14.62	0.38	2,831,776	14.60	0.38
Pass 1 and Pass 2	*11,949,778*	*15.35*	*1.71*	*12,002,706*	*15.24*	*1.70*
Pass 3	655,232	16.80	0.10	663,563	17.89	0.11
Total	**12,605,010**	**15.42**	**1.81**	**12,666,269**	**15.38**	**1.81**

14.14 Cut-Off and Open Pit Limiting Parameters

A resource-constraining pit was generated to demonstrate reasonable prospects of eventual extraction and delineate the Mineral Resources.

14.14.1 Cut-Off Grade

Material was considered mineralised if it had graphite grade greater than 4.01%, as calculated according to Equation 14.1 and Table 14.15.

$$Cut-Off\ Grade\ (\%\ Cg) = \frac{Conc\ Grade\ (\%\ Cg) \times \left(Processing\ Cost\ (\$/t\ milled) + G\&A\ Cost\ (\$/t\ milled)\right)}{\left(Selling\ Price\ (\$/t\ conc) - Transport\ Cost\ (\$/t\ conc)\right) \times \left(\frac{Process\ Recovery\ (\%)}{100}\right)} \quad \text{Equation 14.1}$$

14.14.2 Open Pit Limiting Parameters

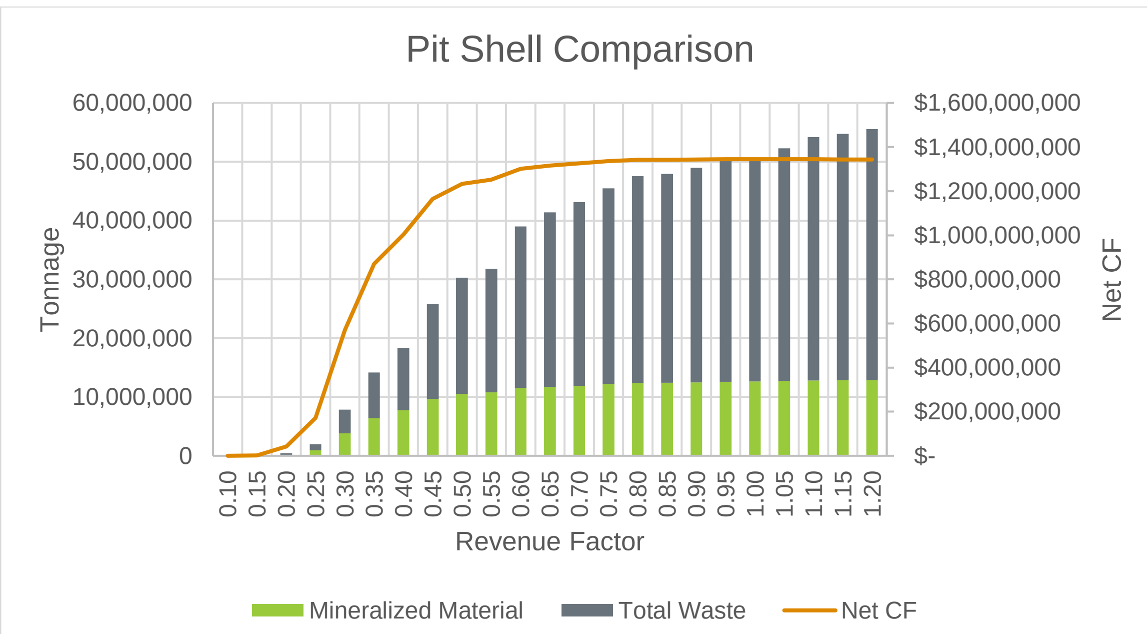
The mineral resources were limited to a constraining pit. A pit optimisation exercise was undertaken in HxGN MinePlan's MSOPit module using the Pseudoflow algorithm. The parameters used in the optimisation were derived from the 2014 Feasibility Study and adjusted to reflect current costs. The parameters and the results of the optimisation are listed in Table 14.15.

Table 14.15 – Parameters Used for Mineral Resource Constraining Pit Shell Optimisation

Description	Unit	Value
Mining		
Ore Mining Cost	$/t mined	5.91
Waste Mining Cost	$/t mined	5.40
Overburden Mining Cost	$/t mined	3.71

Description	Unit	Value
Processing		
Processing Cost	$/t milled	34.42
G&A Cost	$/t milled	10.53
Transportation Cost	$/t conc	265
Process Recovery	%	90.7
Concentrate Grade	%	97.8
Graphite to Concentrate		$\frac{Ore\ Tonnage \times Cg\ Grade \times Mill\ Recovery}{Concentrate\ Grade \times 100}$
Other		
Selling Price	$/t conc	1,475
Slope Angle	°	See Section 15.3.1
Discount Factor	%	10
Mining Rate	ktpa	50

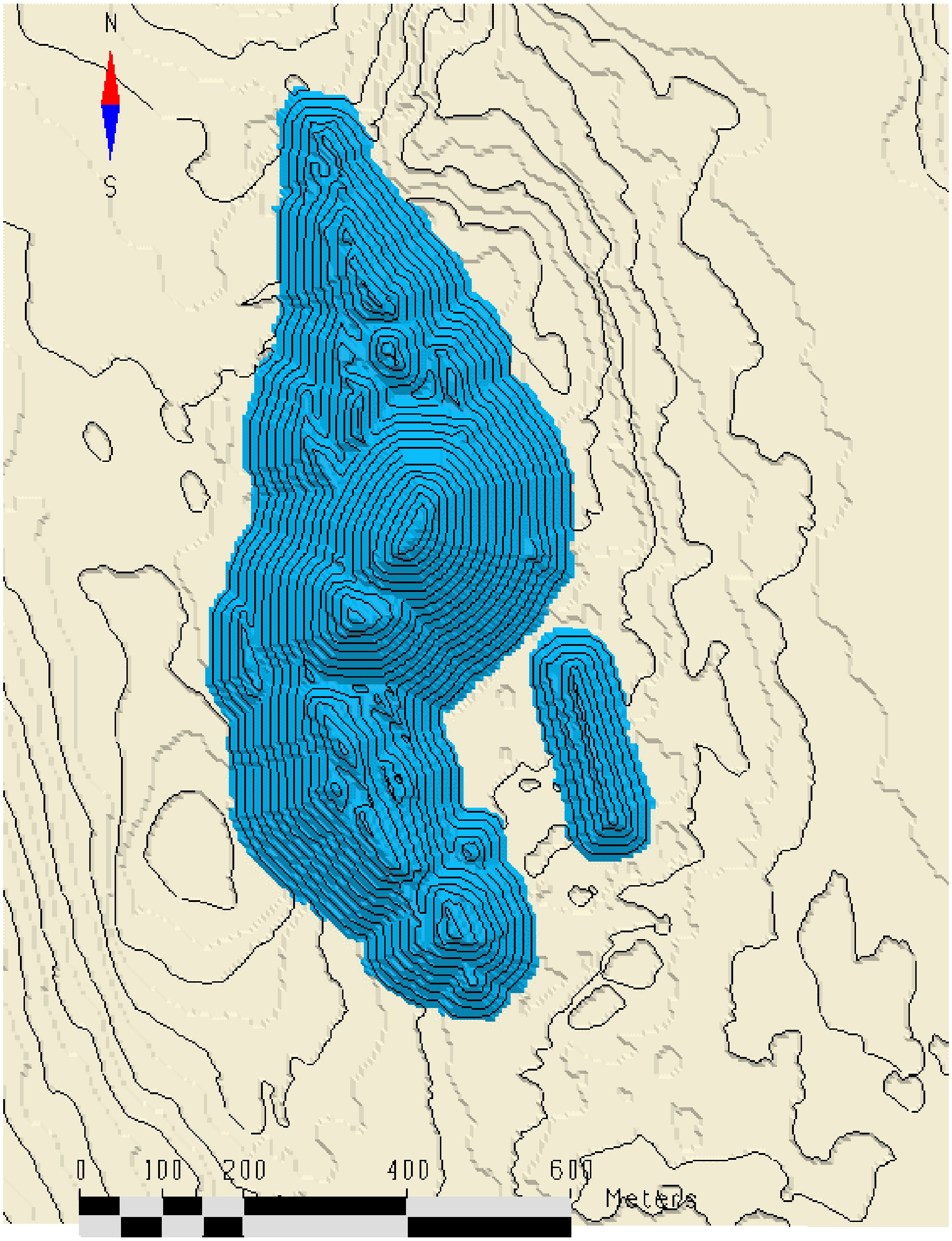
Figure 14.21 – Resource Pit Shell Generation Results



Source: DRA, 2022

Figure 14.21 shows the Revenue Factor 1.00 pit shell was selected to constrain the Mineral Resources as it represented the highest cumulative net cashflows. The plan view of mineral resource constraining shell is presented in Figure 14.22.

Figure 14.22 – Plan View of Mineral Resource Constraining Shell



Source: DRA, 2022

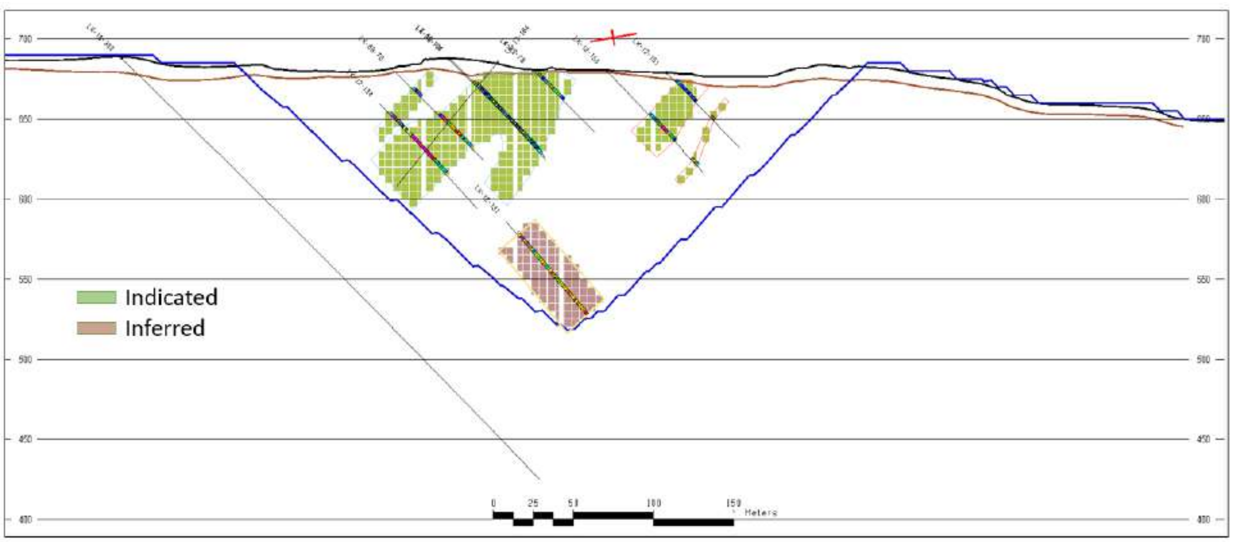
14.15 Mineral Resource Classification

Mineral Resource classification is based on confidence of continuity of geology and grades that are, in most cases, related to the drilling density. Areas that are more densely drilled are usually better known and understood than areas with sparser drilling, which can still be considered with a lower confidence level. However, in certain rare cases, even a tight drill pattern on a project may not provide the required grade and geological continuity certainty to allow classifying Mineral Resources into higher categories. This could be the case for extremely structurally complex deposits or deposits showing a very high geological and/or grade variability.

The Lac Knife deposit presents some areas that have been tightly drilled up to 25 m and even less. This tight drilling instead of confirming geological and grades continuity in some areas rather has highlighted structural complexities with the orebody stopping abruptly at unexpected places. Both folding and faults appear to account for this structural complexity. Also, the metamorphic nature of the deposit accounts for this complexity.

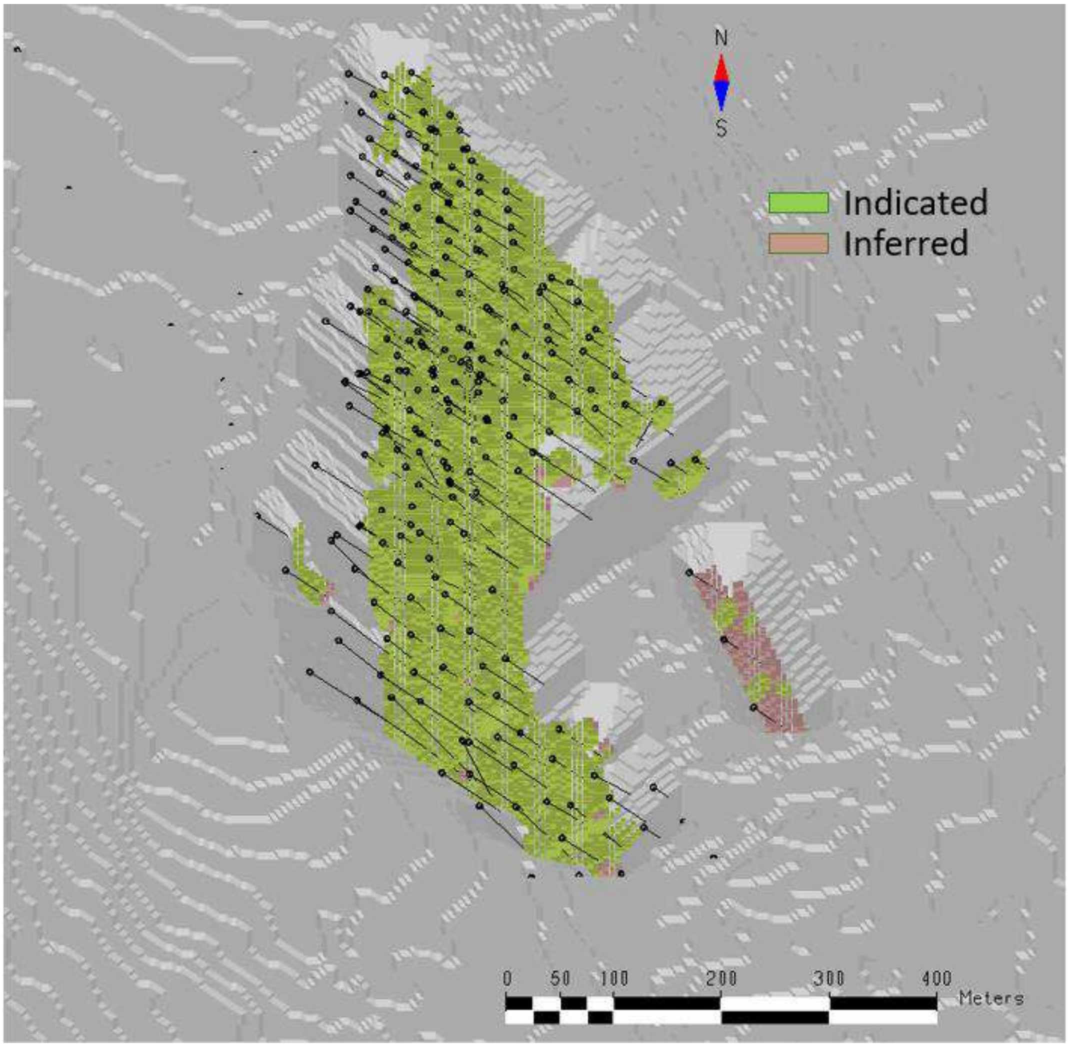
Figures 14.23 and 14.24 present a typical cross section view and a typical 3D oblique view, respectively, of the classified Mineral Resource.

Figure 14.23 – Typical Section View of the Classified Mineral Resource



Source: DRA, 2022

Figure 14.24 – Typical North-South View of the Classified Mineral Resource



Source: DRA, 2022

A set of facts and factors were considered by the Qualified Person in the exercise of classifying the Mineral Resource of the Lac Knife graphite deposit. Some of these facts and factors are summarised and discussed as follows.

- The drill hole database comprises 308 holes drilled between 1989 and 2018. Historical holes drilled in 1989 were validated in 2012 through a twin drilling program. Recent drilling since 2010 was planned and managed by experienced professionals applying industry best practices standards.
- The implementation of a rigorous internal QA/QC procedure enhancing the confidence level attributed to the assay data used to support the current MRE.

- The reality of the mineralisation has revealed local complexities about geological and grades continuity. Locally from one section to another mineralisation locally stopped abruptly in strike and dip direction rending interpretation more complex.
- Variogram modelling has highlighted good to moderate structures with ranges better define for the major axis and less for the semi-major axis. The minor axis was not well defined, and the alternative was to use the downhole variograms. The most volumetric contributors, Solid 2 and Solid 6, are the ones where the best variogram structures were obtained.

Given the structural complexity of the mineralisation, the QP responsible for the MRE found it inappropriate to classify Measured Mineral Resource on the Lac Knife graphite deposit. All blocks interpolated during the first and second passes, located within the resource-constraining pit shell defined to conform to the requirement of economical prospect, have been classified as Indicated Mineral Resource. All blocks interpolated during the third pass, located within the resource constraining pit shell have been classified as Inferred Mineral Resource.

14.16 Previous Mineral Resource Estimate

A MRE for the Lac Knife deposit was previously completed in January 2014 (AGP Mining Consultants Inc, 2014). The outcome of this estimate is presented in Table 14.16.

Table 14.16 – Historical Mineral Resource Statement as of January 2014 (Using 3.0% COG)

Classification	**Tonnes** (t)	**Graphitic Carbon** (%)	**In-Situ Graphite** (t)
Measured and Indicated	**9,576,000**	**14.77**	**1,414,000**
Inferred [1]	3,102,000	13.25	411,000

The key changes between the 2014 MRE and this current updated MRE are:

- Additional drilling since 2014 as discussed in Section 14.14.
- Updated interpretation by DRA of the mineralized wireframes base on the new information added.
- The use of a slightly increased COG, 3% in 2014 and 4% in 2022, to report the outcomes of the estimates.

14.17 Mineral Resource Statement

The Mineral Resources are stated using a Cg COG of 4.0% as defined in Section 14.14. DRA is unaware of any legal, political, environmental, or other risks that could materially affect the potential development of the Mineral Resources.

Due to the uncertainty associated with Inferred Mineral Resources, it cannot be assumed that all or part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource with continued exploration. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. However, it is important to note that the Inferred Mineral Resources represent a limited percentage (5.1%) of the total Mineral Resources for the Lac Knife graphite deposit. A total of 38.1 Mt of waste, including overburden, is also contained within the resource-constraining pit.

Table 14.17 – Lac Knife - Mineral Resource Statement (Using a 4.0 % Cg COG)

Classification	Tonnes (Mt)	Graphitic Carbon (%)	Concentrate (Mt)
Measured [1,2,3]	-	-	-
Indicated [1,2,3]	12.0	15.34	1.7
Total Measured and Indicated	**12.0**	**15.34**	**1.7**
Inferred [1,2,3,4]	0.6	16.90	0.1

1. Mineral Resources are inclusive of Mineral Reserves.
2. The Mineral Resources were estimated following the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council
3. Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.
4. The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
5. Resources are constrained by a Pseudoflow optimised pit shell using HxGn MinePlan software. Pit shell is define using 45-degree slope, $CAD 1,475/t concentrate sales price, $CAD 5.91/t ore mining costs, $CAD 34.42/t processing costs, $CAD 10.53/t G&A and $CAD 265.00/t for concentrate transportation costs, 90.7% process recovery, 97.8%concentrate grade and an assumed 50,000 tpy concentrate production.
6. The Effective Date is March 6, 2023.
7. Numbers may not add due to rounding.

15 MINERAL RESERVE ESTIMATE

The terminology used to classify the reserves in this Report is in accordance with National Instrument (NI) 43-101 and the Canadian Institute of Mining, Metallurgy, and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (2014) as well as following the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (2019). The terminology is summarised below.

Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve.

A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource demonstrated by at least a Pre-Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

Mineral Reserves are those parts of Mineral Resources which, after the application of all mining factors, result in an estimated tonnage and grade which, in the opinion of the Qualified Person(s) making the estimates, is the basis of an economically viable Project after taking account of all relevant processing, metallurgical, economic, marketing, legal, environment, socio-economic and governmental factors. Mineral Reserves are inclusive of diluting material that will be mined in conjunction with the Mineral Reserves and delivered to the treatment plant or equivalent facility. The term 'Mineral Reserve' need not necessarily signify that extraction facilities are in place or operative or that all governmental approvals have been received. It does signify that there are reasonable expectations of such approvals.

Probable Mineral Reserve

A Probable Mineral Reserve is the economically mineable part of an Indicated and, in some circumstances, a Measured Mineral Resource. The confidence applied in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proven Mineral Reserve.

The Qualified Person(s) may elect to convert Measured Mineral Resources to Probable Mineral Reserves if the confidence in the Modifying Factors is lower than that applied to a Proven Mineral Reserve. Probable Mineral Reserve estimates must be demonstrated to be economic, at the time of reporting, by at least a Pre-Feasibility Study.

Proven Mineral Reserve

A Proven Mineral Reserve is the economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors.

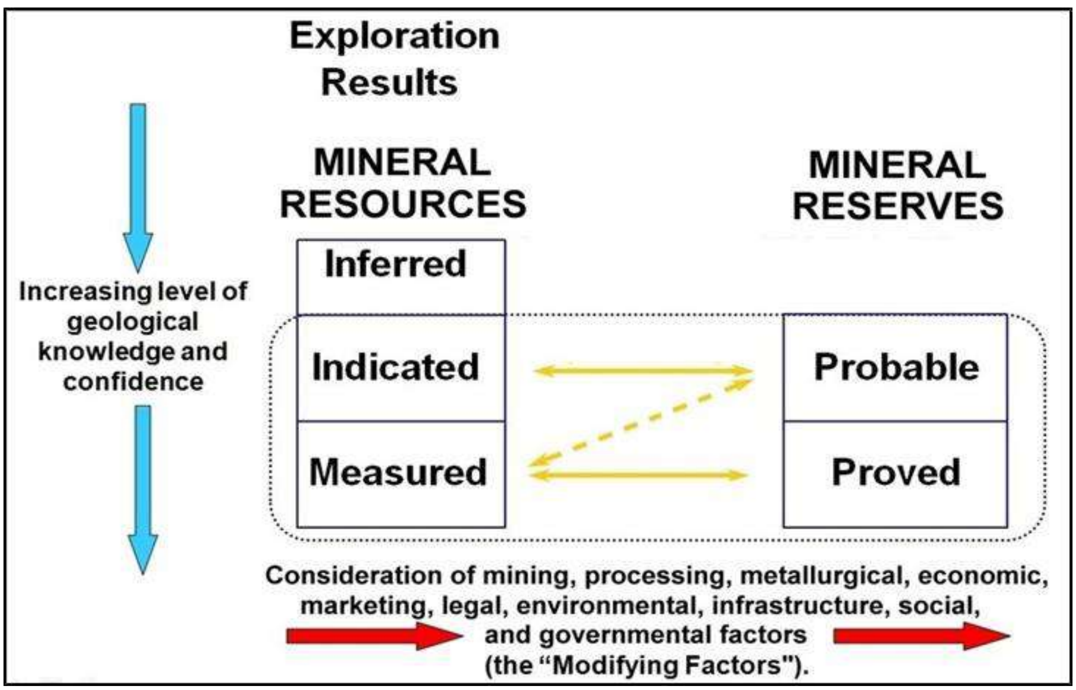
Application of the Proven Mineral Reserve category implies that the Qualified Person has the highest degree of confidence in the estimate with the consequent expectation in the minds of the readers of the report. The term should be restricted to that part of the deposit where production planning is taking place and for which any variation in the estimate would not significantly affect the potential economic viability of the deposit. Proven Mineral Reserve estimates must be demonstrated to be economic, at the time of reporting, by at least a Pre-Feasibility Study. Within the CIM Definition standards the term Proved Mineral Reserve is an equivalent term to a Proven Mineral Reserve

Modifying Factors

Modifying Factors are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

Figure 15.1 shows the relationship between the Mineral Resource and Mineral Reserve categories.

Figure 15.1 – Relationship between Mineral Reserves and Mineral Resources



Source: CRIRSCO International Reporting Template, October 2019

The Mineral Reserves for the Lac Knife deposit were prepared by Ghislain Prévost, P. Eng., Senior Mining Engineer with DRA Americas and Qualified Person. The Mineral Reserves have been developed using best practices in accordance with CIM guidelines and National Instrument 43-101 reporting. The effective date of the Mineral Reserve estimate is November 15, 2022.

The Mineral Reserves were derived from the Mineral Resource Block Model that was presented in Section 14. The Mineral Reserves are the Measured and Indicated Mineral Resources that have been identified as being economically extractable and which incorporate mining losses and waste dilution. The Mineral Reserves form the basis for the mine plan presented in Section 16.

15.1 Geological Information

The following section discusses the geological information that was used for the mine design and mineral reserve estimate. This information includes the topographic surface, the geological block model and the material properties for ore, waste and overburden.

The mine planning work carried out for the FSU was done using HxGN MinePlan®, a commercially available open pit mine planning and design software.

15.1.1 Topographic Surface

The mine design for the FSU was carried out using a topographic surface that originated from a Laser Imaging Detection and Ranging (LIDAR) survey. The topographic surface was supplied to DRA Americas as 0.5 m elevation contours.

15.1.2 Resource Block Model

The mine design for the FSU is based on the 3-dimensional geological block model that was prepared by DRA (Section 14). Each block in the model is 5 m wide, 5 m long and 5 m high, and there is no model rotation.

Each block in the model contains the Cg grade (%), density (t/m^3), resource classification (Measured, Indicated or Inferred), and material type (mineralised, waste and overburden).

15.1.3 Material Properties

The material properties for the different rock types are outlined below. These properties are important in estimating the mineral reserves, the equipment fleet requirements as well as the dump and stockpile design capacities.

15.1.3.1 Density

As discussed in Section 14 of this Report, the in-situ dry density of the mineralized material is a function of the Cg grade and varies between 2.59 and 3.17 t/m^3. The average density of the Measured and Indicated Mineral Resources is 2.81 t/m^3.

DRA used a density of 2.76 t/m^3 for the waste rock and a density of 2.10 t/m^3 for the overburden which are the recommended densities from the 2014 Feasibility Study.

15.1.3.2 Swell Factor

The swell factor reflects the increase in volume of material from its in-situ state to its blasted state when loaded into haul trucks. A swell factor of 45% was used for the FSU, which is a typical value used for open pit hard rock mines. Once the rock is placed in the waste dumps and stockpiles, the swell factor is reduced to 30% due to compaction.

15.1.3.3 Moisture Content

The moisture content reflects the amount of water that is present within the rock formation. It affects the estimation of haul truck requirements and must be considered during the payload calculations. The moisture content is also an important factor for the process water balance.

Since the mineral reserves are estimated using the dry density, they are not affected by the moisture content value. A moisture content of 5% was used for the FSU. This value is typical for similar projects in the region.

15.1.3.4 Mill Recovery and Concentrate Grade

The mill recovery is a function of the head grade and is calculated using the following formula. The average mill recovery for the mine plan is 90.7%, and the concentrate grade is 97.8% Cg. The conversion from ore tonnage to concentrate tonnage is calculated according to Equation 15.1.

$$Concentrate\ Tonnage = \frac{Ore\ Tonnage\ (t) \times Cg\ Grade\ (\%) \times Mill\ Recovery(\%)}{Concentrate\ Grade\ (\%)}$$

Equation 15.1

15.2 Open Pit Optimisation

The first step in the mineral reserve estimate is to carry out a pit optimisation analysis. The pit optimisation analysis uses economic criteria to determine the cut-off grade and the extent of the deposit which can be mined profitably.

The pit optimisation analysis was completed using the MSOPit module of HxGN MinePlan®. The optimizer uses the Pseudoflow algorithm to determine the economic pit limits based on input of mining and processing costs, and revenue per block. In compliance with NI 43-101 guidelines regarding the Standards of Disclosure for Mineral Projects, only blocks classified in the Measured and Indicated categories drive the pit optimisation. Inferred resource blocks are treated as waste, bearing no economic value.

Table 15.1 presents the parameters used for the pit optimisation analysis. All figures are in Canadian Dollars. The cost and operating parameters that were used are preliminary estimates for developing the economic pit were derived from the 2014 Feasibility Study and adjusted for inflation. The cost in the Table 15.1 should not be confused with the operating costs subsequently developed for the

FSU and presented in Section 21. These costs and parameters were compared with final FSU values and deemed appropriate to use for pit optimisation.

Table 15.1 – Pit Optimisation Parameters

Item	Unit	Value
Mining Cost (Overburden)	$/t (mined)	3.71
Mining Cost (Waste)	$/t (mined)	5.40
Mining Cost (Ore)	$/t (mined)	5.91
Processing Cost	$/t (milled)	34.42
Transportation Cost	$/t (concentrate)	265.00
General Administration Cost	$/t (milled)	10.53
Concentrate Basket Sales Price	$/t (concentrate)	1,375
Mill Recovery	%	90.7
Concentrate Grade	%	97.8
Pit Slope[1]	degree	45 and 48

Note: 1 See Section 16.1 for details.

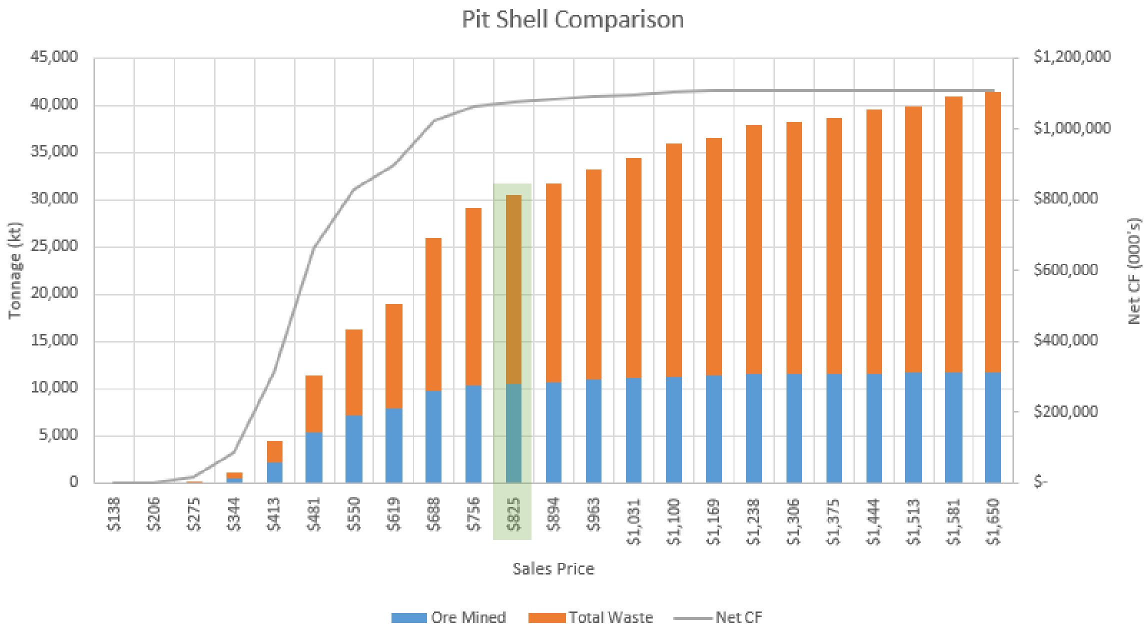
For the purpose of pit optimizations and pit designs, a conservative price of $1,375 per tonne of graphite concentrate was used. This is lower than the final economic analysis prices used of $1,659 USD. While this leaves upside potential, the final ultimate pit is reasonable with respect to reporting of mineral reserves.

The pit optimisation analysis considered the Cg grades after mining dilution. Using the cost and operating parameters, a series of 23 pit shells was generated by varying the selling price (revenue factor) from $138 to $1,650/t of concentrate, as shown in Table 15.2. The pit associated with a revenue factor of 0.60 (highlighted in orange) was selected to guide the pit design. Figure 15.2 depicts a graphical representation of Table 15.2. Figure 15.3 shows a section through the deposit with several of the pit shells.

Table 15.2 – Pit Optimisation Results

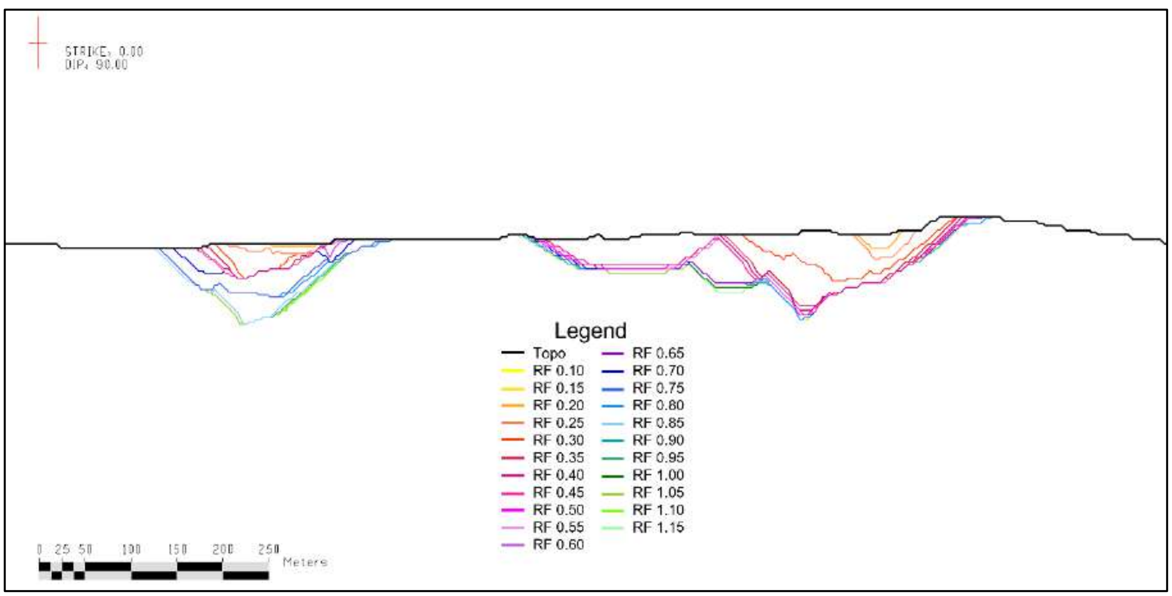
Revenue Factor	Selling Price ($/t)	Ore (Mt)	Cg (%)	Waste (Mt)	Stripping Ratio	Conc. (Mt)	Net CF ($M)	Mine Life (y)
0.10	137.50	0	0	0	0	0	0	0
0.15	206.25	0	0	0	0	0	0	0
0.20	275.00	0.1	26.97	0.1	1.02	0.02	17.9	0.4
0.25	343.75	0.5	23.96	0.6	1.35	0.10	86.5	2.0
0.30	412.50	2.1	19.48	2.2	1.03	0.39	310.8	7.7
0.35	481.25	5.3	17.55	6.0	1.12	0.87	663.3	17.4
0.40	550.00	7.1	16.96	9.2	1.30	1.11	831.1	22.3
0.45	618.75	7.9	16.64	11.0	1.40	1.22	897.1	24.4
0.50	687.50	9.7	16.03	16.3	1.68	1.44	1,024.8	28.8
0.55	756.25	10.3	15.88	18.8	1.83	1.51	1,063.0	30.3
0.60	825.00	10.6	15.79	20.0	1.89	1.55	1,077.8	30.9
0.65	893.75	10.7	15.76	21.0	1.96	1.57	1,086.0	31.3
0.70	962.50	10.9	15.72	22.4	2.06	1.59	1,093.8	31.7
0.75	1,031.25	11.0	15.67	23.4	2.12	1.60	1,098.6	32.0
0.80	1,100.00	11.3	15.54	24.7	2.19	1.63	1,105.2	32.5
0.85	1,168.75	11.3	15.52	25.3	2.23	1.63	1,106.9	32.7
0.90	1,237.50	11.5	15.47	26.5	2.31	1.65	1,108.9	32.9
0.95	1,306.25	11.5	15.46	26.8	2.33	1.65	1,109.2	33.0
1.00	1,375.00	11.5	15.45	27.1	2.35	1.65	1,109.4	33.1
1.05	1,443.75	11.6	15.41	28.0	2.41	1.66	1,109.2	33.2
1.10	1,512.50	11.6	15.41	28.3	2.43	1.66	1,109.3	33.3
1.15	1,581.25	11.7	15.35	29.3	2.49	1.67	1,108.3	33.4
1.20	1,650.00	11.8	15.34	29.6	2.52	1.67	1,107.9	33.5

Figure 15.2 – Pit Optimisation Comparison



Source: DRA 2023

Figure 15.3 – Pit Shell Cross-Sections



Source: DRA 2023

The chosen pit shell contains 10.6 Mt of Measured and Indicated Mineral Resources with a Cg grade of 15.79% and a stripping ratio of 1.9 to 1. Mining additional resources with an open pit beyond the limits of this pit shell increases the stripping ratio but does not provide a significant increase in

Net Cashflow. Upon completion of the FSU, DRA confirmed that the pit optimisation exercise was still valid using the updated cost estimate developed in the Study.

15.2.1 Cut-Off Grade

Using the economic parameters presented in Table 15.1 and Equation 15.2, the open pit cut-off grade (COG) was calculated to be 5.1% Cg. The COG is used to determine whether the material being mined will generate a profit after the mining, processing, transportation, and G&A costs. Material that is mined below the COG grade is sent to the waste dump.

$$Cg\ COG\ (\%) = \frac{(Mining + Processing + G\&A)[\$/t] \times Concentrate\ Grade\ [\%]}{(Sale\ Price - Transportation\ Cost)\ [\$/t\ conc] \times Recovery\ [\%]}$$

Equation 15.2

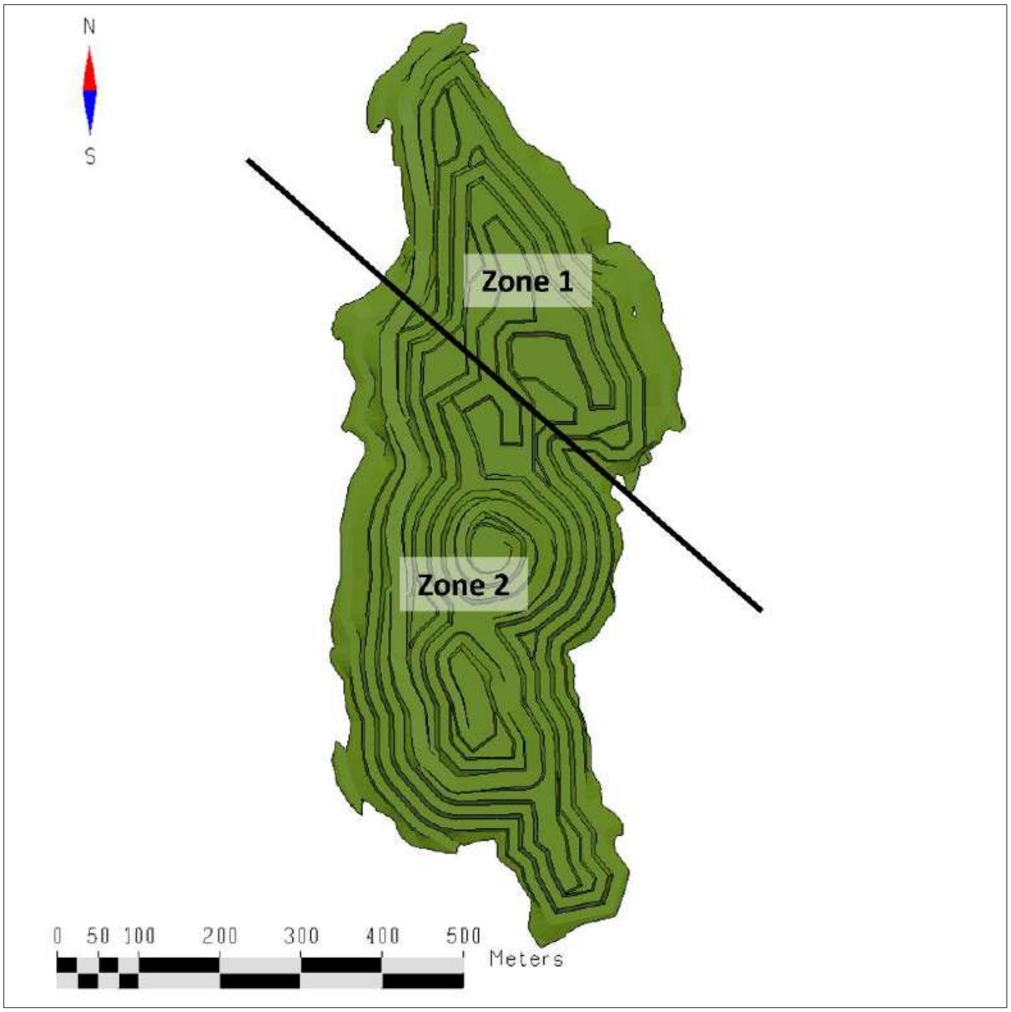
15.3 Open Pit Design

The next step in the mineral reserve estimation process is to design an operational pit that will form basis of the production plan. This pit design uses the chosen pit shell as a guideline and includes smoothing the pit wall, adding ramps to access the pit bottom and ensuring that the pit can be mined using the selected equipment. The following section provides the parameters that were used for the open pit design and presents the results.

15.3.1 Geotechnical Pit Slope Parameters

The geotechnical pit slope parameters were provided by Journeaux Assoc. in a report entitled “Preliminary Open Pit Slope Design – Lac Knife Deposit, July 24, 2014” and were adjusted to account for the shape of the pit. The pit was split into two (2) geotechnical zones, as shown in Figure 15.4.

Figure 15.4 – Geotechnical Zones



Source: DRA 2023

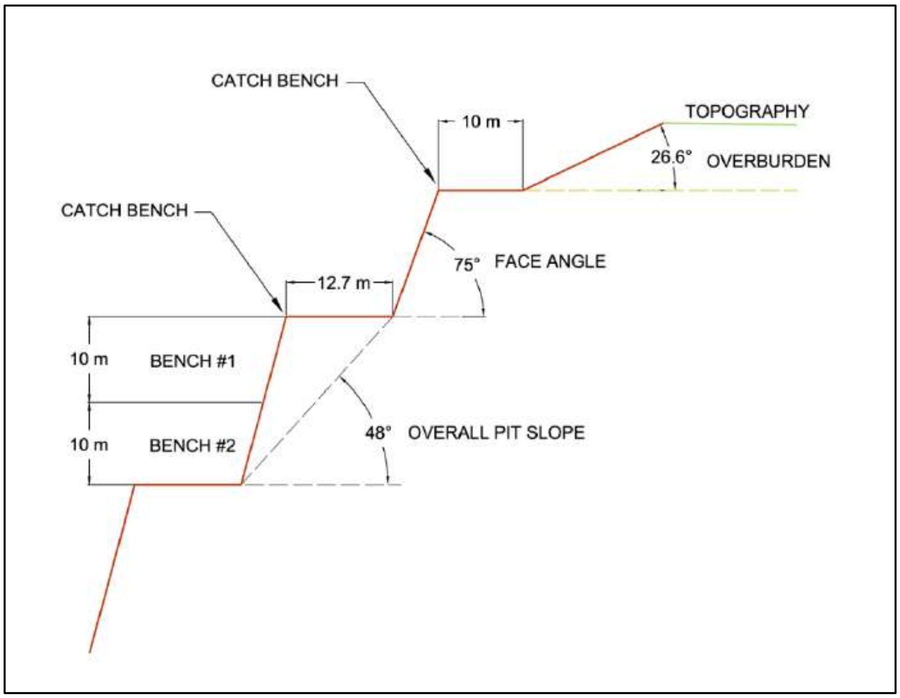
Table 15.3 – Geotechnical Parameters

Parameter	Unit	Zone 1	Zone 2
Face Angle	(°)	75	75
Bench Height	(m)	10	10
Bench Stacking		2	2
Bench Width	(m)	14.6	12.7
Pit Slope	(°)	45	48

The recommended slope through the overburden formation is 26.6° with a 10 m wide catch bench at the contact between the overburden and the bedrock. The pit wall configuration is presented in Figure 15.5.

The recommended slopes assume that pre-shearing blasting techniques will be used.

Figure 15.5 – Pit Wall Configuration



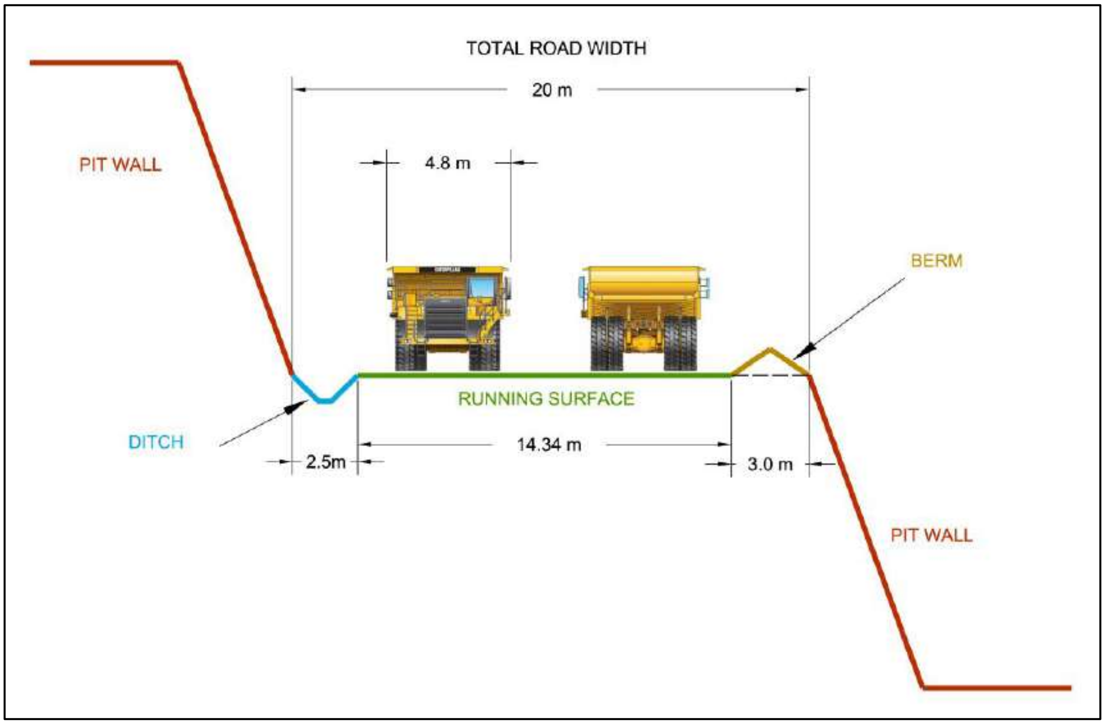
Source: DRA 2023

15.3.2 Haul Road Design

The ramps and haul roads were designed with an overall width of 20 m. For double lane traffic, industry practice indicates the running surface width to be a minimum of three (3) times the width of the largest truck. The overall width of a 40.0-tonne rigid frame haul truck is 4.8 m which results in a running surface of 14 m. The allowance for berms and ditches increases the overall haul road width to 20 m.

A maximum ramp grade of 10% was used. This grade is acceptable for a 40.0-tonne rigid frame haul truck. Figure 15.6 presents a typical section of the in-pit ramp design.

Figure 15.6 – Ramp Design



Source: DRA 2023

15.3.3 Mine Dilution and Ore Loss

In every mining operation, it is impossible to perfectly separate the ore and waste due to the large scale of the mining equipment and the use of drilling and blasting. To account for mining dilution, DRA calculated a diluted Cg grade value for each block of ore that neighbours a waste block.

The mining dilution was estimated at 10%, meaning that for each 5 m wide block of ore, 0.5 m of the neighbouring waste block was included as dilution. A Cg grade of 0% was used for the waste. The addition of mining dilution resulted in lowering the Cg grade of the mineral reserves from 15.71% to 14.94%. The average dilution for the entire mineral reserves was estimated at 5.1%.

The gain in tonnage that results from including the 0.5 m wide slice of waste was not included in the mineral reserves to remain conservative with the methodology of applying mining dilution. DRA assumed a mining loss of 5 %.

15.3.4 Minimum Mining Width

A minimum mining width of 15 m was considered for the open pit design. This is based on a 9 m turning radius for a 36.5-tonne haul truck plus several metres on each side for safety.

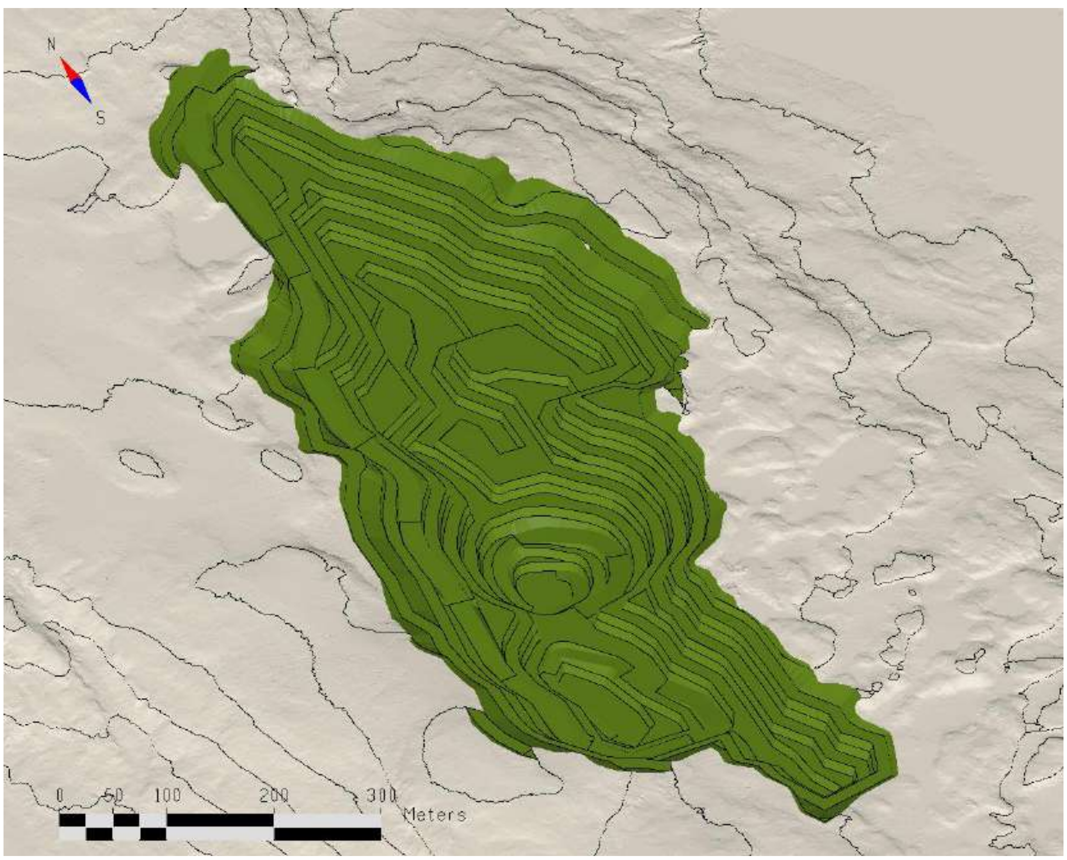
15.3.5 Open Pit Design Results

The pit that has been designed for the Lac Knife deposit is approximately 1,130 m long and 400 m wide at surface with a maximum pit depth of 150 m. The total surface area of the pit is roughly 319,000 m^2. The overburden thickness averages 5 m and ranges from 1 to 17 m.

The main ramp starts at elevation 685 m and follows the West wall to the South. At level 600 m, the ramp splits into two. One single-lane ramp goes to the Southern mini-pit to level 580. The other ramp descends into the Northern mini pit to level 560 m. The latter is a double-lane ramp to 580 m followed by a single-lane ramp to 560 m. The deepest part of the open pit is at the 560 m elevation.

The closest point from the pit to Lac Knife is 330 m. Figure 15.7 presents the open pit design for the Lac Knife deposit.

Figure 15.7 – Lac Knife Open Pit Final Design



Source: DRA 2023

15.4 Mineral Reserve Estimate

The open pit design includes 9,310 kt of Probable Mineral Reserves at a grade of 14.97% Cg. To access these reserves, 4,719 kt of overburden and 19,073 kt of waste rock must be mined. This total waste quantity of 23,775 kt results in a stripping ratio of 2.6 to 1. Table 15.4 presents the mineral reserves for the Lac Knife deposit.

Table 15.4 – Lac Knife Mineral Reserves

Category	Tonnage (kt)	Cg Grade (%)
Proven	-	-
Probable	9,310	14.97
Proven and Probable	**9,310**	**14.97**

Notes:

1. Estimate of Mineral Reserves has been estimated by the Reserves QP.
2. The Mineral Reserves are reported in accordance with the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
3. The effective date of the estimate is March 6, 2023.
4. Mineral Reserves are included in Mineral Resources.
5. Pit shell was developed using a 45-degree pit slope, concentrate sales price of $1,375/t concentrate, mining costs of $5.91/t ore, $5.40/t waste, and $3.71/t overburden, processing costs of $34.42/t processed, G&A cost of $10.53/t processed and transportation costs of $265/t concentrate, 90.7% process recovery and 97.8% concentrate grade and an assumed 50,000 tpa concentrate production.
6. The Mineral Reserves are inclusive of mining dilution and ore loss.
7. The open pit Mineral Reserves are estimated using a cut-off grade of 5.1% Cg.
8. The strip ratio for the open pits is 2.6 to 1.
9. The Mineral Reserves are stated as dry tonnes processed at the crusher.
10. All figures are in metric tonnes.
11. Totals may not add due to rounding.

16 MINING METHODS

The mining method selected for the Project is a conventional open pit, truck and shovel, drill and blast operation. Vegetation, topsoil and overburden will be stripped and stockpiled for future reclamation use. The ore and waste rock will be mined with 10 m high benches, drilled, blasted and loaded into rigid frame haul trucks with hydraulic excavators.

16.1 Geotechnical Pit Slope Parameters

The geotechnical pit slope parameters were presented in Section 15.3.1.

16.2 Hydrogeology and Hydrology Parameters

This Section has not changed from 2014 Technical Report available on SEDAR entitled "NI 43-101 Technical Report on the Lac Knife Graphite Feasibility Study Québec – Canada" Met-Chem Project # 2013-064, issued on August 8, 2014, prepared for Focus Graphite Inc.

The four (4) sources of water that affect the mining operation are surface run-off, rainfall, snowmelt and groundwater. The quantity for each of these sources of water was estimated for each period of the mine plan in order to calculate the mine dewatering requirements:

16.2.1 Surface Run-off

The topography around the mine area is favourable for the surface water run-off to flow away from the open pit. In areas where the topography drains towards the pit, low berms will be constructed to redirect the water away.

16.2.2 Rainfall and Snowmelt

The amount of rainfall and snowmelt that is expected in the area of the Project for each month was provided in the Preliminary Economic Assessment for the Project, October 2013. Using this data, DRA estimated that the total annual precipitation around the open pit averages 807 mm. Using the surface area of the open pit for each period of the mine plan, DRA estimated that the amount of precipitation that is expected to be collected in the open pit will range from 133 m^3/d during the first few years of the operation to 442 m^3/d at the end of the mine life. These figures are averages and do not represent years of extreme precipitation. The mine may have to shut down temporarily during periods of extreme rainfall.

16.2.3 Groundwater

The expected groundwater inflows were estimated by Golder Associated Ltd. based on the hydrogeological field investigation program from 2013. Golder created a numerical groundwater model using the FEFLOW software which was used to estimate the groundwater inflows for each five (5) year period of the mine plan. The groundwater inflows range 100 to 230 m^3/d.

16.2.4 PUMPING REQUIREMENTS

The mine dewatering pumping requirements were designed for the month of June which is expected to receive the maximum precipitation and groundwater infiltrations. The total precipitation and groundwater during June are estimated to range from 503 to 799 m^3/d.

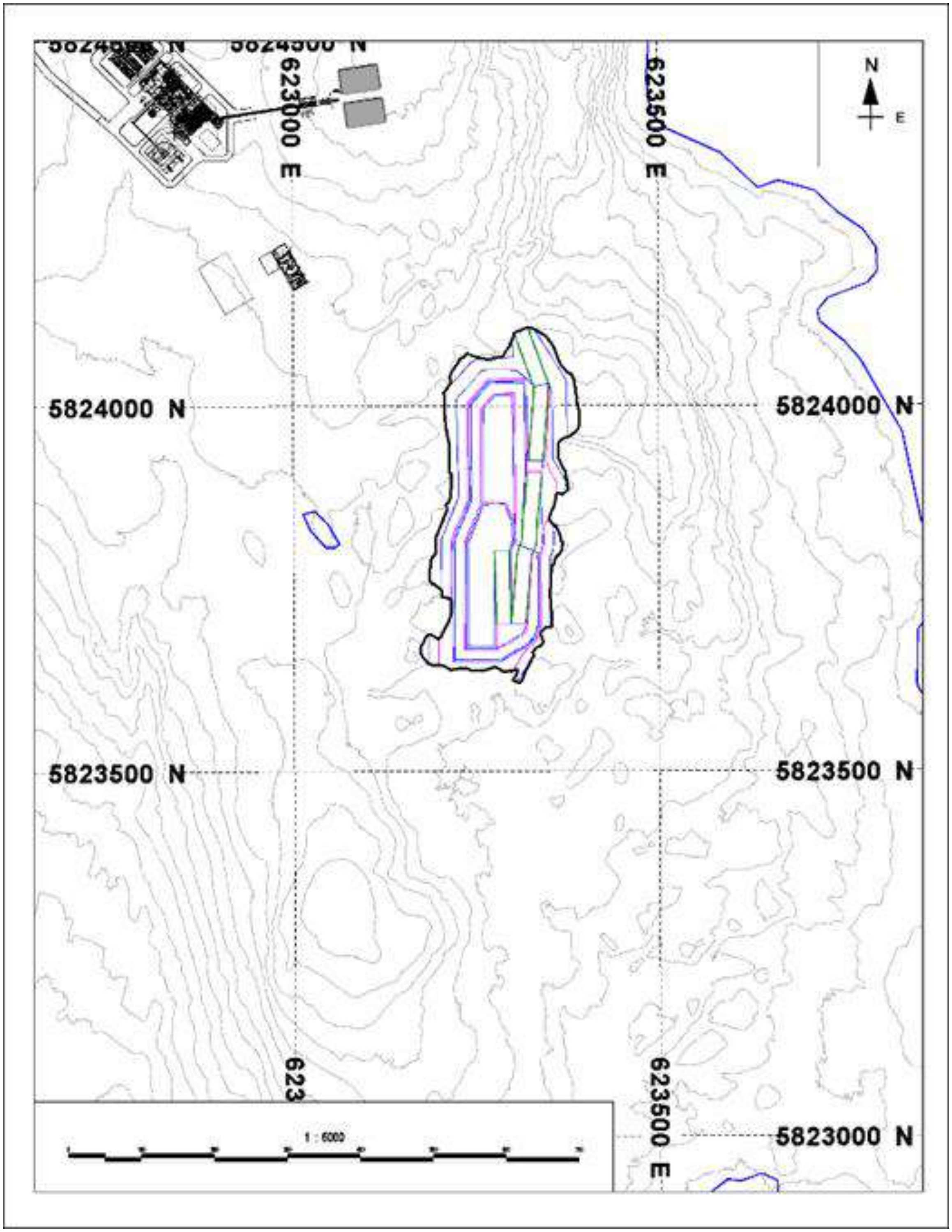
The precipitation, snowmelt and groundwater will be collected in a sump that will be established on the lowest point of the pit floor. The water will be pumped from the sump to the surface and directed to the sedimentation basin which will be located to the south of the open pit.

The pump that has been selected for the mine dewatering is a Goodwin HL130 with a 220-kW motor. Based on the flow rate, pumping distance and head, one (1) pump can manage the quantities of water that will need to be pumped. A second pump has been added as a backup and to be used during periods of heavy rainfall. The cost to purchase and operate the pumps as well as piping and other accessories has been included in the mine capital and operating cost estimate presented in Section 21.

16.3 Phase Design

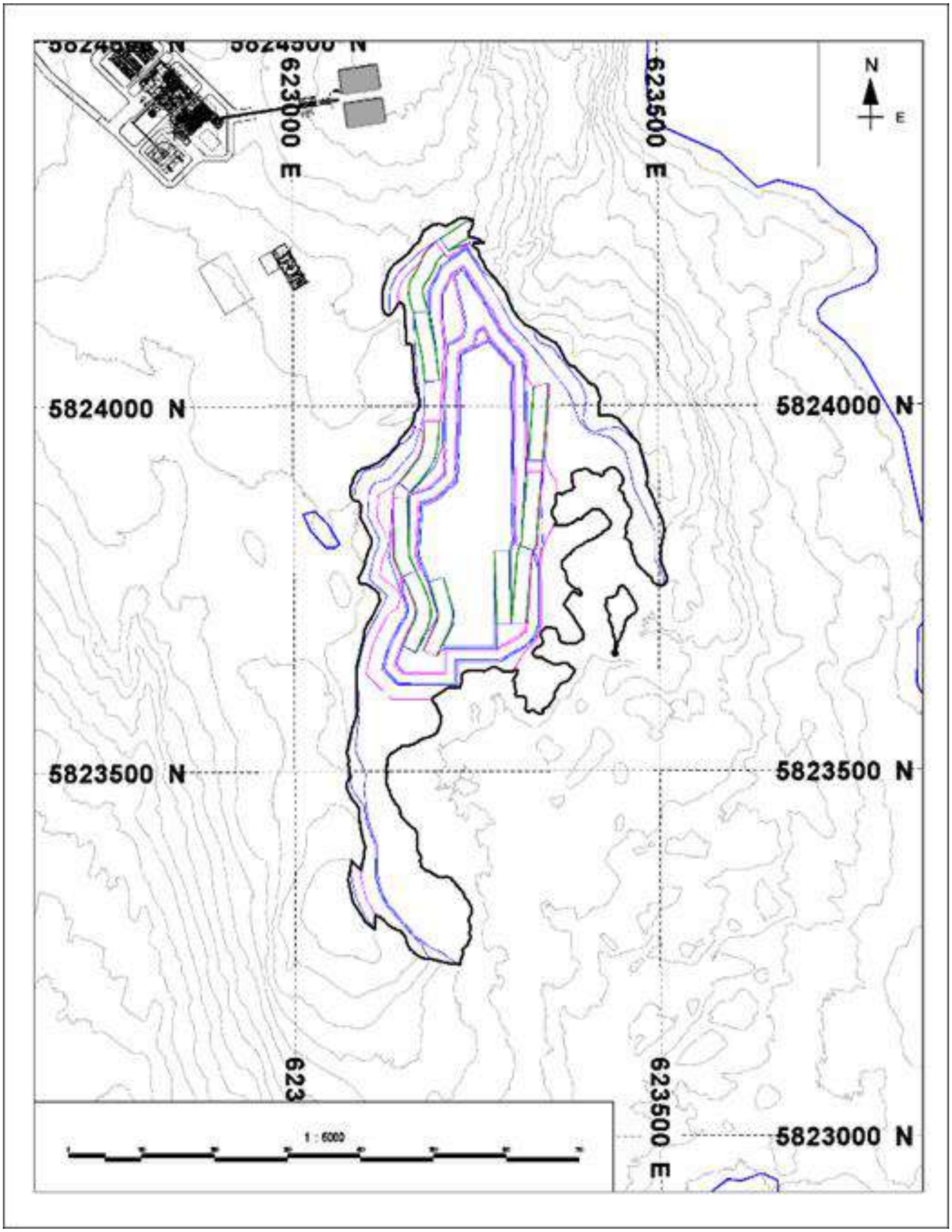
Phases were designed within the final pit design to guide the production schedule. Five (5) phases were designed, where the first phase is a starter pit. The Phases 1 to 5 are presented in Figures 16.1 to 16.5.

Figure 16.1 – Lac Knife Phase 1 Design



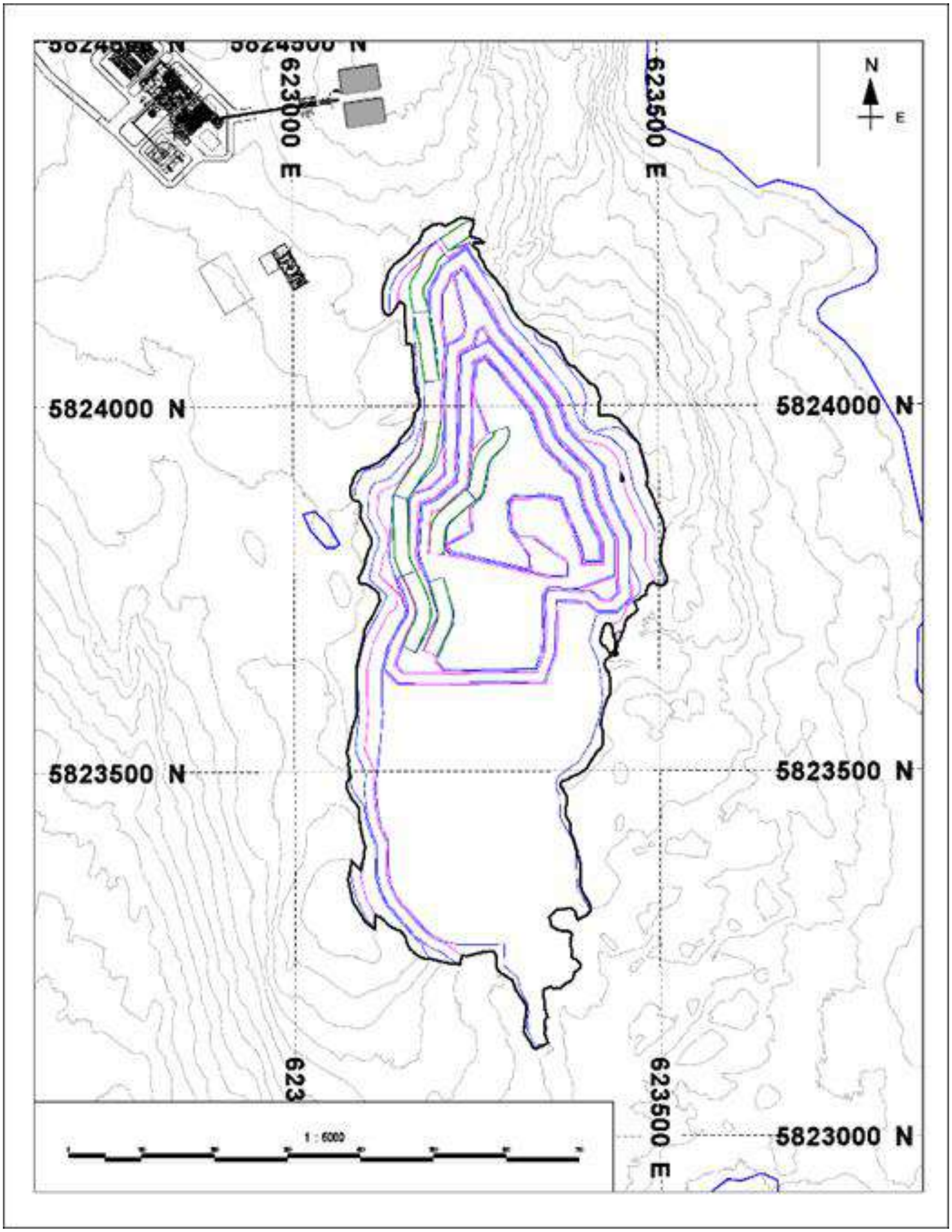
Source: DRA 2023

Figure 16.2 – Lac Knife Phase 2 Design



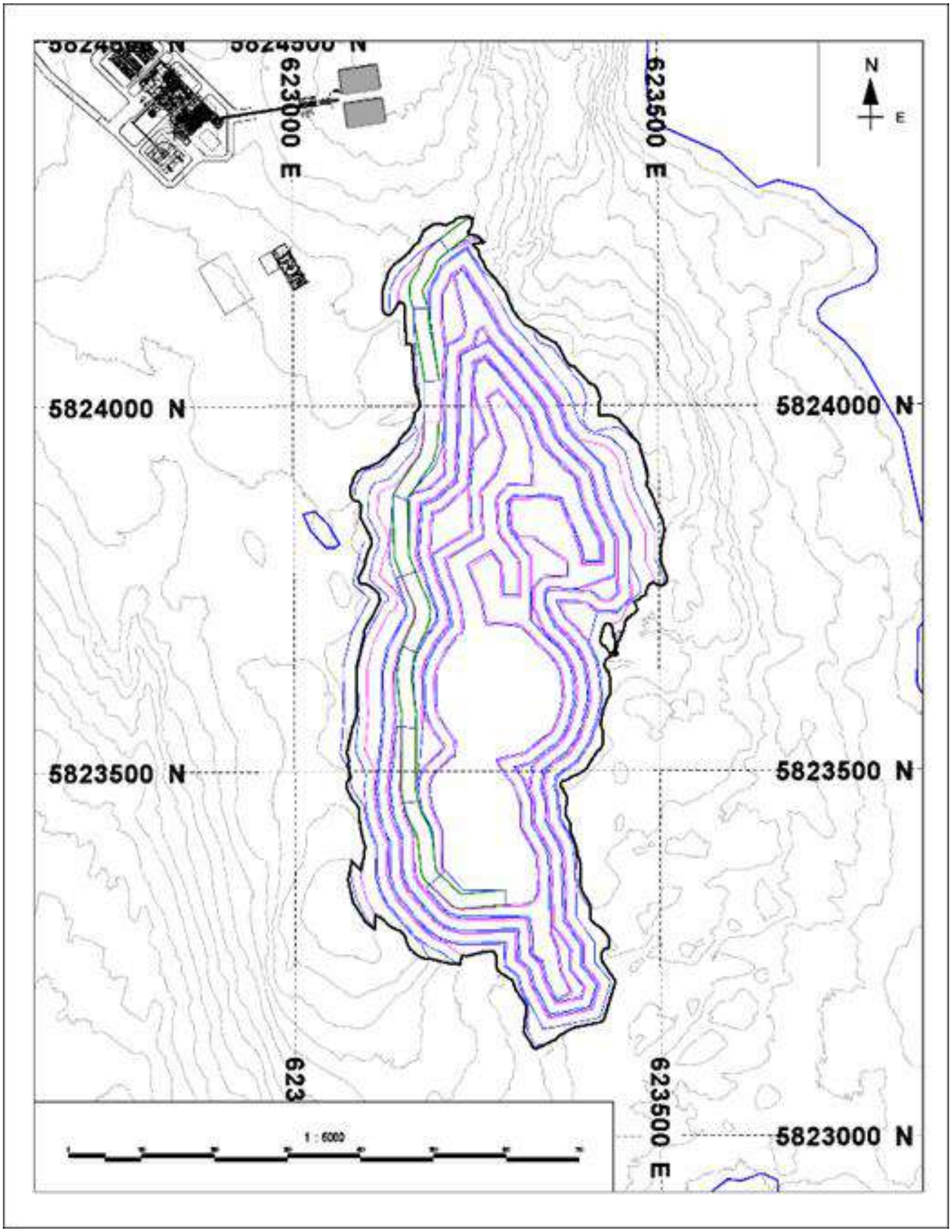
Source: DRA 2023

Figure 16.3 – Lac Knife Phase 3 Design



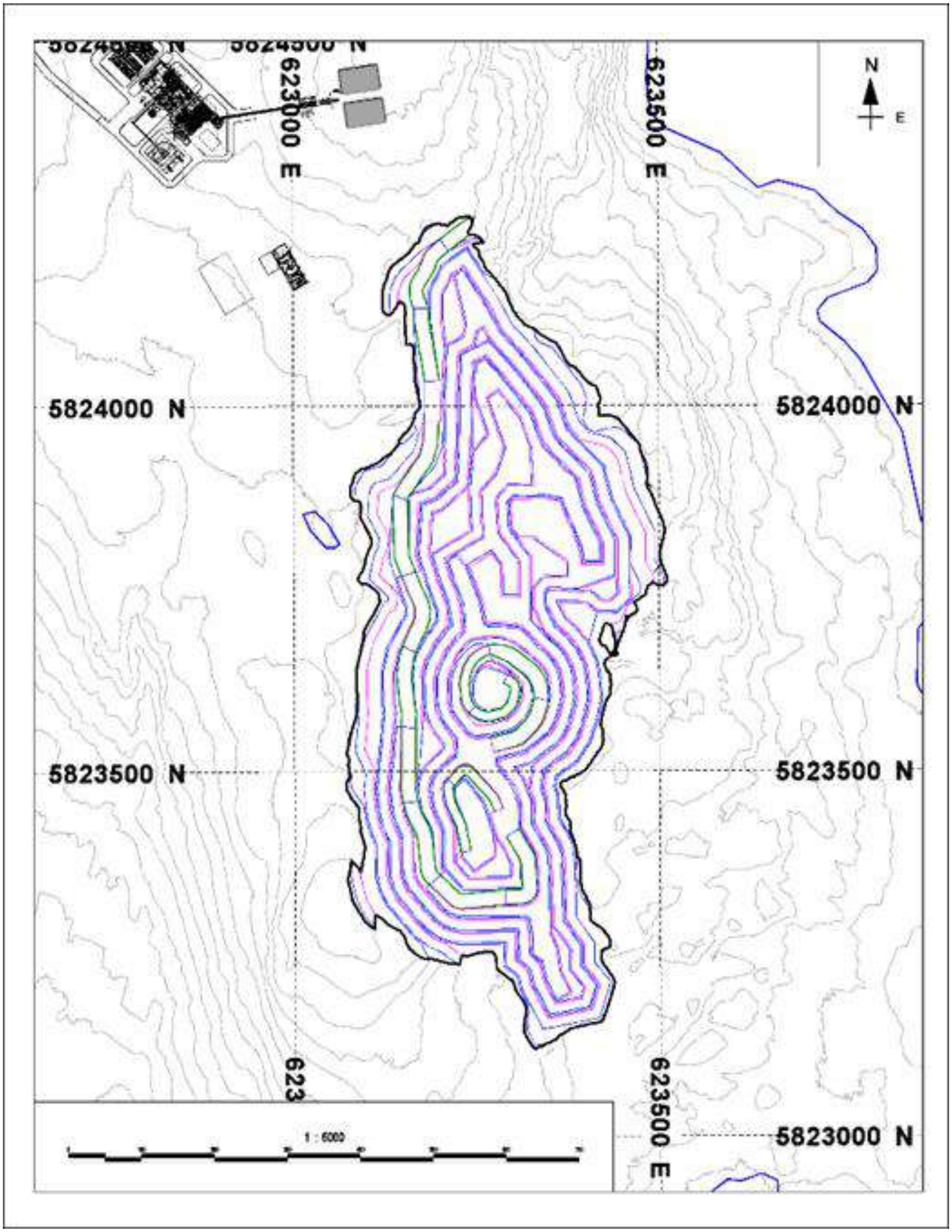
Source: DRA 2023

Figure 16.4 – Lac Knife Phase 4 Design



Source: DRA 2023

Figure 16.5 – Lac Knife Phase 5 Design



Source: DRA 2023

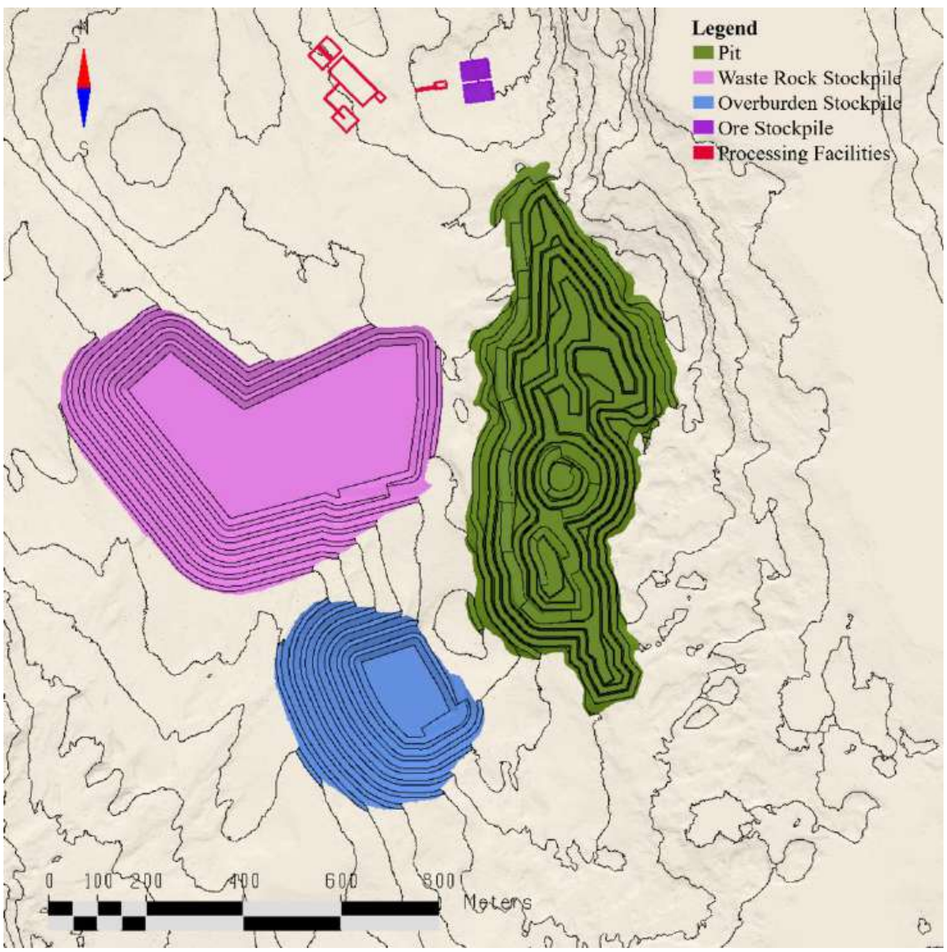
16.4 Stockpiles

Ore and waste stockpiles were designed for the Lac Knife project. The stockpile design parameters used in this FSU are the one from the "Lac Knife Graphite Feasibility Study - NI 43-101 Technical Report June 25, 2014". The design parameters are listed in Table 16.1 and the stockpile locations are presented in Figure 16.6.

Table 16.1 – Stockpile Design Parameters

Parameter	Unit	Value
Lift Width	m	10
Lift Height	m	10
Face Angle	°	34
Overall Slope Angle	°	26.6

Figure 16.6 – Stockpile Locations



Source: DRA 2022

16.4.1 Waste Rock and Overburden Stockpiles

A topsoil and overburden stockpile has been designed on the west side of the open pit, south of the plant site. The stockpile was designed with an overall slope of 26.6 (2H:1V), has a capacity of 3.0 Mm^3, a footprint area of 136,000 m^2, a top elevation of 710 m and a maximum height of 70 m. The stockpile material will be used for future land reclamation.

A waste rock pile has been designed on the west side of the open pit, between the plant site and the overburden stockpile. The waste rock pile was designed with an overall slope of 26.6 (2H:1V), has a capacity of 9.2 Mm^3, a footprint area of 330,000 m^2, a top elevation of 710 m and a maximum height of 60 m. The waste rock pile will be built in 10 m high lifts and compacted by a bulldozer.

Since the waste rock is considered potentially acid generating (PAG), all run-offs will be collected and directed to the water storage pond and is further described in Section 18 of the Report.

A summary of the waste stockpile capacities is presented in Table 16.2.

Table 16.2 – Waste Stockpile Capacities

Stockpile	Required Capacity		Design Capacity	
	(Mm^3)	(Mt)	(Mm^3)	(Mt)
Overburden	2.9	6.3	3.0	6.5
Waste Rock	8.9	19.2	9.2	19.8

16.4.2 Ore Stockpile

A short-term ore stockpile has been designed to the east of the crusher pad. The stockpile capacity of this stockpile is 6,500 m^3 which will contain 14,000 t of ore, as shown in Table 16.3, roughly two weeks of production. For the first two years of production, the mine required an ore storage capacity of 18,571 m^3 or 40,000 t. The excess will be temporarily kept inside the pit area.

Table 16.3 – Ore Stockpile Capacity

Design Capacity	
(m^3)	(t)
6,500	14,000

16.5 Mine Planning

The following section discusses the mine plan that was prepared for this FSU. This mine plan forms the basis of the mine capital and operating cost estimate presented in Section 21 and the financial Model in Section 22. The mine plan was established monthly for the first two years, then yearly until the end of the life of mine.

16.5.1 Mine Planning Parameters

16.5.1.1 Work Schedule

Since, the average annual material movement requirement is just under 1.3 Mt, the mine will be run on a 10 hour per day, 7 days a week, 52 weeks a year basis. The concentrator will be operated on 24 hours a day, 365 days a year basis. The short-term stockpile will be used to ensure a consistent concentrator feed.

16.5.1.2 Annual Production Requirements

The mine plan is based on an annual production of 50,000 tonnes of concentrate. The production in the first year of production was limited to 45,000 tonnes of concentrate (90% of full production), to account for start-up and commissioning.

16.5.2 Mine Production Schedule

Table 16.4 presents the mine production schedule that was developed for the 27-year life of the open pit mine. This schedule includes a pre-production phase of one (1) year which is required for overburden stripping, road construction and pit development. During this period, 1.0 Mt of overburden and 50 kt of waste rock will be mined. A total of 20 kt of ore will also be stockpiled during pre-production.

Figure 16.7 presents a chart showing the tonnages mined on an annual basis, and Table 16.4 present the production plan.

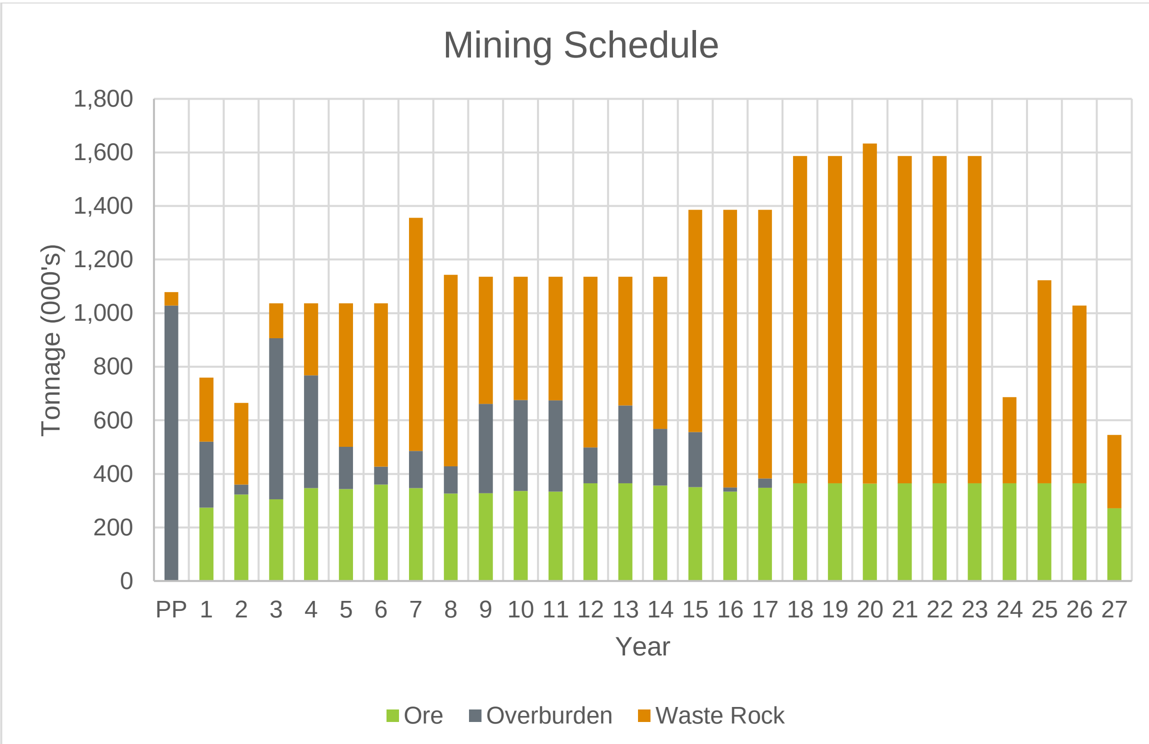
Figures 16.9 to 16.13 illustrate the end of period maps throughout the mine life. The extracted tonnage is shown in pink.

Table 16.4 – Mine Production Schedule

Description	Units	Pre-Prod	Year 01	Year 02	Year 03	Year 04	Year 05	Year 06	Year 07	Year 08	Year 09	Year 10	Years 11 - 15	Years 16 - 20	Years 21 - 25	Years 25-27	Total
Run of Mine Ore	**kt**	**-**	**274**	**323**	**305**	**347**	**343**	**360**	**347**	**326**	**327**	**337**	**1,770**	**1,775**	**1,824**	**650**	**9,310**
Cg	%	-	18.0	16.6	17.4	15.6	15.6	15.0	15.4	16.3	16.3	15.9	15.2	15.0	13.3	13.1	15.0
Mill Recovery	%	-	92.6	91.9	92.3	91.2	91.3	90.8	91.1	91.7	91.7	91.4	91.0	90.8	89.4	89.3	90.7
Concentrate	kt	-	46.7	50.2	50.1	50.3	50.1	50.3	49.8	50.0	50.0	50.0	250.4	246.9	221.2	78.1	1,294
Overburden	kt	1,028	246	37	601	420	158	67	138	102	334	339	1,183	49	1	-	4,702
Waste Rock	kt	51	240	306	130	269	535	609	871	715	475	460	2,978	5,754	4,743	937	19,073
Total Waste	**kt**	**1,079**	**485**	**343**	**731**	**689**	**693**	**676**	**1,009**	**817**	**809**	**800**	**4,161**	**5,804**	**4,744**	**937**	**23,775**
Total Material Mined	**kt**	**1,079**	**760**	**665**	**1,036**	**1,036**	**1,037**	**1,036**	**1,356**	**1,143**	**1,136**	**1,136**	**5,931**	**7,578**	**6,568**	**1,587**	**33,085**
Stripping Ratio		-	1.8	1.1	2.4	2.0	2.0	1.9	2.9	2.5	2.5	2.4	2.4	3.3	2.6	1.4	2.6

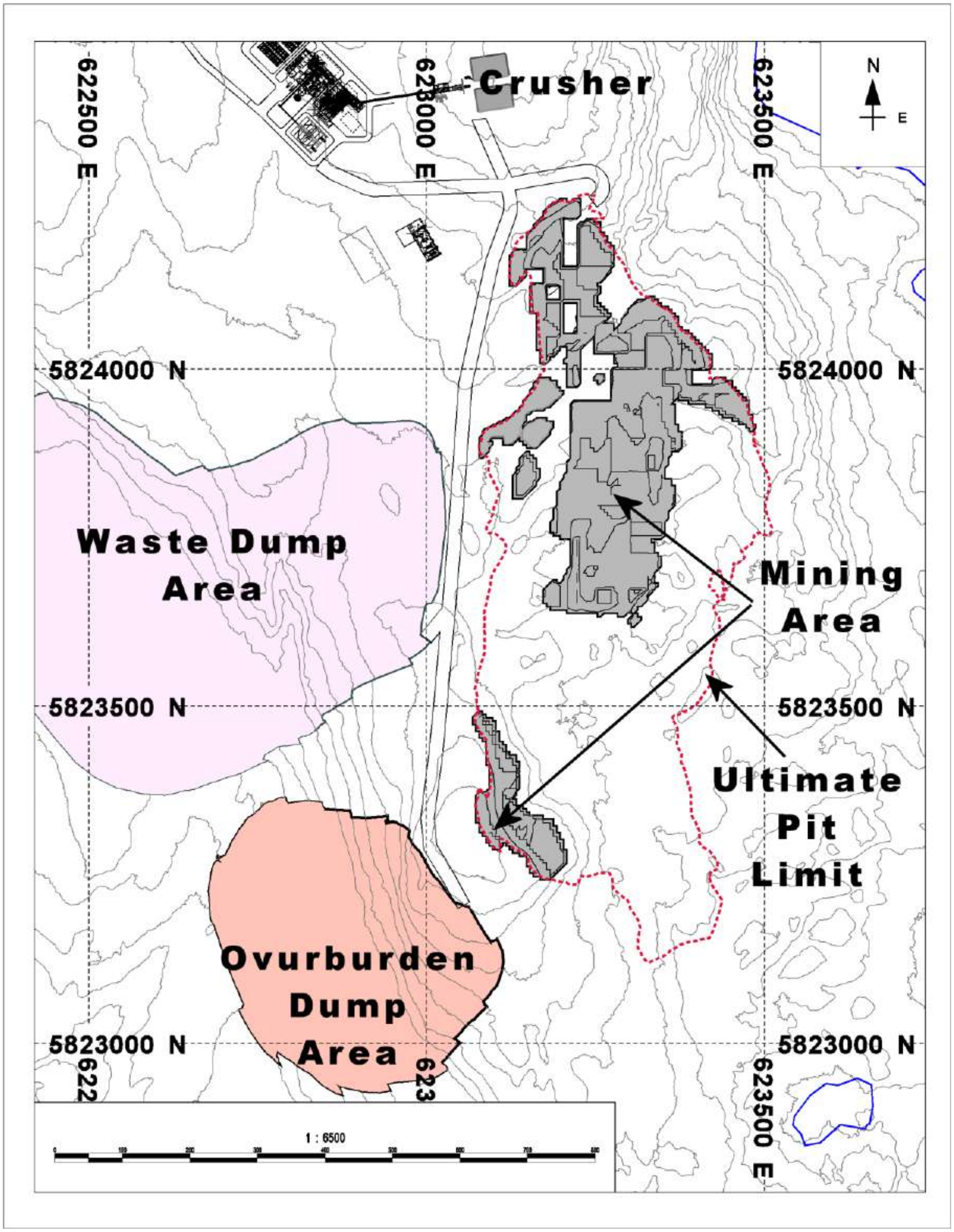
Notes
1. Run of mine tonnages are on a dry tonne basis
2. Figures have been rounded to an appropriate level of accuracy; therefore, some sums may not compute as shown

Figure 16.7 – Annual Mining Rate



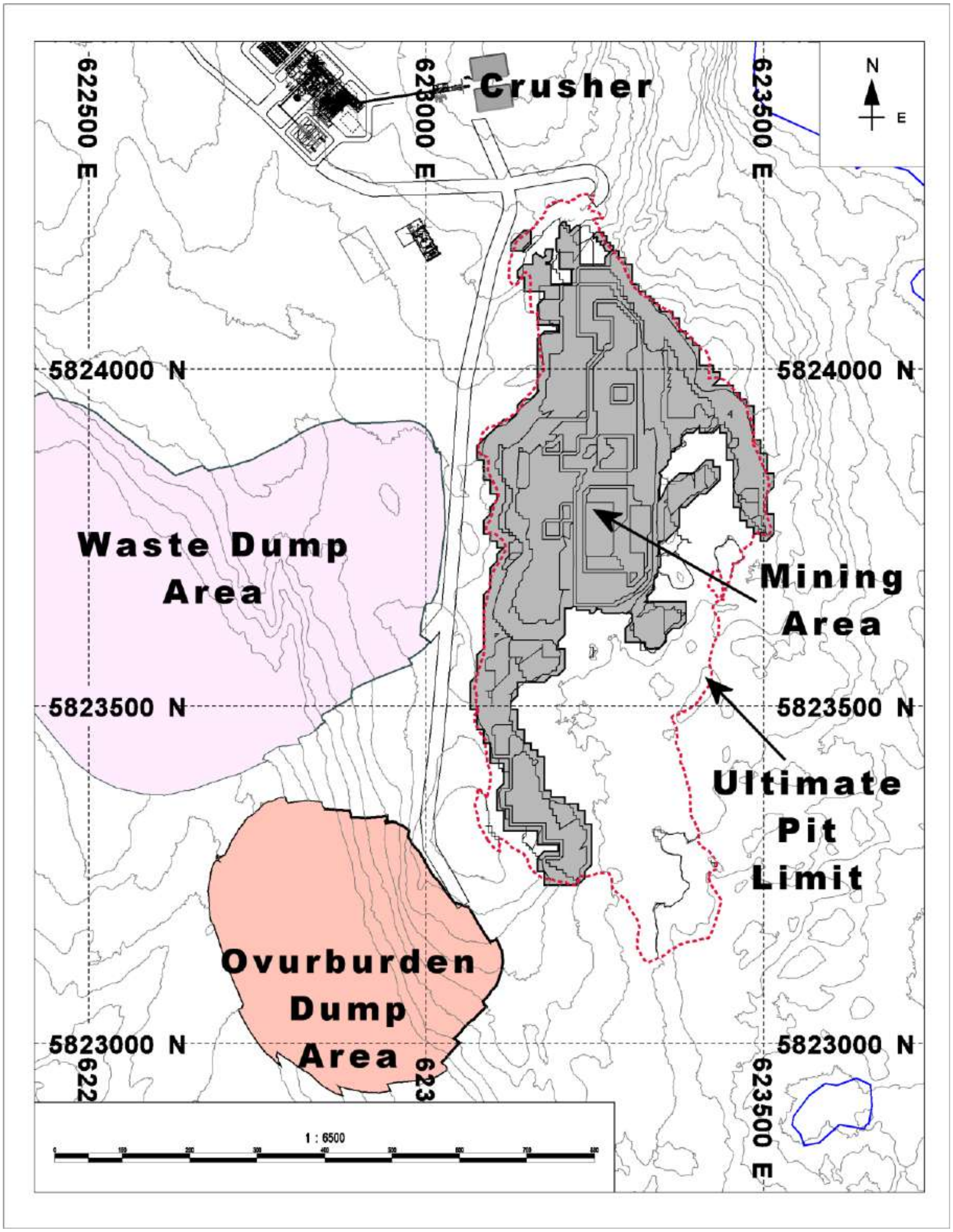
Source: DRA 2023

Figure 16.8 – End of Pre-Production



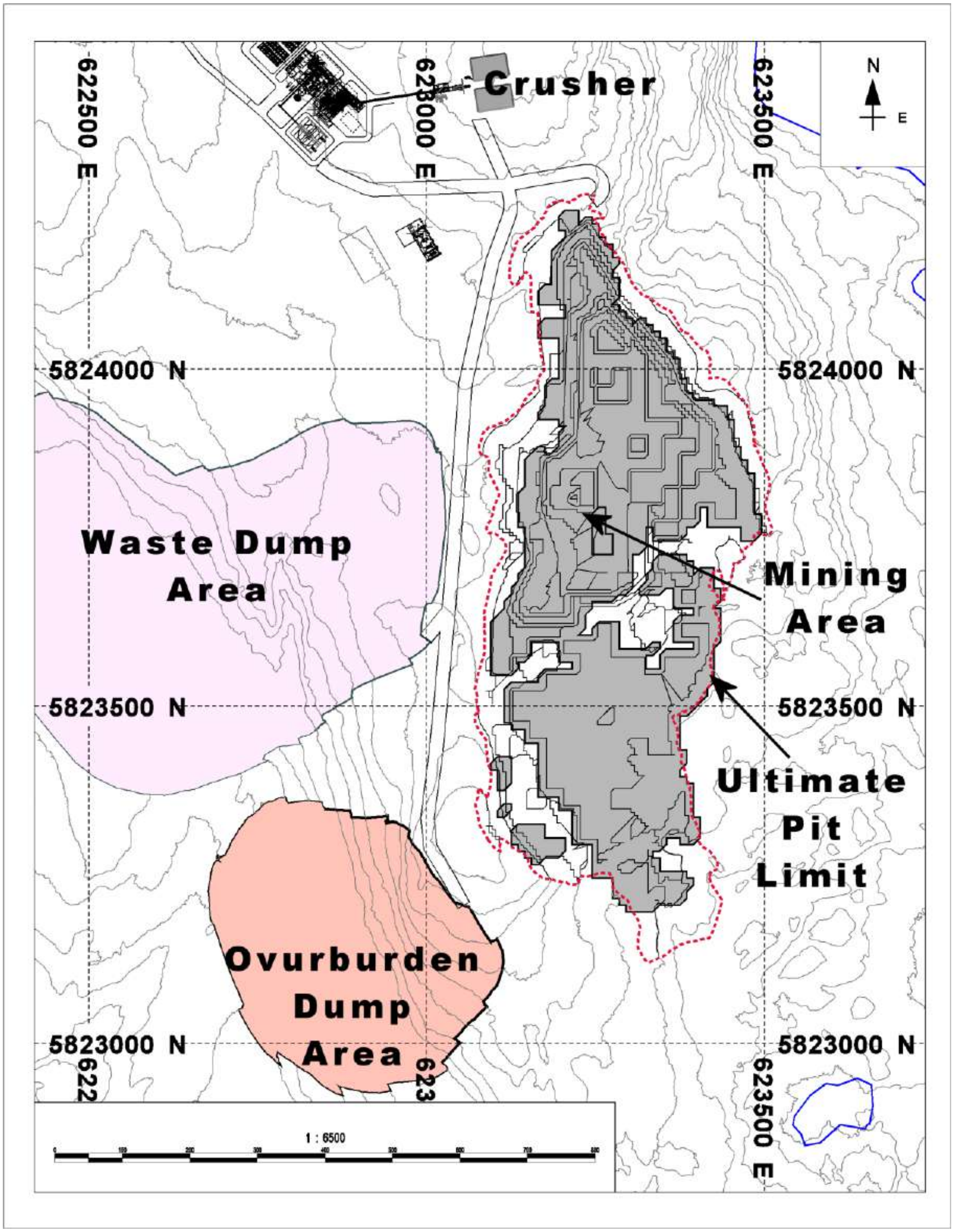
Source: DRA 2023

Figure 16.9 – End of Year 5



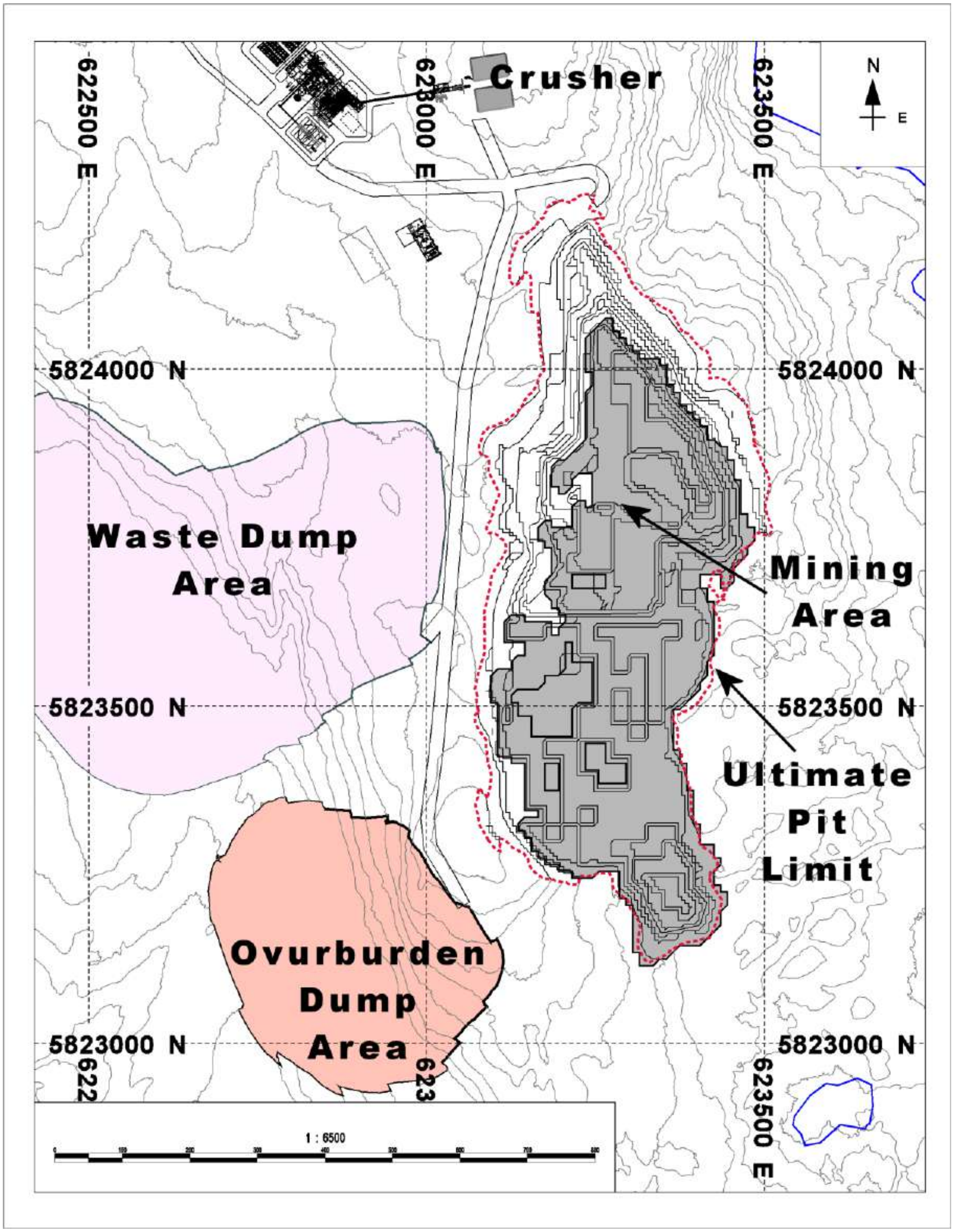
Source: DRA 2023

Figure 16.10 – End of Year 10



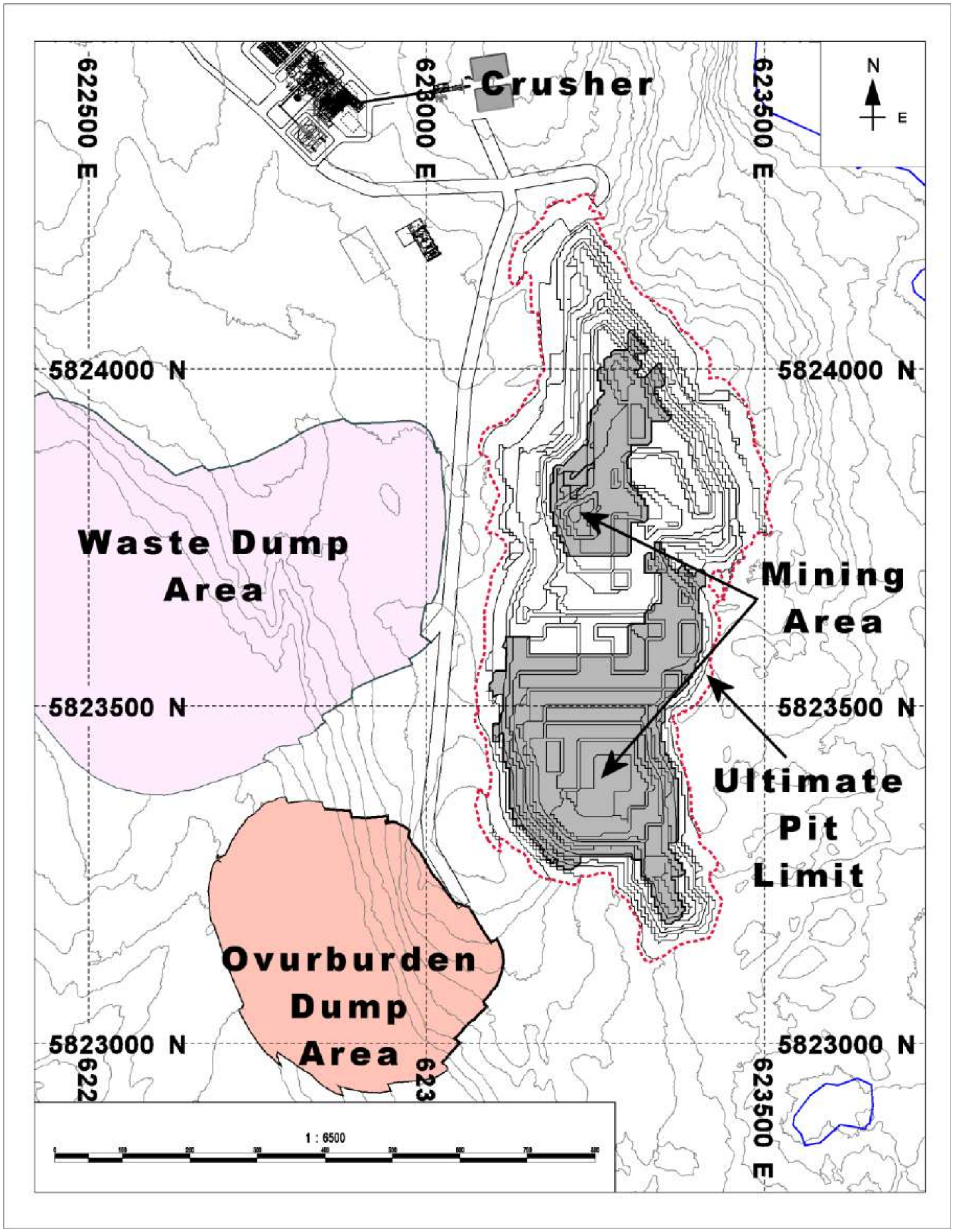
Source: DRA 2023

Figure 16.11 – End of Year 15



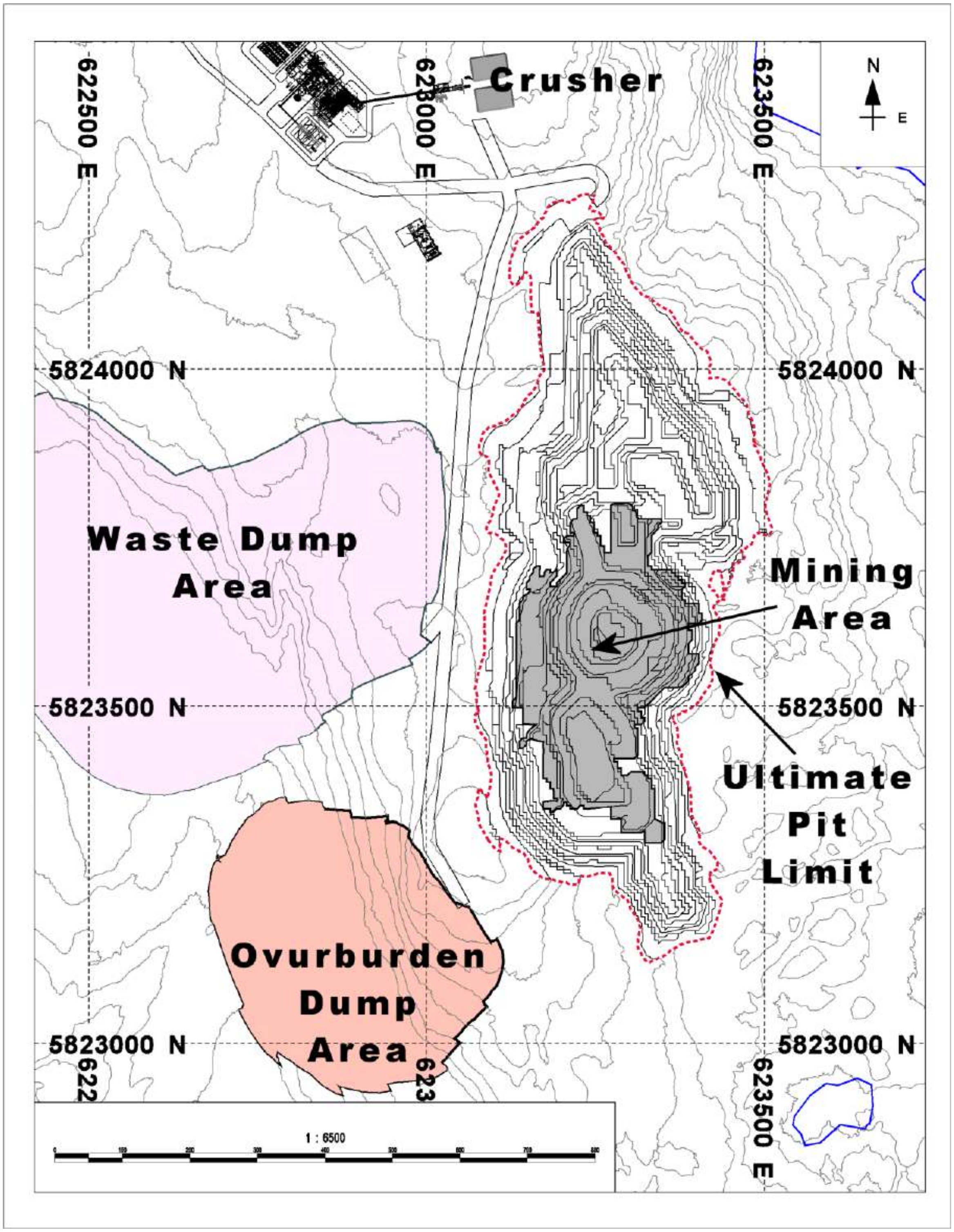
Source: DRA 2023

Figure 16.12 – End of Year 20



Source: DRA 2022

Figure 16.13 – End of Year 27



Source: DRA 2023

16.6 Mine Equipment Fleet and Personnel

The following section presents the mine equipment selection and methodology that used to estimate the fleet requirements for the owner operation as well as the personnel requirements. The mine fleet and personnel are presented in the following section below.

Table 16.5 lists the type of fleet for this Project. The owner fleet is based on a seven (7) days per week, ten (10) hours per day work schedule, operating year-round. The mining equipment will be equipped with a special heating system to minimise start up time at the beginning of each shift.

Table 16.5 – Mining Equipment Fleet

Major Equipment	Typical Model	Description	Unit
Haul Truck	770G	Payload – 40.0 t	2
Hydraulic Excavator	395	Bucket – 4 m³	1
Production Drill	MD 5125	114 mm hole	1
Wheel Loader	988XE	Bucket – 6 m³	1
Track Dozer	D8T		1
Road Grader	150		1
Water Truck	Lion 8	20,000-litre	1
Powder Truck	Ford F150		1
Mechanical and Lube Truck	Lion 6		1
Pickup Truck	Ford F150		5
Dewatering Pump	HL130M	Electric	2

16.6.1 1614HAUL TRUCKS

The haul truck selected for the Project is a rigid frame mining truck with a payload of 40.0 tonnes. This size truck was selected since it matches well will the production requirements and results in a manageable fleet size.

The following parameters were used to calculate the number of trucks required to carry out the mine plan. These parameters result in 1,198 working hours per year for each truck as is presented in Table 16.6.

- Mechanical Availability – 85%;
- Utilisation – 90% (non-utilised time is accrued when the truck is not operating due to poor weather, blasting, excavator relocation and no operator available);
- Nominal Payload – 40.0 tonnes (25.9 m^3 heaped);

- Shift Schedule – One (1), ten (10) hour shift per day, seven (7) days per week;
- Operational Delays – 55 min/shift (this includes 15 minutes for shift change and 40 minutes for lunch and coffee breaks.
- Job Efficiency – 90% (54 min/h; this represents lost time due to queuing at the shovel and dump as well as interference on the haul road);
- Rolling Resistance – 3%.

Table 16.6 – Truck Hours (h/y)

Description	Hours	Details
Total Hours	3,640	7 days per week, 10 hours per day, 52 weeks per year
Down Mechanically	546	15% of total hours
Available	3,094	Total hours minus hours down mechanically
Standby	309	10% of available hours (represents 90% utilisation)
Operating	2,785	Available hours minus standby hours
Operating Delays	255	55 min/shift
Net Operating Hours	2,529	Operating hours minus operating delays
Working Hours	2,150	51 min/hr of net operating hours (reflects job efficiency)

Haul routes were generated for each period of the mine plan to calculate the truck requirements. These haul routes were used with Talpac to calculate the travel time required for a 40.0-tonne haul truck to complete each route. Table 16.7 shows the various components of a truck's cycle time. The load time is calculated using a hydraulic excavator with a 4 m^3 (8-tonne) bucket as the loading unit. This size excavator which is discussed in the following section loads ore and waste rock in a 40.0-tonne haul truck in five (5) passes, six (6) for overburden.

Table 16.7 – Truck Cycle Time

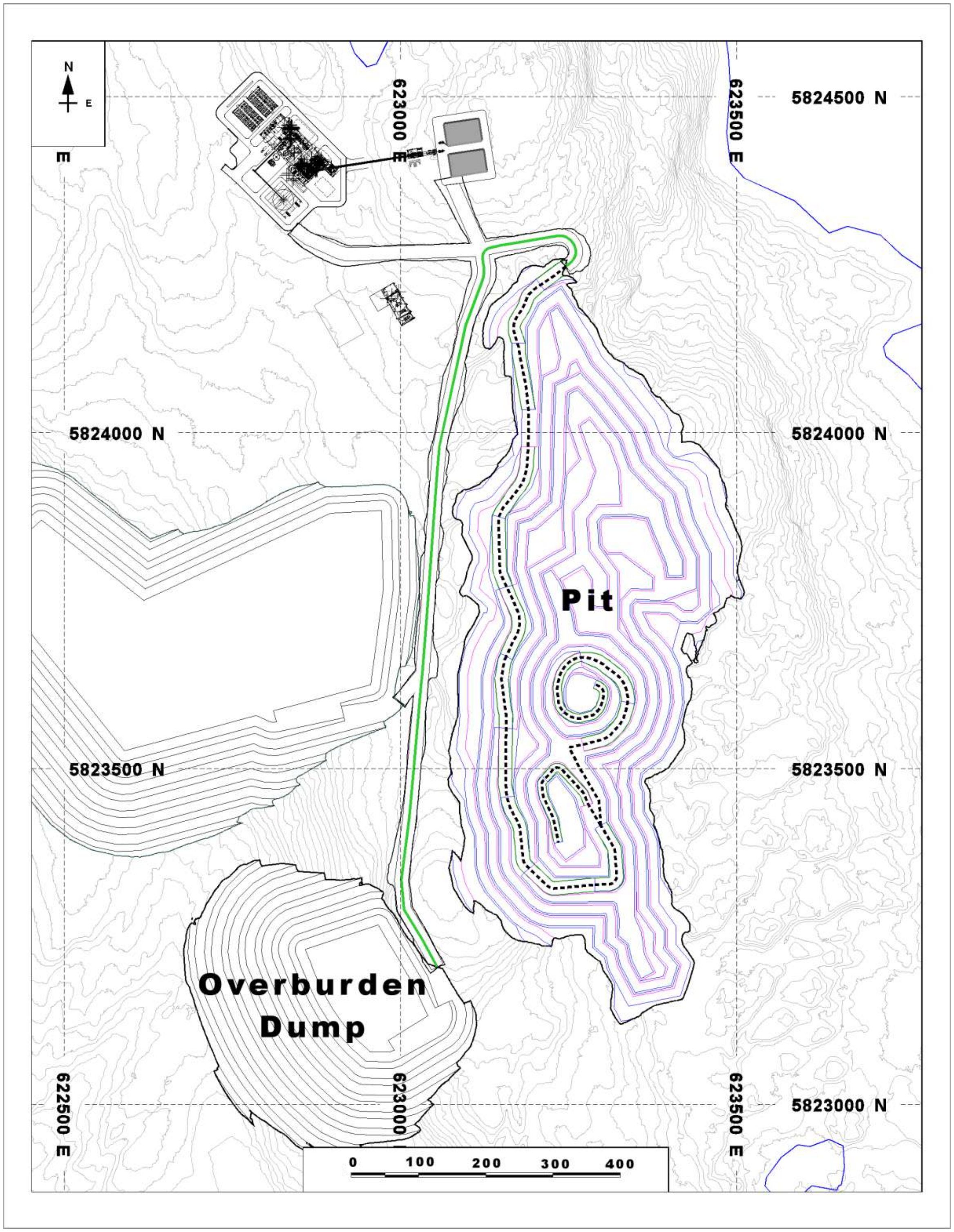
Activity	Duration (sec)
Spot @ Excavator	30
Load Time[1]	150
Travel Time	Calculated by Talpac
Spot @ Dump	30
Dump Time	30

1. Five (5) Passes @ 30 sec/pass

Haul productivities (tonnes per work hour) were calculated for each haul route using the truck payload and cycle time.

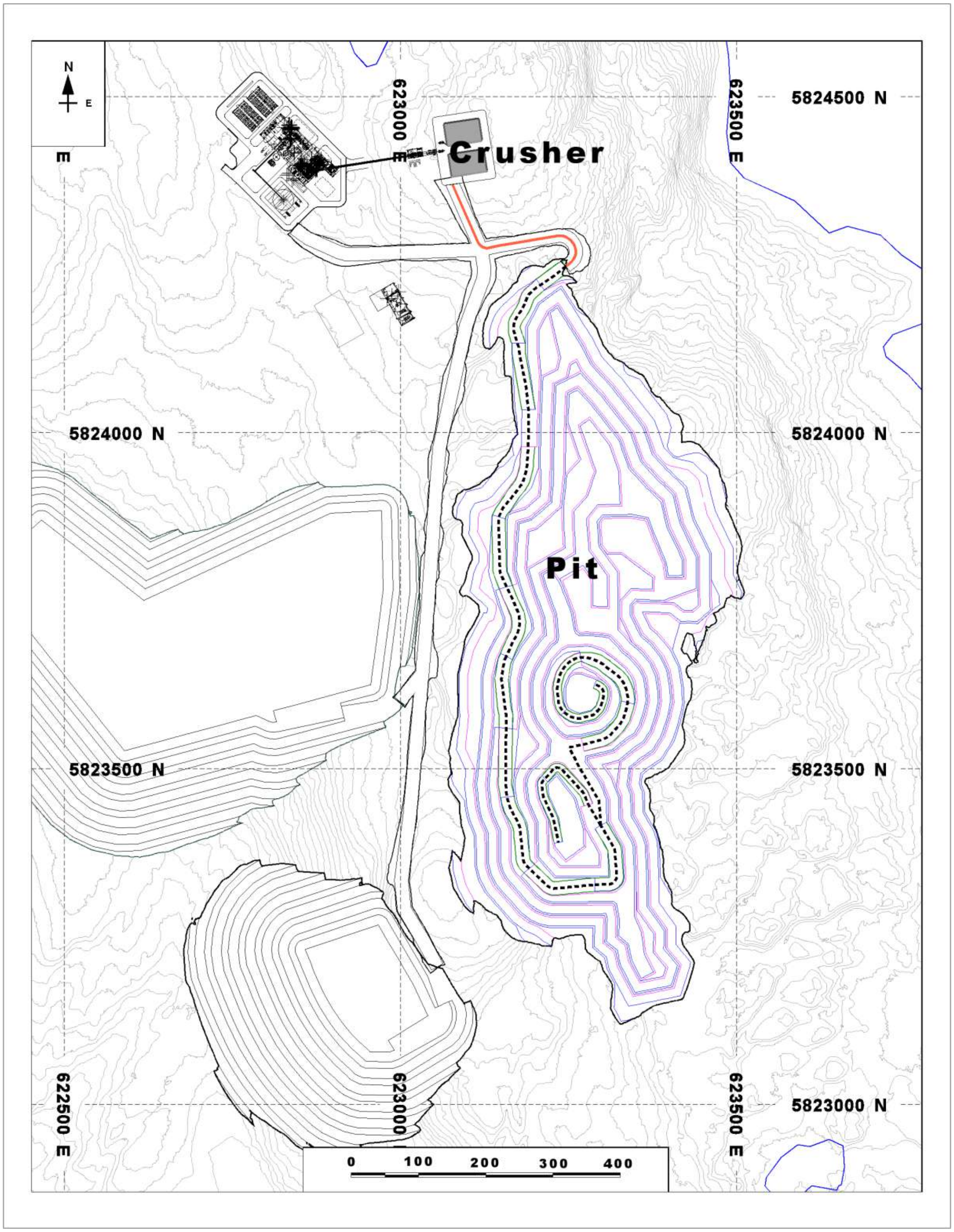
For the haul trucks, there are three (3) distinct drive cycles: overburden, ore, and waste. Overburden, ore and waste change over the years/periods as the pit develops. Figure 16.15 to Figure 16.17 depict a plan view of sample drive cycles with the blue lines indicating the haulage routes.

Figure 16.15 – Overburden Haulage Route



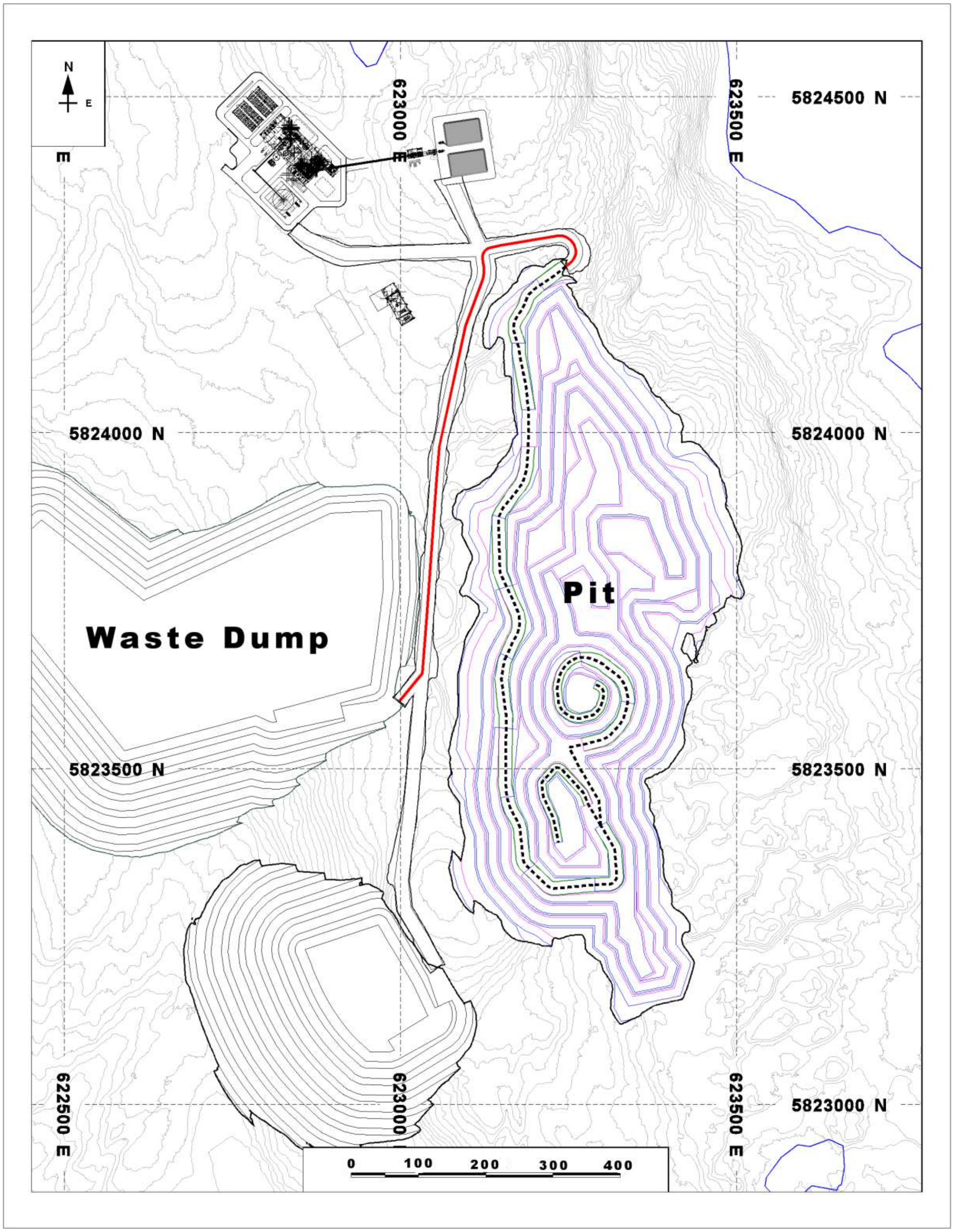
Source: DRA 2023

Figure 16.16 – Ore Haulage Route



Source: DRA 2023

Figure 16.17 – Waste Haulage Route



Source: DRA 2023

Truck hour requirements were calculated by applying the tonnages hauled to the productivity for each haul route.

A fleet of two (2 trucks is required from pre-production. The number of truck increases to three (3) in Year 7 and to four (4) in Year 15 is presented in Table 16.8.

Table 16.8 – Mine Equipment Requirements

Description	Year 01	Year 10	Year 20
Major Equipment			
Haul Trucks	2	3	4
Excavator	1	1	1
Mine Wheel Loader	1	1	1
Production Drill	1	1	1
Support Equipment			
Track Dozer	1	1	1
Road Grader	1	1	1
Water Truck	1	1	1
Powder Truck	1	1	1
Service Equipment			
Mechanics Lube Truck	1	1	1
Boom Truck	1	1	1
Pickup Trucks	5	5	5
Dewatering Pumps	2	2	2

16.6.2 Excavator and Loader

The main loading machine selected for the Project is a hydraulic excavator (backhoe) with a of 4 m^3 bucket. To maximise loading productivity, the excavators will be placed on top of the muck pile and the haul trucks will be at the bottom of the loading face. It was estimated that one (1) excavator with support of a Wheel Loader can manage the amount of tonnages in the mine plan.

The re-handling from the ore stockpile will be done with the mill front end wheel loader equipped with a 6 m^3 bucket. The loader will tram the ore from the stockpile to the crusher and load tailings in the haul truck.

16.6.3 Drilling and Blasting

Production drilling will be carried out with a track mounted down-the-hole (DTH) drill. Using the following parameters: 85% mechanical availability, 75% utilisation and a penetration rate of 25 m/h, DRA calculated that one (1) drill is sufficient to complete the drilling requirements for the mine plan.

Table 16.9 presents the drilling and blasting parameters for both production and pre-shear holes that have been designed for the FSU. Pre-shear drilling and blasting techniques will be used for the development of the final pit walls and will be completed with the same DTH drill. The table shows one (1) value for both ore and waste rock since the two (2) rock types have relatively similar densities. The blast pattern has been designed with the intention of preserving the large graphite flake size as much as possible.

Table 16.9 – Drilling and Blasting Parameters

Parameter	Unit	Production	Pre-Shearing
Bench Height	m	10	10
Blasthole Diameter	mm	114	89
Burden	m	3.3	n/a
Spacing	m	3.3	1.8
Subdrilling	m	1.2	0.6
Stemming	m	2.1	1.0
Explosives Density	g/cm^3	1.20	1.18
Powder Factor	kg/t	0.39	n/a
Shear Factor	kg/m^2	n/a	0.79

Note: n/a = not applicable

Since there is a major emulsion production facility within 50 km from the mine site, the most efficient method of explosives delivery would be for the local suppliers to provide down-the-hole service using bulk emulsion that is produced locally. The selected supplier would transport the emulsion to site and load the blast holes. The mine would require two (2) small magazines, one for the storage of primers and the other for the storage of blasting caps. The mine will also be equipped with a powder truck to transport the explosive accessories from the magazines to the blast patterns. The pit foreman will be trained as a blaster and be responsible for overseeing the loading of the holes and the blasting.

The magazines have been located to the south of the open pit. The site selection meets the minimum distance requirements as specified by Natural Resources Canada Explosives Regulatory Division.

The blasting will be carried out with non-electric detonators.

Budget prices were obtained from a local supplier for explosives delivered to site.

16.6.4 Mine Personnel Requirements

The owner mine personnel requirement is based on a seven (7) days per week, ten (10) hours per day work schedule, operating year-round. There will be two mine crews working on a 7/7 day roster schedule. The employees will have seven days of consecutive work, followed by a week-long break.

The total mine personnel requirement ranges from 30 during the first year of production and increases to a peak of 34 at Year 15. Table 16.10 shows the mine manpower requirement at Years 1, 10, and 20.

Table 16.10 – Mine Manpower Requirements

Description	Year		
	01	10	20
Engineering / Supervision			
Mine Superintendent	1	1	1
Maintenance Superintendent	1	1	1
Mining Engineer	1	1	1
Geologist	1	1	1
Surveyor	2	2	2
Mine operations			
Pit Foreperson	2	2	2
Truck Operator	4	6	8
Excavator Operator	2	2	2
Mine Wheel Loader Operator	2	2	2
Drill Operators	2	2	2
Dozer Operators	2	2	2
Grader Operator	2	2	2
Blaster	2	2	2
Blaster Helper	2	2	2
Mechanic	4	4	4
Total Mine Workforce	**30**	**32**	**34**

The grader operator will also operate the water truck.

17 RECOVERY METHODS

17.1 Process Plant Design

The 2014 FS Lac Knife process plant was completed targeting the production of 44,300 dry t/y of high-grade salable graphite concentrate.

As part of the 2022 FSU, the plant throughput was increased to produce 50,000 t/y of graphite, containing 47,781 t/y of high-grade salable concentrate. There is no current market for ultrafine graphite, and thus, it is assumed the balance (-400-mesh) is sent to tailings. The graphite concentrate will be recovered by froth flotation. The upgrading will be done by polishing and column flotation. If, upon further market reviews, the ultrafine graphite can be utilized, especially in the region, then the ultrafines would be sold as product.

The Lac Knife concentrator is located near the open pit mine. The process plant or concentrator consists of a crushing area, beneficiation, dewatering, and bagging areas.

The concentrator is designed to produce a graphite concentrate containing 97.8% C(t) from an ore containing 14.8% C(t). To achieve this concentration, the beneficiation process includes crushing, grinding, coarse/rougher flotation, polishing, magnetic separation and cleaner/scavenger flotation. The concentrate will also undergo thickening, filtration, drying, screening, and bagging. The tailings material will be thickened, filtered, and stockpiled prior to loadout to the dry-stack tailings facility.

17.1.1 Design Criteria

The graphite quality is measured in flake size and purity. Therefore, during the design of the processing plant great care is taken to avoid degradation of graphite flakes, while producing high purity graphite. All throughput rates are based on the production of 50,000 dry t/y of graphite concentrate containing 47,781 dry t/y of high-grade of 97.8% C(t) salable graphite concentrate from a feed grade of 14.8% C(t). The total graphite recovery of 90.7% and the salable graphite concentrate recovery of 86.7% (excluding ultrafine) are average figures based on the pilot plant test work results and may change depending on the ore composition.

The Lac Knife concentrator will operate 24 hours per day, 7 days per week, 52 weeks per year. The concentrator operating availability is 93% except for the crusher. The concentrator capacity has been established at nominal throughput rate of 1,001 dry t/d.

The key process design criteria are listed in Table 17.1, while the graphite production criteria are shown in Table 17.2.

Table 17.1 – Process Design Criteria

Parameter	Units	Value
Total ore processing rate	dry tonnes per year	365,320
Nominal ore processing rate	dry tonnes per day	1,001
Ore moisture	percentage	5.0
Graphite ore grade	percentage	14.8
Crusher operating time	percentage	33.3
Nominal ore crushing rate	dry tonnes per hour	211.7
Concentrator operating time	percentage	93.0
Nominal ore processing rate	dry tonnes per hour	44.8
Total graphite concentrate recovery	percentage	90.7
Salable graphite concentrate recovery	percentage	86.7

Table 17.2 – Process Plant Graphite Product Breakdown

Product Size Fractions	Product percent	Grade, %C(t)	Dry t/y
+48 mesh product	10.0%	99.7	5,000
-48+80 mesh product	23.0%	99.7	11,488
-80+150 mesh product	31.3%	99.4	15,655
-150+400 mesh product	31.3%	97.0	15,638
-400 mesh to tailings (slimes)	4.4%	86.8	2,219
Total Production	**100.0%**	**98.2**	**50,000**
Total Salable Product	**95.6%**	**97.8**	**47,781**

17.1.2 Mass Balance and Water Balance

The process plant mass balance has been calculated based on the developed flow sheet and the design criteria previously discussed. Table 17.3 presents a summary of the Mass Balance at a throughput rate in tonnes per day. The throughput and flow are average rates in t/d and m^3/d. One m^3/d of water is one t/d.

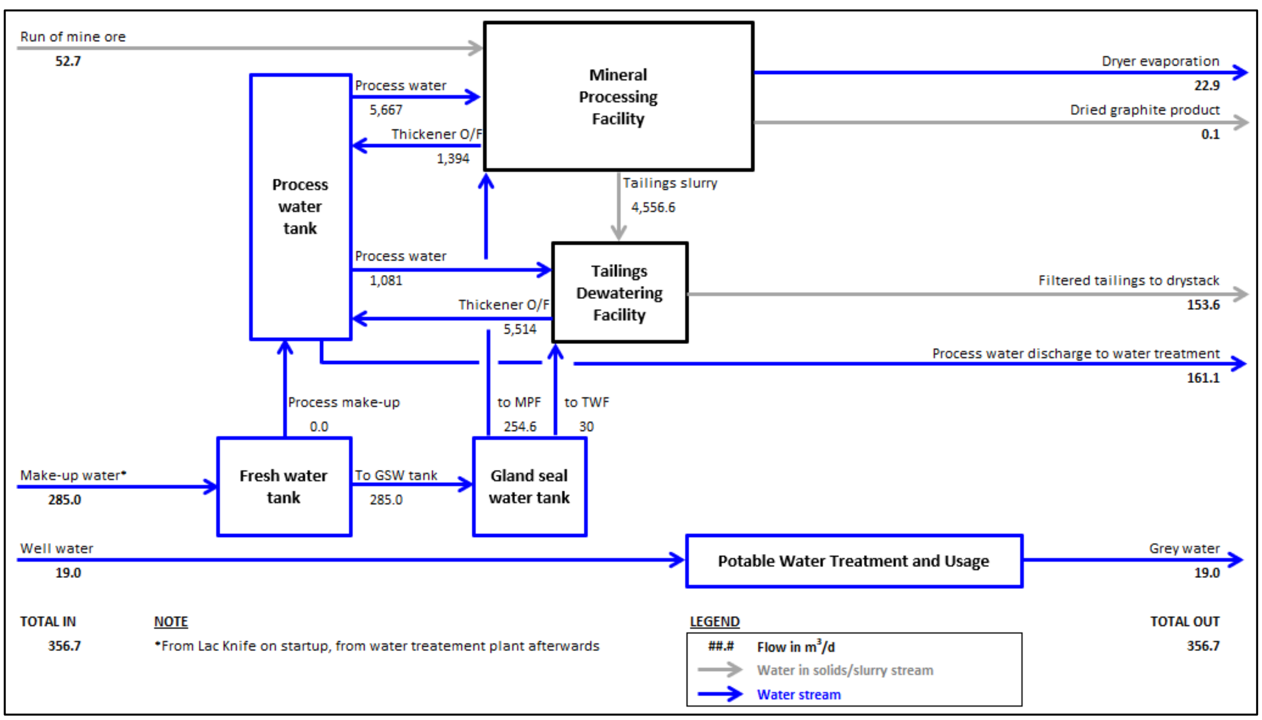
Table 17.3 – Lac Knife Concentrator Summarised Process Mass Balance

Mass Entering System				Mass Exiting System			
Streams	Dry Solids (t/d)	Water (m^3/d)	Total Mass (t/d)	Streams	Dry Solids (t/d)	Water (m^3/d)	Total Mass (t/d)
Graphite ore to Concentrator	1,000.9	52.7	1,053.6	Water evaporation from Dryer	0.0	22.9	23.0
Make-up water from treatment plant	0.0	285.0	285.0	Final Concentrate	130.7	0.1	131.0
To potable water treatment system	0.0	19.0	19.0	Final Tailings	870.2	153.6	1,024.0
				Grey Water	0.0	19.0	19.0
				Water to treatment plant	0.0	161.1	161.0
Total Entering	**1,001.0**	**357.0**	**1,358.0**	**Total Exiting**	**1,001.0**	**357.0**	**1,358.0**

A detailed process plant mass balance was prepared for the FSU.

Figure 17.1 depicts a detailed water balance. The tailings pond is not considered part of the processing facility water system and is for illustrative purposes only.

Figure 17.1 – Water Balance



Source: DRA, 2022

17.2 Process Flow Sheet and Process Description

A simplified flow sheet is presented in Figure 17.2. The flow sheet is indicative of the overall process and of the concentrator's four distinct areas: crushing, grinding and flotation, dewatering and bagging. The crushing facility will operate independent from the rest of the concentrator. The dewatering area covers thickening, filtration and drying. The bagging area consists of final product screening and bagging.

The description of the process areas is detailed below.

17.2.1 Crushing

There will be accommodations for two (2) 7-day ROM ore stockpiles at the crusher. The ROM ore, with an estimated moisture content of 5%, is dumped by the mine haul trucks onto the ROM ore stockpiles. The material is rehandled by front-end loaders and transferred to a material feeder. A static grizzly is installed at the feed point for top-size protection, and the ROM ore stockpile area will be equipped with a mobile rock breaker for large rocks. The material feeder feeds the ore into the jaw crusher. The jaw crusher discharge, or primary crushed ore, is transported via conveyor to a coarse ore bin. The jaw crusher is designed to produce a product with a particle size distribution 80% less than (P_{80}) 124 mm.

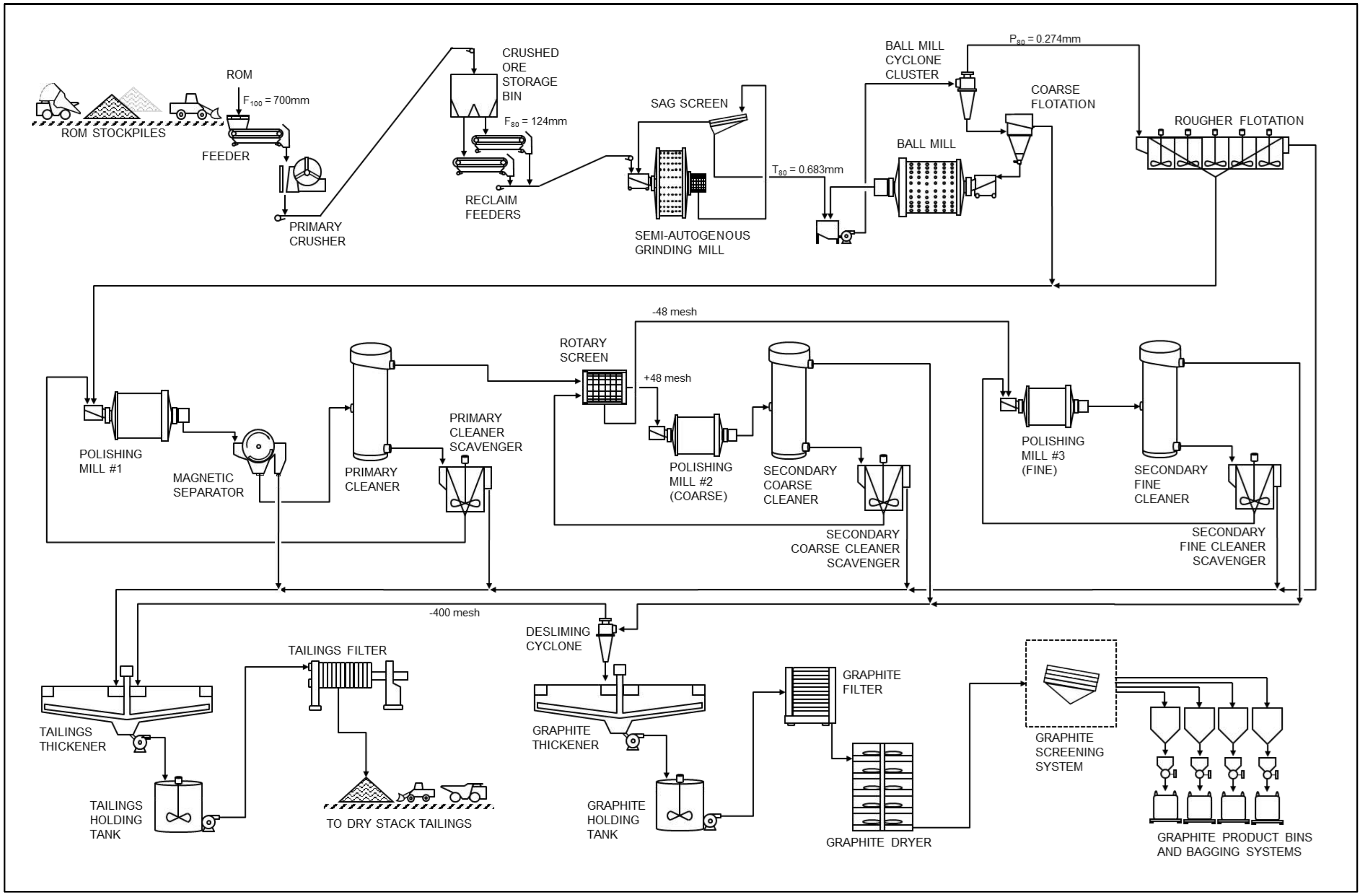
The crusher and material feeder are in a dedicated crushing building.

17.2.2 Grinding and Flotation

The crushed ore bin has a 1-day, or 1,000-tonne, live capacity to decouple the crusher from the milling circuit. The crushed ore is withdrawn from the coarse ore bin using two (2) redundant apron feeders. The apron feeders transfer the crushed ore via a conveyor to the SAG mill. The SAG mill is in closed circuit a double deck vibrating screen. The SAG mill discharge is pumped to the vibrating screen. This screen has a top deck with 4.8 mm openings and a bottom deck with 1.7 mm openings. Proper density control with the appropriate ball charge will produce a continuous coarse grinding product with a P_{80} of 0.68 mm. The screen undersize will flow by gravity to the ball mill circuit.

The ball mill, required to liberate the finer graphite particles, operates in closed circuit with the coarse flotation cell and a set of hydrocyclones. The ball mill discharge is pumped to the ball mill hydrocyclones for size classification. The hydrocyclones underflow flows by gravity to the coarse flotation cell (also known as "flash" flotation), while the overflow is sent to rougher flotation. The coarse flotation is in closed circuit with the ball mill and allows for the removal of large graphite flakes as soon as they are liberated from the ore and helps maintain graphite flake integrity. Fuel oil and methyl isobutyl carbinol ("MIBC") are added to both flotation processes as collector and frother, respectively. There is no pH modifier required in the flotation process. The coarse graphite concentrate is expected to contain 66 % C(t). The coarse flotation tailings are returned to the ball mill.

Figure 17.2 – Simplified Front End Flowsheet of Focus Graphite



Source: DRA 2022

The hydrocyclones overflow is designed to have a P_{80} of 0.274 mm.

The rougher flotation circuit will provide 18 minutes of retention time and aims to float the remaining liberated graphite.

The rougher concentrate is expected to contain 37 % C(t) will be combined with the coarse concentrate and directed to the polishing circuit. The rougher tails containing 0.60 % C(t) will be directed to the tailings thickener.

The combined concentrate from the coarse and rougher circuits is expected achieve 97 % graphite recovery.

17.2.3 Primary Cleaner Circuit

The cleaning of graphite concentrate is done in two (2) distinct phases. The primary cleaning phase is the first cleaning phase and consists of polishing, magnetic separation, and column flotation; the second cleaning phase consists of a screening step to create a coarse and fine graphite concentrates which are upgraded separately, each with polishing and column flotation.

The primary cleaning circuit is for the removal of surface contaminants from the graphite. The primary polishing mill is fed directly with the coarse and rougher flotation concentrates. The polishing mill discharge is then transferred into the low intensity magnetic separator (LIMS). The polishing mill uses ceramic media to scrubs gangue minerals from the surface of the graphite flakes.

The LIMS removes the loosened magnetic minerals from the polished combined graphite concentrate. The non-magnetic material continues to the primary flotation cleaner column. This column selectively floats the graphite flakes and upgrades the combined graphite concentrate from an estimated 57 % C(t) to a primary cleaner concentrate of 88 % C(t). The column tailings are sent to scavenger flotation to recover any remaining liberated or partially liberated graphite. The primary cleaner scavenger concentrate is returned to polishing mill #1, while the tailings are sent to the tailings thickener.

The cleaner scavenger tailings containing 6.4 % C(t) and LIMS magnetics containing 6.8% C (t) report to the tailings thickener. The primary cleaning circuit stage recovery is 95%.

17.2.4 Secondary Cleaner Circuit

The primary cleaner concentrate is screened with a rotary screen with screen panel openings of 0.30 mm. The screen oversize will have a P_{80} of 0.37 mm and goes to Polishing mill #2 for coarse polishing. The polishing of the coarse flakes requires only gentle scrubbing with ceramic media. The polishing mill discharge goes to the secondary coarse cleaner flotation column. This coarse cleaner column produces a concentrate of above 99 % C(t) and is sent to concentrate dewatering. The coarse column tailings are sent to coarse cleaner scavenger flotation to recover any remaining liberated or partially liberated graphite. The coarse cleaner scavenger concentrate is returned to polishing mill #2, while the tailings go to tailings thickener.

The rotary screen undersize goes to Polishing mill #3 to undergo a slightly harsher polishing to scrub the fine smaller flakes from unwanted gangue minerals using ceramic media. This polishing mill discharge goes to the fine cleaner flotation column. The fine cleaner concentrate is above 97 %C(t) and is sent to concentrate dewatering. The fine column tailings are sent to fine cleaner scavenger flotation to recover any remaining liberated or partially liberated graphite. The fine cleaner scavenger concentrate is returned to polishing mill #3, while the tailings go to the tailings thickener. The secondary cleaning circuit stage recovery is 96%.

17.2.5 Concentrate Dewatering

The concentrates from both the coarse and fine cleaner flotation columns are dewatered in this circuit. The combined concentrate is first deslimed with a desliming cyclone, removing the -400-mesh graphite. Currently, there is no market for this product and thus, it is sent to tailings.

The deslimed graphite concentrate is sent to the graphite thickener where it is dewatered to 37% solids in a high-rate thickener. The thickener overflow is pumped to the process water tank for recirculation of process water, while the concentrate thickener underflow is sent to the concentrate holding tank prior to being filtered to 15% moisture using a horizontal pressure filter. The filtered concentrate is dropped onto a conveyor and transported to the dryer feed hopper.

The dryer hopper evenly distributes the filtered graphite into the dryer. The dryer is an electric continuous tray dryer with electric heaters. The dryer will dry the graphite concentrate to 0.1% moisture. The low moisture content is a product requirement and also ensures proper size separation during dry screening. The dried product is transferred using dense phase conveyance to a bulk graphite holding bin.

17.2.6 Graphite Dry Screening and Bagging

The dried graphite is transferred via dense phase conveyance to the bulk graphite bin and then to the dry sifting system. The dry sifting system is composed of eight (8) sifting cabinets with 27 sizing screens per cabinet. The 27 screens decks are arranged in a series/parallel arrangement to split a single feed stream into four (4) products with sufficient screening area per split. The four (4) screened fractions discharged into the appropriate holding bins. The bulk bin and product bins allow for sufficient buffer capacity to allow for continuous operation of the process plant and bagging operation without disruption. The concentrate product breakdown is shown in Table 17.2.

Below each bin is a semi-automatic bagging system with an automated product sampler. Each bag can contain up to 1,000 kg of graphite. The actual super sack filling is automated; the super sack positioning is manually accomplished. Thus, the operator places a super sack into position and then presses the “start” bottom to fill the bag to pre-set weight. The filled bags are removed manually. Filled bags are transferred to a bag storage area prior to be loaded into trucks via forklift.

17.2.7 Tailings Dewatering

The combined process plant tailings are sent tailings thickener feed tank where they are mixed with flocculant. The material is thickened to produce an underflow of 65% w/w by solids. The thickener overflow is pumped to the process water tank for recirculation of process water, while the tailings thickener underflow is sent to the tailings holding tank prior to being filtered to 15% moisture using a plate-and-frame pressure filter. The filtered tails are then conveyed to the tailings stockpile. The tailings stockpile is rehandled via front-end loaded and trucked to the filtered tailings storage facility (FTSF).

17.3 Process Plant Equipment

The equipment selection was based on the fulfillment of the design criteria. The equipment list was prepared and the equipment was sized according to the design criteria developed from the flow sheet drawings and the mass balance. A table of the major mechanical equipment is listed in Table 17.4. The design factor for crushing equipment was set at 30%, for most of pieces of processing equipment the design factor is set at 20% and 5% for slurry pumps. All equipment sizing and design was based off metallurgical test results, DRA's experience, and supplier input, where applicable. Flotation residence times we're all based off the pilot plant test work.

Table 17.4 – Major Mechanical Equipment List

Equipment	Qty	Description	Unit Power (kW)	Installed Power (kW)
Material feeder	1	21.6m L x 1.8m W	18.5	18.5
Jaw crusher	1	1230mm x 920mm opening	160.0	160.0
Coarse ore bin	1	12m Ø x 10m H, 1000t capacity	-	-
SAG mill apron feeders	2	6.5m L x 1.2m W	5.0	10.0
SAG mill	1	4.70m Ø x 2.35m EGL (15.4' x 7.7' EGL)	800.0	800.0
SAG mill vibrating screen	1	1.22m x 3.05m (4' × 10') double deck vibrating screen	11.0	11.0
Ball mill	1	2.40m Ø x 3.60m EGL (8.0' x 11.8' EGL)	250.0	250.0
Ball mill cyclone cluster	1	350mm, 4x cyclones (3op + 1stby)	-	-
Coarse flotation cell	1	25.4m³ coarse flotation cell	55.0	55.0
Rougher flotation cells	5	10m³ flotation cell	15.0	75.0
Polishing mill #1	1	3.6m Ø, 7.3m EGL (12.0'x24.0')	550.0	550.0
Magnetic separator	1	36" Ø x 24" W drum magnetic separator	0.7	0.7
Primary cleaner column	1	2.44m Ø × 6.0 H	-	-
Primary cleaner scavenger flotation cells	5	1.5m³ flotation cell	3.7	18.5
Polishing mill #2 rotary screen	1	2.2m L x 1.8m W x 1.8m H frame	5.5	5.5
Polishing mill #2	1	1.8m Ø, 3.7m EGL (6.0'x12.0')	50.0	50.0
Coarse graphite cleaner column	1	1.22m Ø × 6.0m H	-	-
Coarse cleaner scavenger flotation cell	1	1.5m³ flotation cell	3.7	3.7
Polishing mill #3	1	3.0m Ø, 6.1m EGL (10.0'x20.0')	300.0	300.0
Fine graphite cleaner column	1	1.83m Ø × 6.0 m H	-	-

Equipment	Qty	Description	Unit Power (kW)	Installed Power (kW)
Fine cleaner scavenger flotation cells	2	1.5m³ flotation cell	3.7	7.4
Desliming cyclone	1	250mm ID cyclone	-	-
Graphite concentrate thickener	1	7m Ø high capacity thickener	1.9	1.9
Concentrate pressure filter	1	28m² horizontal pressure filter	24.3	24.3
Graphite Dryer	1	7.6m Ø × 5.5 m high tray dryer	1,500.0	1,500.0
Bulk graphite bin	1	45t capacity, 4m Ø × 10 m H	-	-
Graphite sifting system	1	Free-swinging sifter, 8 parallel 27-deck sifters, 4 products	11.0	11.0
Graphite flake bin	1	18t capacity, 2.4m Ø × 10m H	-	-
Coarse graphite bin	1	26t capacity, 3m Ø × 10 m H	-	-
Intermediate graphite bin	1	46t capacity, 4m Ø × 10 m H	-	-
Fine graphite bin	1	46t capacity, 4m Ø × 10 m H	-	-
Tailings thickener	1	9m Ø high capacity thickener	4.8	4.8
Tailings filter press	1	Plate and frame pressure filter, 2.5m x 2.5m plates	96.7	96.7

17.4 Reagents

17.4.1 Fuel Oil #2

Fuel oil #2 is used as collector for the graphite flotation. The fuel oil will be delivered by the mine fuel truck on request from the mill and stored in a 14 m³ double walled tank. The expected fuel oil usage is 66 litres per day (l/d).

17.4.2 Methyl Isobutyl Carbinol

Methyl Isobutyl Carbinol (MIBC) is used as frother for the graphite flotation. The MIBC will be delivered by tanker truck, which will transfer its contents into a storage 14 m³ holding tank. MIBC will be transferred from the storage tank to a 1 m³ holding tank within the mill for distribution. The bulk shipment of MIBC will remove possible container disposal issues. The expected MIBC consumption is 147 l/d.

17.4.3 Flocculant

Flocculant is used in both the graphite concentrate thickener and the tailings thickener to aid the settling of particles. The flocculant requirement is small and therefore 25 kg bags and a small mixing system have been selected. The expected flocculant consumption is 20 kg per day.

17.4.3.1 Lime

Lime is not used in the process. An allowance for a lime system has been included in case pH or alkalinity adjustment is required.

17.5 Utilities

17.5.1 Concentrator Water Services

The water consumption is based on concentrator plant nominal water consumption per hour.

17.5.1.1 Fresh Water

Lac Knife and underground water wells will be the main water source of fresh water near the concentrator. The fresh water is pumped to a 10.0 m diameter × 12.0 m high freshwater tank at nominal flow rate of 13.5 m^3/h. Potable water will be used at a rate of 0.9 m^3/h. The gland water is the remainder at flow rate of 12.6 m^3/h.

17.5.1.2 Gland Water

The gland water system has a separate 3.0 m diameter × 3.0 m high gland water tank. The source is fresh water with a flow rate of 12.6 m^3/h.

17.5.1.3 Process Water

Reclaim Water is recycled back, at a nominal rate of 247.1 m^3/h, from the tailings and concentrate thickeners. The remainder of the water, 62.5 m^3/h, comes from overflow of the concentrate thickener. The process water tank will be an 8 m diameter × 8 m high process water tanks with a capacity of 325 m^3.

17.5.1.4 Fire Water

Fire water comes from the freshwater system, and under normal circumstances, the flow rate is 0, while monthly tests will be performed. The system can pump water up to 440 m^3/h. The fire water tank will be 10.0 m diameter × 12.0 m high with a capacity of 880 m^3.

17.5.2 Concentrator Pressurised Air

17.5.2.1 High Pressure Air

The concentrator will have two (2) sets of high-pressure air compressors. Set #1 is for plant air and for the pressure filter air use. Set #1 includes an air dryer and separate instrumentation air receiver. Both compressors of this set will have variable displacement capabilities.

Set #2 consists of two (2) air compressors dedicated to the flotation columns. One (1) air compressor will be variable speed, while the stand-by compressor will be fixed speed.

17.5.2.2 Low Pressure Air

The concentrator will have two (2) air blowers for the mechanical flotation cells.

17.6 Processing Power Requirements

The installed power for the mechanical equipment in the process plant is estimated at 7.5 MW, while the mechanical operational power is estimated at 5.8 MW.

18 PROJECT INFRASTRUCTURE

18.1 General

This section describes infrastructure, buildings, and other facilities such as access road and power line, that are required to complement the processing of graphite ore at a throughput rate of 1,001 t/d.

All topographic information for locating infrastructure was based on LiDAR topographic survey data that was made available by Focus for this FSU.

Geotechnical investigations were conducted in April 2014 and in November and December 2021 for surface infrastructure including the concentrator and the tailings storage area. Additional geotechnical investigations were carried out for the mill crusher foundations and other infrastructure such as the administration offices, tailings storage, run-of-mine stockpile and electrical substation.

Provision for site preparation and earthwork is based on a 45,000 m^2 area for the industrial site.

An overall general site layout and access (at a scale of 1:10,000) is depicted in Figure 18.1. Figure 18.2 (scale of 1: 1,000), illustrates the concentrator processing plant and related infrastructure more precisely.

The FSU also included a series of layouts of the concentrator processing plant to illustrate the arrangement of mechanical equipment.

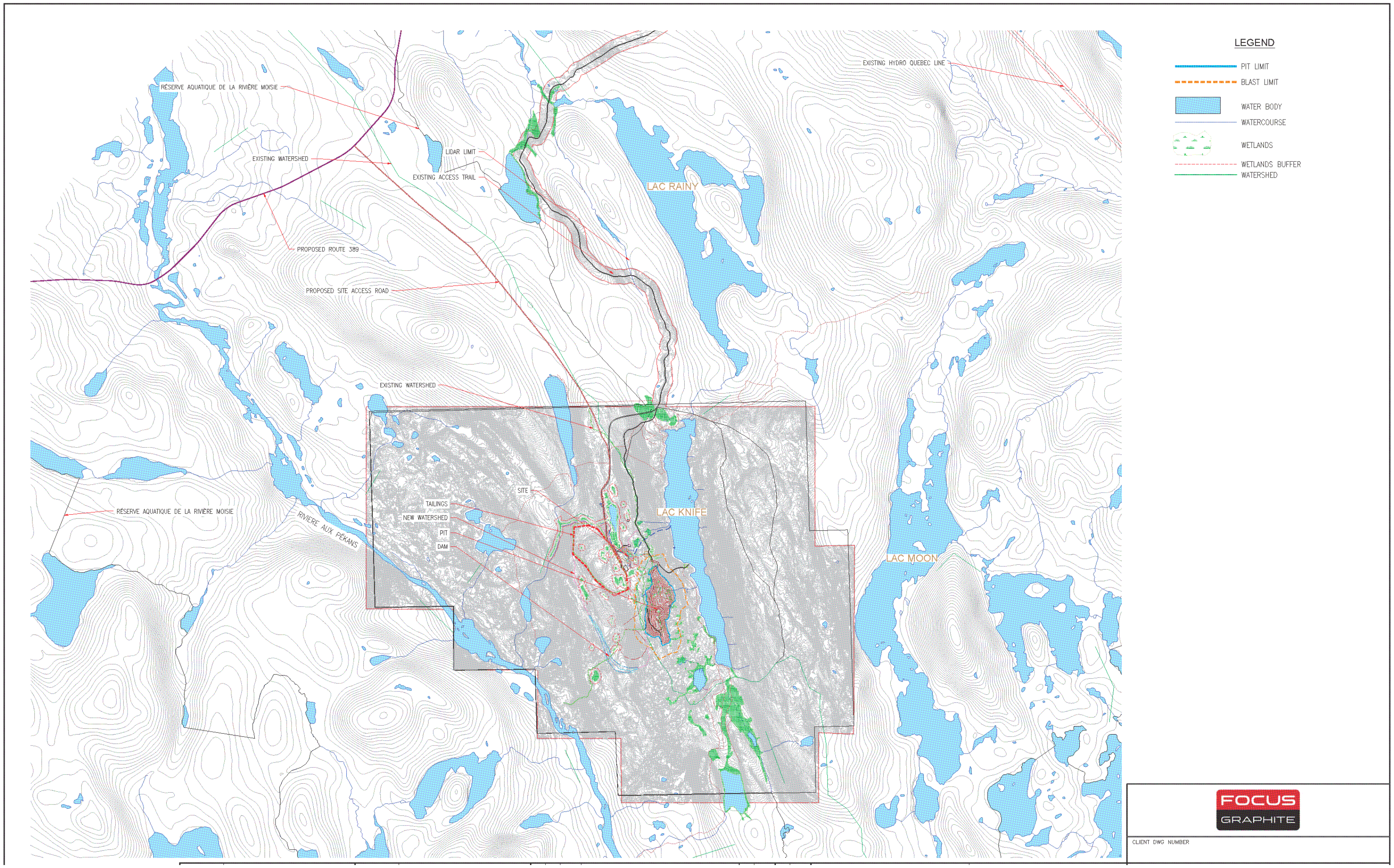
18.2 Main Access Road

Highway 389 is in the process of being realigned and the new routing will traverse close to the main entry to the Project limits. Originally planned as a 32 km public gravel project access road from the existing Highway 389, the new access road would be 6 km from the relocated Highway 389 to the project entrance. The new access road would be 10 m wide to allow two-lane traffic for transportation trucks to and from the mine site.

It is anticipated that the new routing for the Highway 389 will be completed prior to the start of the construction of the Project. One of the first activities of the Project would be to complete the construction of the access road to enable equipment, materials and labour forces to arrive at site.

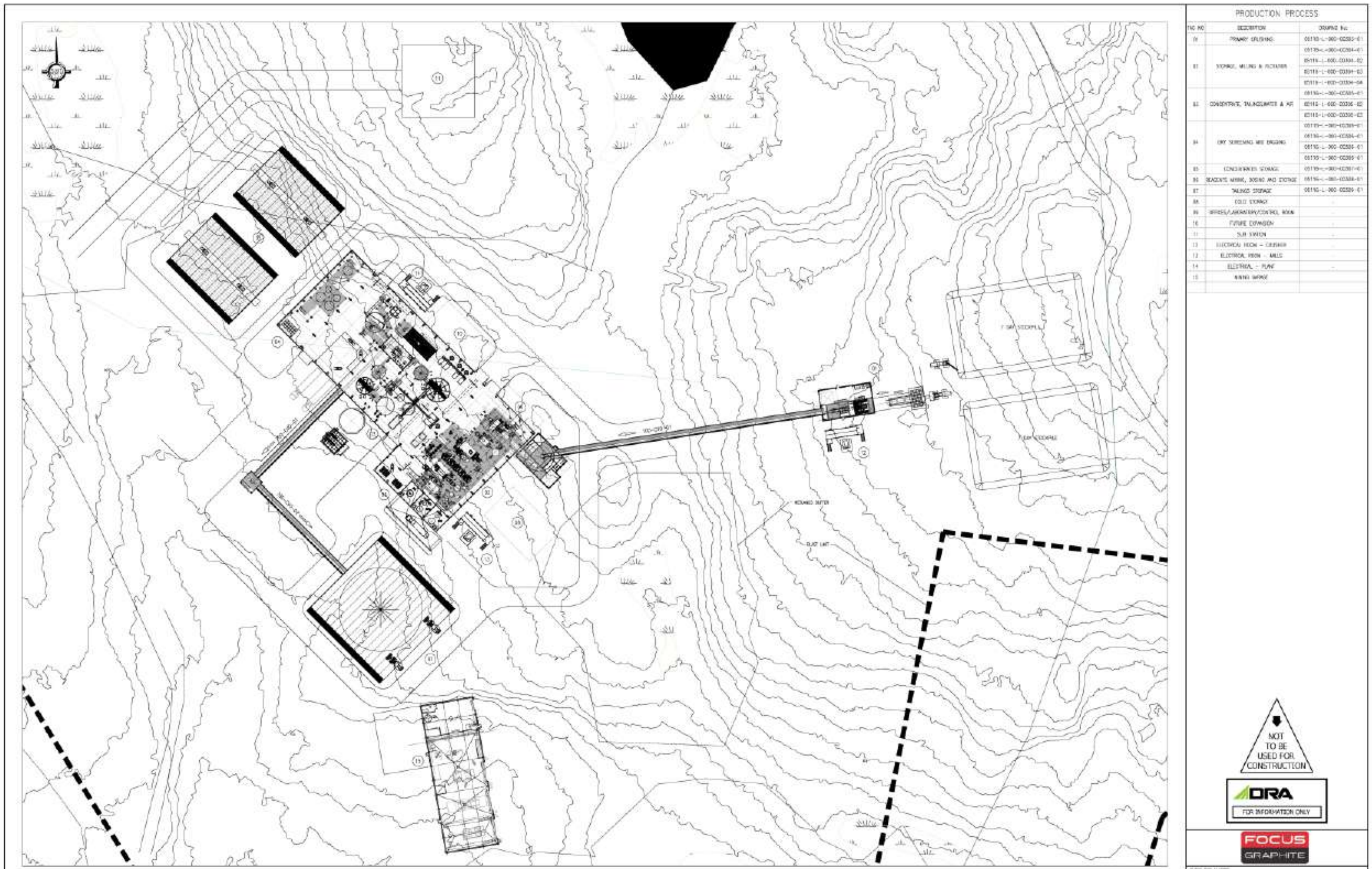
The main access road will terminate at the guard house ahead of the administration building. All gas-powered vehicles, other than those vehicles delivering supplies or picking up the product containers, will be required to park at the administration building. All manpower personnel will be moved to the Project areas in electric vehicles.

Figure 18.1 – Overall General Site Layout and Access



Source: DRA, 2022

Figure 18.2 – Processing Plant and Related Infrastructure



Source: DRA, 2023

18.3 Accommodations

Considering the proximity of a well-developed iron ore mining industry in the Fermont area and that the total workforce is not expected to exceed 101 people, no permanent camp has been provided for the project. It is expected the nearby towns of Fermont or even Labrador City and Wabush will provide both work force and housing to the employees.

Employees will be transported by company electric buses from Fermont over a distance of about 45 km.

18.4 Site Roads

A series of mine site roads will be constructed and give access to the waste rock and overburden stockpiles to mine trucks and other mining equipment. A separate haulage road will mainly be used by the run-of-mine ore haulage trucks to reach the crusher site and feed the concentrator. All mine dedicated roads will be 20 m wide to accommodate the size of mining trucks. The haul road from the pit to the crusher site will be approximately 500 m long.

A turn off from the haulage road will give access to the maintenance facilities for the mining equipment. All off-road equipment traffic will be limited to the east of the industrial complex to eliminate intersections between off-highway equipment and highway trucks.

A service road will provide access to the explosives storage magazines for the mine’s drill and blasting operations. The explosive storage area will be provided with security fencing, gate access and area lighting.

A road will be provided for mining truck service from the tailings storage building to the dry storage tailings area. The road will be 20 m wide to accommodate the 40 tonne haul trucks moving the tailings material from the dry tailings storage building to the dry tailings storage area.

Finally, a service road is required to reach the water make-up pumps located on the Lac Knife shoreline. All service roads will be 8 m wide.

18.5 Buildings

18.5.1 Processing Plant Area

The processing plant area is located North-West of the open pit. The site is approximately 200 m by 150 m at elevation 696 m and slightly sloping southerly. The access road reaches the site from the North-West and the service road towards the TMF exits from the south-west. The ditch system north of the site, collects run-off before reaching the site and drains it to the west, under the access road. The ditch system south of the plant site collects run-off from the site towards the site collection pond which drains along the ditch on the east side of the service road towards the TMF.

18.5.2 Concentrator Building

The concentrator building is a conventional ore processing type building. The layout of the plant had been developed keeping in mind potential expansion along the North side of the building.

The concentrator building houses the coarse ore bin and the grinding area on the east side of the building. The flotation area and regrind area are located in the center of the plant. The graphite concentrate thickening and filtering area is located to the west-center of the building. The concentrate dryer and the bagging system will be located in the west side of the building. The load out section of the building is located on the southwest corner.

Provisions were made in the design to isolate the dried graphite concentrate area in order to ensure effective graphite dust control and venting.

Two (2) electrical rooms are provided in the design: one on the second floor along the east wall of the plant with the compressor room area and a second one in the concentrate filtration area near the laboratory and sample preparation area. Mechanical and electrical maintenance shops are located on the ground floor in the coarse ore bin area.

The employee's changing room and lunchroom are located on the first floor of the building above the compressor room. Offices are located on the third floor.

For the concentrator's average processing rate of 1,001 dry tonnes per day, the size of the building is determined to be 76 m x 37 m and will be 26 m high.

18.5.3 Administration Complex

The administration complex is located at the entrance to the site, a distance of about 1 km from the plant area. The single level 21 m x 14.6 m building will accommodate about 15 offices for administration, staff, visitors, and sub-contractors.

Provision has also been made for a first aid station as well as a conference room and a lunchroom for employees.

Area parking will be provided with block heater outlets and some level 2 charging stations for electric vehicles. The administration complex will have area lighting for safety.

The gate house will be a single storey building measuring 3 m x 6 m. All access to and from the site will be monitored and an electric gate will be used to restrict access to and from the site.

Potable water will be provided to the administration building via a nearby well which will also feed the gate house requirements.

Effluent water will be discharged into an underground septic system. The system will also cover the requirements from the gate house.

18.5.4 Mine Equipment Maintenance Building

The mine equipment maintenance building will be located south of the concentrator and will comprise maintenance bays for repair of equipment, a wash bay to clean the equipment, and mine offices, mine dry, compressor room, workshop area and storage for sensitive equipment spares. The wash bay will be equipped with a pressure washing system and an oil/water separator would be included.

18.5.5 Product Warehousing

Two (2) dome structures on 40' containers will be allocated near the drying/bagging area of the plant to store the1-tonne bags while awaiting shipping. An electric forklift will be dedicated to move the material from the bagging area to the storage are and to load containers for truck transport to Baie Comeau for further delivery. The end walls will each have a truck door as well as a man door.

18.5.6 Cold Warehouse

A lightweight dome type structure cold warehouse measuring 15 m by 24 m, is provided for temporary storage of mechanical equipment parts. The end walls will each have a truck door as well as a man door. Racking will be provided for storage of small equipment and parts and sufficient storage will be provided for major items. All sensitive equipment and parts will be stored in the concentrator.

18.5.7 Dry – Change House

Provision for a change house area is provided on the first floor of the concentrator above the compressor room. It has a floor space of 216 m² and includes showers and changing rooms, which will be ventilated. It will be able to accommodate the employees of the concentrator up to 64 people. The lunchroom and offices will be located one floor above.

18.6 Filtered Tailings Management Facility

Tailings from the Lac Knife Project will be disposed in a Filtered Tailings Storage Facility (FTSF) located immediately to the west of the process plant. The location of the FTSF was selected to provide sufficient capacity for disposal of all tailings to be produced over the proposed life-of-mine for the Project. The suitability of the proposed site was confirmed through a multi-criteria analysis of multiple sites which had previously been identified for the development of the facility.

The FTSF has been designed to meet the regulatory requirements of Québec Directive 019. As well, the FTSF has been designed to meet the best practice requirements for the design of tailings facilities as provided in the Global Industry Standard on Tailings Management (GISTM), the Mining Association of Canada, Towards Sustainable Mining (MAC TSM) requirements and the Canadian Dam Association (CDA) Dam Safety Guidelines and applicable technical bulletins.

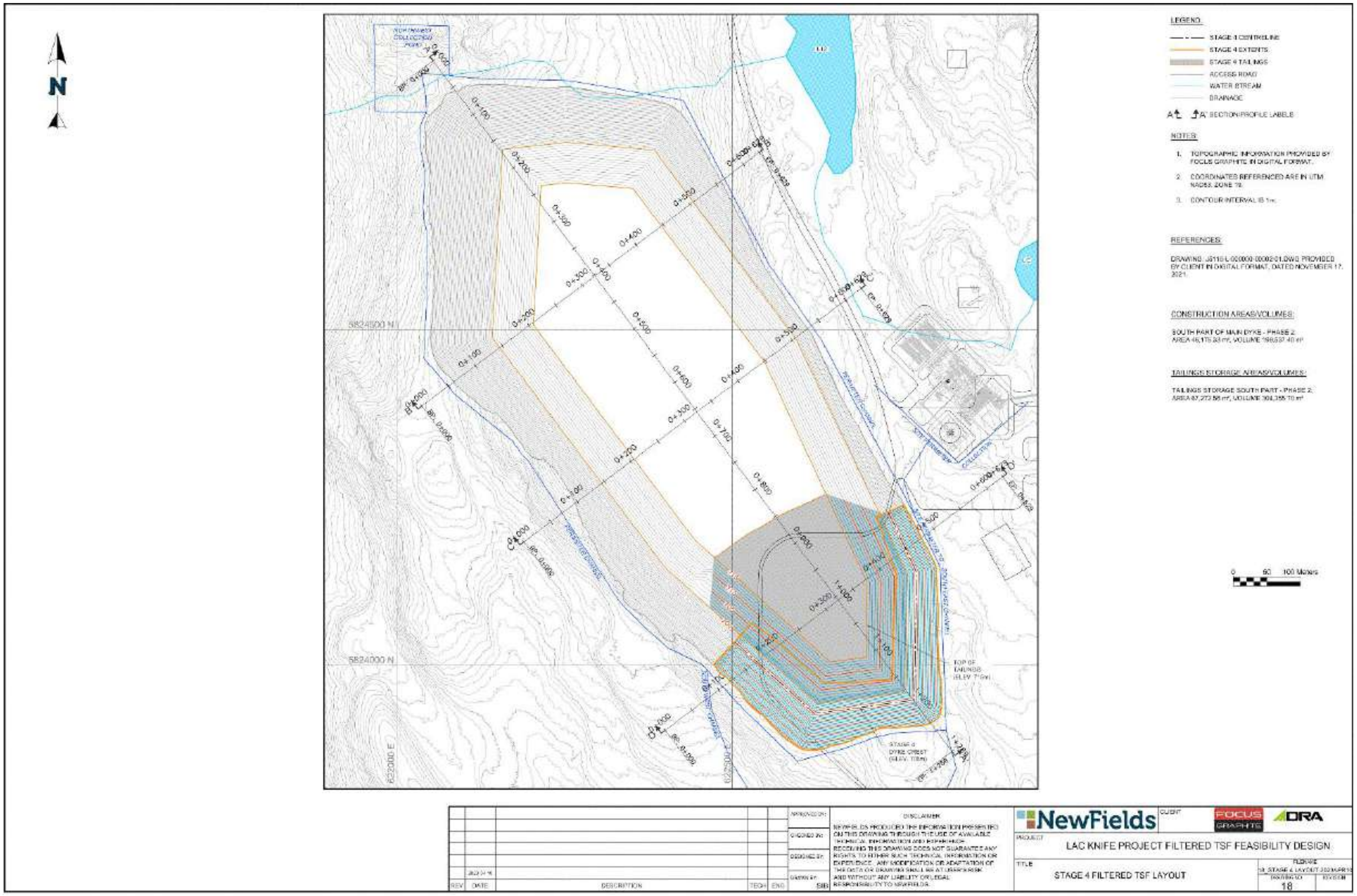
The FTSF will be developed on a site, located primarily within the Pékans River watershed. Bedrock at the site is generally within about 5 metres of the ground surface. Overburden at the site generally consists of glacial tills (silt, sand and gravel) with a thin veneer of organic topsoil. Based on the available geotechnical and hydrogeological investigation data, it is anticipated that the bedrock will be generally low hydraulic conductivity, with the overburden having a higher hydraulic conductivity. Figure 18.3 illustrates the general layout of the FTSF.

The tailings from the process are expected to be potentially acid generating. As a result, the design of the FTSF provides features to provide protection of the environment from acid mine drainage. In addition, it is proposed to amend the tailings with dolomite marble, to delay the onset of oxidation as well as to include zones of buffering material within the tailings deposit.

The FTSF will be developed in stages over the operating life of the facility. The first stage of development will include construction of the perimeter dyke around the north end of the FTSF and will provide sufficient capacity for approximately 2 years of operations. Subsequent stages of the facility will be constructed as required to provide disposal capacity.

Stage 2 of construction will include extending the perimeter dyke to the south and raising of the Stage 1 dyke. For Stage 3 of construction, the perimeter dyke will be completed around the south end of the FTSF, and the Stage 2 dyke will be raised to the final crest elevation. For Stage 4, the perimeter dyke at the south end of the facility will be raised to the final crest elevation. The proposed construction sequencing is shown in Figure 18.4.

Figure 18.3 – General Layout - Filtered Tailings Storage Facility (Stage 4)



Source: NewFields, 2023

To provide containment for the tailings and any potentially contaminated or impacted water from reaching the ground and surface water systems, the FTSF will include the following features:

- A perimeter containment dyke constructed of compacted rockfill to provide structural support to the tailings deposit;
- A Linear Low Density Polyethylene (LLDPE) geomembrane liner system over the base of the FTSF and the perimeter dyke upstream slopes. The liner system will include a transition layer over the rockfill, a bedding layer between the liner and the transition zone, and a cover of sand to protect the liner during operations;
- A leachate collection system will be installed in the cover sand layer over the liner. The leachate collection system will collect any drainage from the tailings and direct it to a sump for discharge to the Water Storage Pond prior to treatment for either recycle to the process plant or discharge to the environment; and
- A seepage collection system will be installed below the liner to collect any leakage that may escape the FTSF through the liner system. The seepage collection system will direct any seepage to a sump for discharge to the Water Storage Pond prior to treatment and either recycle to the process plant or discharge to the environment.

A plan view of the FTSF is shown in Figure 18.3 and schematic typical cross-sections through the facility are presented in Figure 18.5.

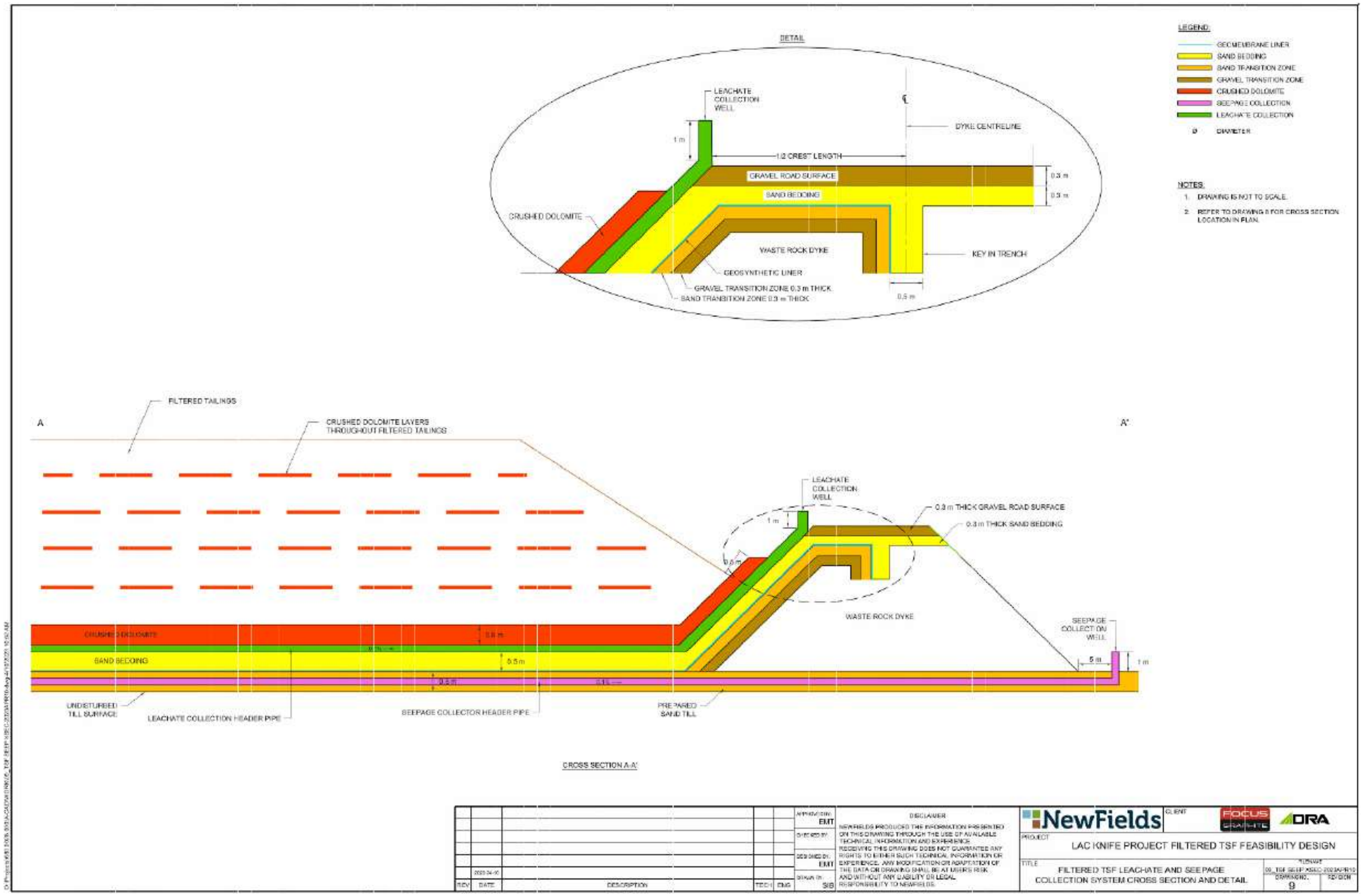
Tailings from the process will be filtered and temporarily stored in a covered facility at the process plant site. From the temporary storage facility, tailings will be loaded onto trucks and hauled to the FTSF where they will be placed, spread and compacted using conventional earth moving equipment. Tailings placement will be scheduled to reduce to the extent possible, the surface area of exposed tailings and the number of operating areas within the FTSF.

To address potential concerns with stability, tailings placement around the perimeter of the facility will be completed during dry weather conditions to make sure that a structural zone of well compacted tailings is provided to improve the stability of the facility. All tailings in the structural zone will be compacted to at least 95 percent of stand Proctor maximum dry density (SPMDD). Tailings which may not meet the design specifications will be placed within the central zone of the facility, where they will be structurally supported by the perimeter zones.

Figure 18.4 – Proposed Construction Sequences (Stages 1 to 4)

Source: NewFields, 2023

Figure 18.5 – FTSF - Schematic Typical Cross-Sections



Source: NewFields, 2023

Due to the potential for extreme variability in weather conditions, including heavy snowfall in the winter and potential for significant rainfall during the summer months, the temporary storage facility will provide capacity to store up to 7 days of tailings production from the process plant. This temporary storage will provide a contingency if tailings cannot be placed and effectively compacted within the facility due to excessive moisture or large snow fall events. In addition, a zone within the centre of the FTSF will be always maintained for the placement of tailings that cannot be compacted due to upset conditions within the plant.

During winter months, all snow accumulation within the FTSF will be removed prior to placement of tailings to prevent the inclusion of zones of snow within the tailings stack which would provide a week layer. A temporary storage area will be provided within the FTSF footprint, to store the snow and any tailings removed. During non-freezing operations where tailings have excess moisture for compaction due to filter plant upsets, or precipitation events, tailings will be dried through mechanical turning of the tailings, prior to compaction.

During operations, the tailings surface will be compacted and graded to promote runoff towards the perimeter of the FTSF or towards temporary sumps within the facility. Prior to suspension of tailings placement each day and prior to rainfall events, the tailings surface will be compacted and rolled smooth to reduce the potential for infiltration of precipitation and to promote runoff.

It is proposed to amend the tailings using an oxygen scavenger reagent, to delay the potential onset of oxidation of sulphide minerals within the tailings. The scavenger reagent will be applied to the tailings following the filtering process, but prior to transport to the FTSF.

To mitigate any potential acid generation within the FTSF, layers of crushed dolomite will be interbedded within the placed tailings. The crushed dolomite will provide a buffering capacity in the event of any acid generation. In addition, the dolomite layers will provide drainage layers to support the internal drainage of the placed tailings.

18.7 Site Water Management

The water balance for the Project was developed to link the inflows and outflows of the process/filter plants (plants), FTSF, water storage pond, open pit, water treatment plant (WTP), well water, and Lac Knife to create a balanced water system. During start up, the water required for the plants will be pumped from Lac Knife to obtain adequate volumes. Once start up is complete and the process plant has the water necessary for normal operations, the make-up water will be recycled from the plants and the water storage pond. The storage pond will gather all surface runoff collected from any rainfall and snowmelt on site. Ditches and pumps will be used around the Project site to direct drainage from rainfall and snowmelt to the storage pond. The storage pond will also store any seepage collected from the FTSF and ground water seepage that flows into the open pit. Losses within the system include evaporation from the plants and water storage pond, remaining moisture in the graphite product and the tailings, and pond seepage. To control the level of the storage pond, excess water will be treated by the WTP and pumped to Lac Knife to keep the storage pond at sustainable levels.

The water balance flow diagram (Figure 18.6) is a schematic providing a simplified representation of the Project's water distribution, collection, discharge, recycle and losses. Each node on the flow diagram describes an inflow or outflow from an individual facility.

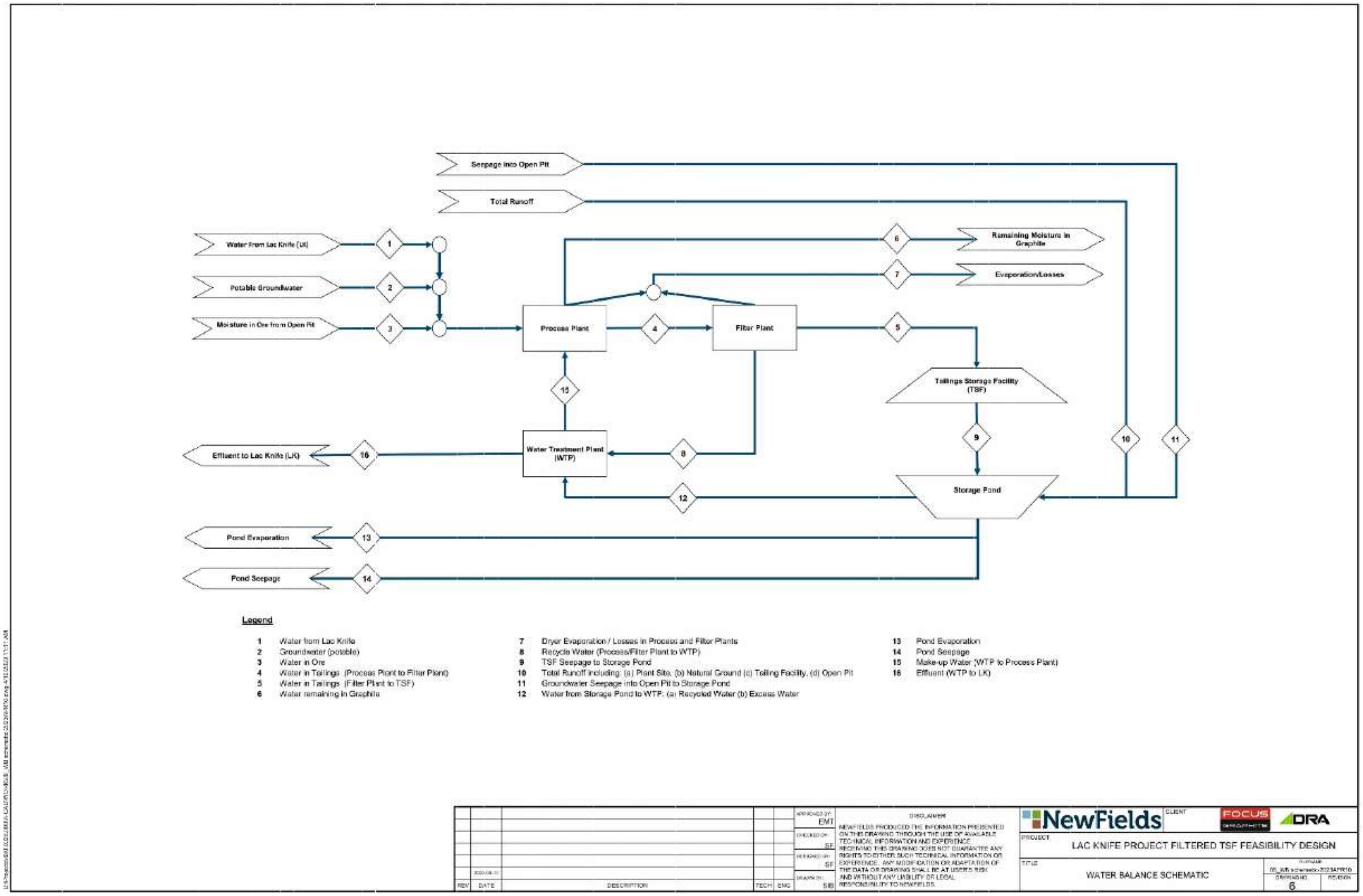
The water storage pond was designed to capture all surface runoff on site including direct precipitation onto the pond, ground water seepage into the open pit, and water seepage through the liner of the FTSF. The size of the water storage pond was determined using Directive 019 requirements for the design flood and freeboard requirements. A spillway will be installed within the water storage pond to safely evacuate the Probably Maximum Flood (PMF). The general layout of the Water Storage Pond is shown on Figure 18.7.

The maximum operating volume of the storage pond will occur during a design flood in the month of May, with a volume of 1,340,000 m^3. The normal operating maximum volume will be 769,000 m^3. This volume is expected to be the peak during years when average precipitation occurs. The storage pond will have a minimum operating volume of 120,000 m^3 during October of each year, after excess water has been pumped to the WTP and released to Lac Knife as effluent during the ice-free months. At this minimum volume there is enough volume to supply the plants with make-up water for seven months, including a 2 m depth over the reclaim pump, and 1.5 m of ice cover.

Runoff water from the site is contained and either naturally drain or are pumped to the water storage pond before being treated for release. Including the watershed area that drains to the open pit, the total catchment footprint of the site is approximately 1.92 km^2.

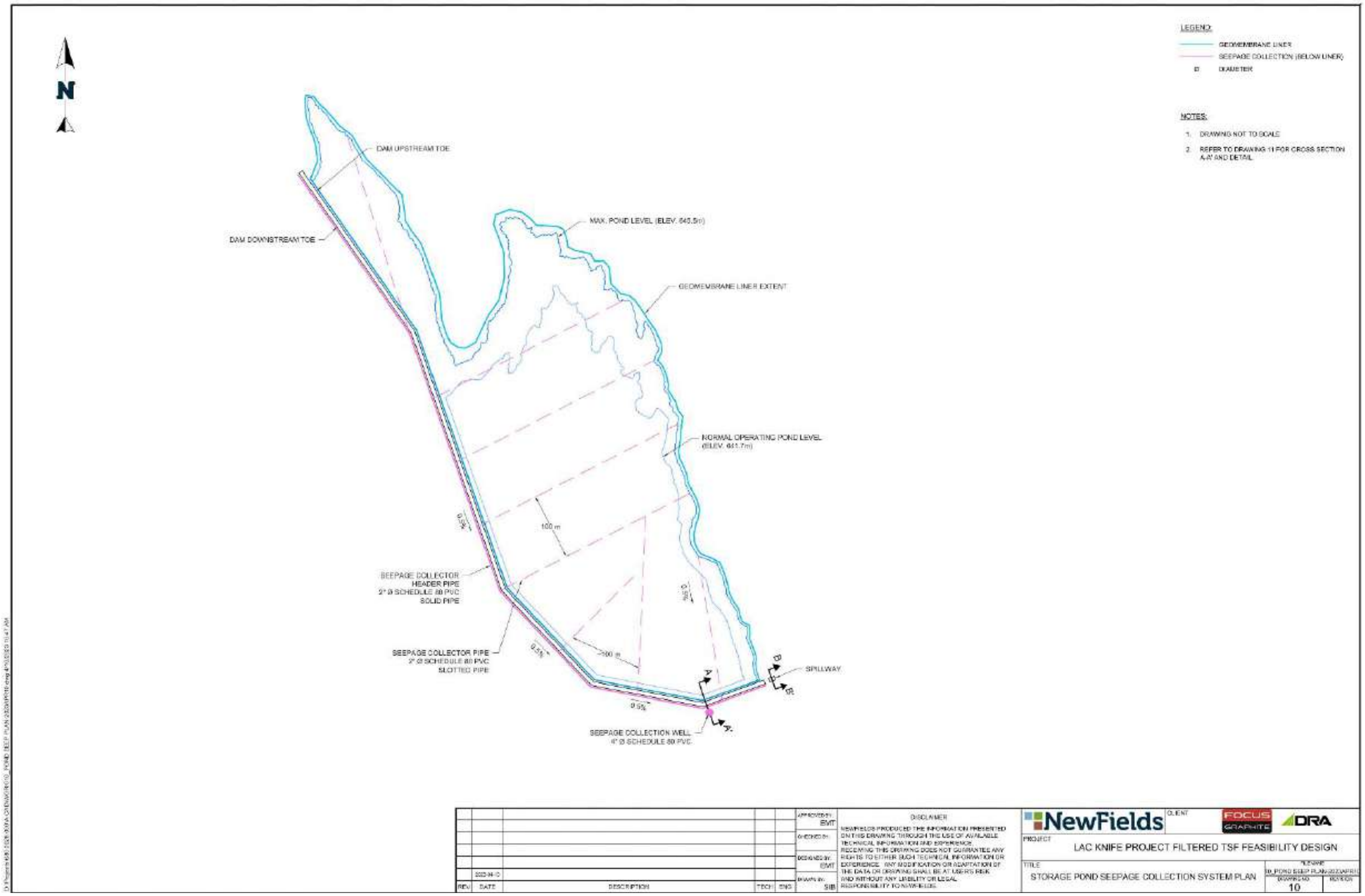
Drainage ditches are proposed for water collection around site facilities. A perimeter ditch is proposed around the perimeter of the FTSF to collect any runoff which may generate from the facility. A collection pond is proposed in a natural low area on the northwest corner of the FTSF. This collection pond is for temporary water holding and must be regularly pumped to the main water retention pond during periods of increased runoff.

Figure 18.6 – Water Balance Diagram



Source: NewFields, 2023

Figure 18.7 – Water Storage Pond



Source: NewFields, 2022

18.8 Water Treatment Plant

The WTP will be treating a combination of surface water, mine material stockpile runoff and seepage, and tailings fluids with a combined flow of 9,000 cubic meters per day (m^3/d) or 2.3 million gallons per day (M gal/d) or 6.25 m^3/min (1600 gal/min).

The water treatment would require the following components:

- Equalization (EQ) tanking – this tank is usually large enough to hold a days' worth of water. It can be configured as a tank, series of tanks or large impoundments. The purpose is to provide a consistent inflow to the WTP and to produce consistent chemistry. The EQ tank can also serve as the collection point for all wastewater streams.
- A lime plant – since this is a mine site, it is likely that the water reporting to the system will require some pH adjustment due to acidity from stockpiles and exposed tailings material and metals removal typically ubiquitous if acidity is high (greater than 100 mg/L). The lime plant will be composed of:
  - Lime slurry or slake tank.
  - Mix tank 1 with mixer for lime and fitted with aeration capability.
  - Mix Tank 2 in series with Tank 1 and continued aeration.
  - Flocculant tank.
  - Clarifier (with sludge collection at bottom).
  - Filter press or GeoTubes for sludge handling, and
  - Assorted piping and pumps.
- As noted, the water treated at the lime plant will be discharged to a holding tank while sludge will be removed and separated from interstitial water via the filter press or GeoTubes.
- Depending on Provincial regulations there may be a requirement to meet total dissolved solids (TDS) or electrical conductivity (EC) discharge limits. Often a specific chemical of concern will need special attention too, necessitating additional post lime treatment. If so, a combination of ultrafiltration and/or ion exchange may be needed after the water has been treated with lime. If the EC or TDS are less than 10 to 15 millisiemens (mS) or 6000 to 9000 milligrams per liter (mg/L) than small reverse osmosis (RO) or ion exchange (IX) system would be needed to reduce EC to near drinking water standards. At this stage, it has been assumed that surface water runoff will dominate inflow to the plant and therefore a simple IX system would be sufficient.

18.9 Potable Water Treatment

Provision is made for a potable water treatment based on ultra filtration membrane system to provide service water for the employees considering that there will be no camp on site.

18.10 Sanitary Wastewater Treatment

One sanitary wastewater treatment system will be provided for the concentrator and administration building facilities designed for a maximum of about 100 people. No other sanitary wastewater treatment system is required for the site.

Provision is made for a modular-type sanitary wastewater treatment unit using a Rotating Biological Contactor (RBC) type process. Sanitary and shower wastewater are collected from each building via underground piping and discharged into these modularized sanitary wastewater treatment units. Sludge will need to be removed about twice a year by a local contractor.

18.11 Fuel Storage

The requirement for the fuel oil required for the process area will be is minimal and will be contained within a 2.5 m Ø × 3.0 m high double shelled tank with a capacity of 14.0 m^3 and a holding tank measuring 1.3m Ø × 1.3 m high with a 1.2 m^3 capacity. Coupled with a fuel oil transfer pump and metering pumps, all the fuel oil equipment will be in the fuel oil storage area in the concentrator. The backup generator will contain its own tank for fueling purposes.

The requirement for the mining operation will be approximately 1,200 litres per day. A 15,000 litre double shelled tank with a high-speed fueling system will be provided for the mine trucks. Exterior lighting will be provided for safety and security. A containment trench will be constructed to collect any spillage that might occur.

The fuel oil requirements will be supplied as required by a local supplier.

18.12 Plant Mobile Equipment

Mobile equipment will be required to support the operations personnel and the mine and plant operations.

The following equipment has been provided to support the operations:

- Light vehicles such as pickups and buses
- Material handling vehicles such as mobile crane, articulated manlift, boom truck, forklifts, etc.
- Emergency vehicle such as the mine rescue truck.

18.13 Solid Waste Disposal

It is assumed that the environmental management system will promote recycling at the mine site and that the residual matters will be collected regularly and sent to the Fermont area. No capital cost allowance is included.

18.14 Mine Magazine Storage

The explosives will be transported to site from the closest explosives plant. No explosives will be stored on site since regular delivery will accommodate the relatively small amount for this scale of operation is required. However, it is expected that two small magazines will be required on site: one magazine will be required for the storage of primers and one magazine for detonators. They will be located approximately 500 m south of the pit.

18.15 Site Power

18.15.1 Power Line

To supply the power requirements of the plant, a new 34.5 kV overhead power line (wood pole) is to be constructed, tapping into the existing Hydro Québec Normand Substation located near Fermont. The new 34.5 kV pole line will be approximately 50 km long and will be installed along the new routing for Highway 389 and then by the new access road from Highway 389 to the mine site main sub-station.

18.15.2 Site Load

The total power demand is estimated at 7.5 MW with 4.5 MW for the concentrator process and 3.0 MW for the non-process facilities. The non-process facilities power is required to service the following: Administration, Offices, Mechanical Shop, Laboratory, Electric Rooms, Truck Maintenance, Cold Warehouse, Fuelling Station, Guard House, Communication Tower, heating of the Concentrator as well as losses in transformers and feeders. The process power demand was estimated based on data from the Mechanical Equipment List prepared for the Project. A breakdown by area is presented in Table 18.1.

Table 18.1 – Project Power Requirements

Process Areas	Description	Power Demand Requirements (kW)
100	Crushing	319
200	Grinding & Flotation	1,034
300	Polishing & Coarse/Fine Cleaner Flotation	801

Process Areas	Description	Power Demand Requirements (kW)
400	Graphite Concentrate Dewatering and Drying	1,384
500	Dry Screening	10
600	Bagging System	43
700	Tailings	457
800	Reagents Preparation	9
900	Air & Water Services	450
	Total Process	*4,507*
	Process Plant - Heating for Concentrator Building	1,651
	Process Plant – Services, HVAC, Lighting (Crusher, ER-s, Mechanical Shop, Laboratory, Offices)	695
	Other (Truck Shop, Warehouse, Fuelling Station, Gate House, Communication Tower, Losses)	420
	Mine (Included with Other)	0
	Losses in Power	214
	Total General Process and Services	**7,487**

The electrical installation for the entire plant (mine, process and services) is presented on the single line diagrams that were prepared for the Project.

The plant will be supplied by a 34.5 kV/4.16 kV Main Substation installed north-east of the Concentrator. The step-down transformer (7.5/10 MVA, dry type) is sized to provide the operation of the entire site and to allow some future expansion. The transformer is protected on the primary side by the recloser VCR-01. The electrical equipment will be installed in the Main Substation Electrical Room (prefabricated type) and in three Electrical Rooms: ER-100 for process area 100, ER-200 for process areas 200 and 300 and ER-400 for process areas 400, 500, 600, 800 and 900. The Fresh Water Source Pumps and the Pond Water Pumps are locally supplied and controlled.

The three ERs (ER-100, ER-200 and ER-400) will be 4.16 kV supplied on overhead lines from the Main Substation's Electrical Room to the Concentrator building and then in cable trays. The cable supplying the Crusher (ER-100) will be partially installed on the conveyor. The 4.16 kV pole lines site distribution network supplies to the following sites and will provide lighting sources along their routes:

- One line to the administration building, the guard house and the communication tower;
- One line for the Fresh Water Pumping Station;

- One line to the mine repair complex, and the mine sub-station for the shovels, pit discharge pumps, and pit lighting.
- One line to feed the cold storage warehouse and the water treatment plant.

18.15.3 MV and LV Distribution Levels, Systems Grounding and Load Ranges

The proposed distribution voltage levels for equipment and the type of motors are defined as indicated in Table 18.2.

Table 18.2 – Voltage and Loads

Voltage	Grounding	Loads
4.16 kV, 3Ph, 3W	HRG (25 A)	MV Distribution Fixed speed and variable speed motors 4 kV
600 V, 3Ph, 3W	HRG (5 A)	Fixed speed and variable speed motors 575V Non process loads larger than 6 kW
600/347 V, 3Ph, 4W	Solidly Grounded	Large HVAC Lighting in Process Area Welding receptacles
208/120 V, 3Ph, 4W or 120 V, 1Ph	Solidly Grounded	Small motors 115 V Lighting in Buildings and Small HVAC Small loads up to 6 kW

18.15.4 Electrical Rooms (ER)

The main electrical equipment is installed in four (4) Electrical Rooms (ERs).

The Main substation’s Electrical Room is a walk-in and outdoor type, and it is located in the Main Substation yard. The main equipment installed is:

- MV-SW-200: MV Switchgear (5 kV, 2000 A, 250 MVA) to provide the general distribution 4.16 kV.
- MV-PFC-200: MV Power Factor Correction and Harmonic Filter, 750 kvar.

ER-100 is installed in a prefabricated E-House, and it is in the vicinity of the crusher and feeds the Crusher Area. The ER is supplied by a dedicated feeder from MV-SW-200.

ER-200 is located adjacent to the Concentrator and feeds the equipment related to areas: 200 - Grinding & Flotation (partially), 400 - Graphite Concentrate Dewatering and Drying, auxiliary services and also partially to the electrical heating of the Concentrator. LV-MCC-901: dedicated to the electrical heating of the Concentrator and to auxiliary services.

ER-400 is located adjacent to the Concentrator and feeds the equipment related to areas: 200 - Grinding & Flotation (partially), 400 - Graphite Concentrate Dewatering and Drying, 500 - Dry Screening, 600 - Bagging System, 800 - Reagents Preparation, 900 - Air & Water Services and partially to the electrical heating of the Concentrator building and to auxiliary services.

18.15.5 Motors and Starting Methods

All the motors are induction motors, high efficiency or premium efficiency. A starting method is selected depending on the motor size, on the type of starting torque, on the process needs (fixed speed or variable speed) but also on the grid reliability and on the starter cost. The retained starting methods are:

Direct-on-line ("DOL") starting is the most common method. The advantage is that it is: simple, reliable and less expensive. The disadvantage is that the starting line current is five to six times rated current. The DOL method is used for all low voltage motors, fixed speed applications.

The Variable Frequency Drives (VFD) enables low starting currents because the motor can produce the required torque at the rated current from zero to full speed. The VFD start provides smooth, step-less acceleration of motor and load while controlling inrush current and the starting torque. As a voltage regulator they can be used to control the stopping of the process.

18.15.6 Hazardous Locations

Part of the Graphite Concentrate and Bagging System areas related to the dry screening equipment and the area around the Graphite Concentrate Dryer is classified as hazardous area Class II, Division 2, Group F[6]. These areas are located in the concentrator building between the columns 1-5 and are separated from the rest of the building by a wall.

The electrical enclosures will be as per NEMA 7 & 9 and the motor enclosures will be as per Explosion Proof, Class II, Division 2, Group F.

The electrical equipment used in this area will be marked with the group of the specific dust for which it has been approved.

The luminaries, receptacles, cable trays, cables and the electrical installation will conform to the rules of the Canadian Electrical Code, Section 18 Hazardous Location.

[6] atmosphere containing carbon black, coal or coke dust; ignitable dust suspensions or hazardous dust accumulations only under abnormal conditions

18.15.7 Emergency Power

An emergency power system will be provided as a standby source of power to feed essential services (emergency and exit lighting, fire pumps, etc.) as well as critical process loads in the event of power loss from the power grid. The standby power source consists in one Diesel Generator (1.0 MW, 4.16 kV, PF = 0.8) located at the Main-Substation.

18.15.8 Power Factor Correction and Harmonics Filters

In order, to meet the Hydro-Québec requirements concerning the connection to the distribution grid the power factor value must be equal or greater than 0.95, the harmonics must be under the limits of all Hydro-Québec requirements[7].

For the power factor correction and harmonic filtration, a Power Factor Correction Unit (MV-PFC-200, 750 kvar, synchronized to 4.85-th harmonic) will be installed at the Main Substation.

The equipment generating harmonics are the VFD-s used in the process equipment requesting variable speed in operation.

Part of the 600 V heaters, controlled by SCRs, will also generate harmonics. To reduce the harmonics limits, the VFDs supplying the SAG mill and the Ball mill will be the Very Low Harmonics Type (AFE or minimum 24 pulses); the other VFD-s will be provided with 3% line reactors.

18.16 Automation

18.16.1 Control System Philosophy

The Project includes production facilities such as crusher, concentrator and concentrate packaging equipment. There are remote locations that include the fresh water and the reclaim water pumping stations.

The above-mentioned production facilities are controlled and supervised from the central control room equipped with a SCADA control system located in the ore processing plant.

The control system philosophy is based on the utilisation of Programmable Logic Controller (PLC) in all key areas of the plant. The ring topology is proposed to reduce the risk of downtime.

The PLC network will include one (1) PLC for the crusher area, three (3) PLC for the concentrator and one (1) PLC for each remote location.

[7] "C.25-01 *Exigences techniques relatives à l'émission d'harmoniques par des installation des clients raccordées au réseau de distribution d'Hydro-Québec*".

"C.22-03 *Exigences techniques relatives au raccordement des charges fluctuantes au réseau de distribution d'Hydro-Québec".*

There will be remote operator control stations for the following areas: crusher, grinding, flotation, dewatering and drying, the laboratory, and administration office.

Automation costs for the Project are included in the overall capital cost estimate.

18.16.2 Project Typical Process and Instrument Diagrams (P&ID)

The Project process flow sheets and typical P&ID drawings from DRA's database were used to prepare automation quantity estimates. No formal P&ID drawings were prepared for the Project.

DRA has also used supplier preliminary drawings and technical information received from bidders.

18.16.3 Instrumentation List and Input / Output Count

An instrument list for the Project was developed using the process flow sheets, typical P&ID drawings and technical information from potential suppliers.

The Input / Output (I/O) count is derivate from the instrument list. The I/O count includes the digital points, the process instruments, the on / off valves, the control valves, and the instruments supplied with the mechanical equipment.

All the I/O's of the process areas are integrated in local PLC automation panels rack located in electrical room of the area.

The following method was used to calculate the I/O count:

- All fixed speed motor starters and Variable Frequency Drive are supplied with electronic overload. The electronic overload includes input / output module and a communication link to transfer motor status and command to the PLC. All motor local push button stations will be wired to the electronic overload.
- Four digital inputs and one or two digital outputs for process valves equipped with position switches to indicate the close/open status and the local push button station. Local push button only for the mainstream valves;
- All instruments will support the Hart protocol and will be wired to the PLC I/O rack with a 4 to 20 ma signal.
- All pump boxes are equipped with a non-contact level detector (Ultrasonic or Radar type for dusty applications).
- All conveyors are equipped and supplied with safety pull cords, misalignment switches and zero speed switches. All switches are wired to PLC I/O cards. The pull cords are wired to the motor starter for safety.

18.16.4 Local Control System and Instruments

The proposed control system includes local push button stations for all motors and the mainstream on/off valves for maintenance and safety.

The push button stations include a local start/stop station for all motor but no selector switch manual/ automatic in the field. The manual / automatic function is accessible only at the Scada operating station and is programmed by area. The push button station can only be activated when the plant operator has selected which process area to change to manual mode for the push button function start. The stop function is always functional.

For the critical equipment, an extra push button (Emergency Stop) is added directly connected to the motor starter.

All the control loops are integrated and controlled by the PLC. For complex instrument or equipment supplied with PLC, a communication link is added to get remote status and diagnostics for the plant supervision control system.

All the field instruments and switches are wired to the PLC through junction boxes and digital and analogue input/output modules mounted in automation panels located in area electrical rooms. The standard 4-20 mA signal with Hart protocol is the standard for instrumentation. The control logic is performed by the PLC.

The proposed PLC wiring includes junction boxes for instrument power supply, digital signals and analogue signals. The junction boxes will be located and installed in all the process areas. The junction boxes are interconnected to the remote Input/Output rack panel by multi-conductor cables.

18.16.5 Fibre Optic Network

An Ethernet network will be installed in the Ore Processing Plant.

The proposed network communication system includes one fibre optic cable (16 fibres) with patch panels for the PLC and operator stations. The PLC communication network and the operator stations used different fibers from the same cable.

The details of the proposed configuration and the cable path are shown on control architecture drawings.

The Ethernet protocol communication system for a PLC application is fast, reliable and is the industry standard. All PLC manufacturers support the Ethernet protocol.

The remote facilities such as the fresh and reclaim water pump houses will have local PLC control link to the main control system by radio communication system with antenna.

18.16.6 SYSTEM SERVER / SOFTWARE

For the processing plant, the proposed system includes a redundant system server, one historian server and two operator workstations located in the central control room and remote operator stations in the field. The redundant server insures Network availability and data protection.

An Engineering station is also supplied for the system programming and the maintenance debugging. The station will be in plant electrical rooms or in the central control room.

The proposed system is designed with PLC and the equipment is supplied with standard PLC programming software and standard software for the supervisory and control system (SCADA). This type of equipment is available from any major PLC supplier.

The Scada system includes a development licence and run time licenses for the supervision and control of the entire plant operation and has the capacity to communicate with management's computer network.

The electrical power supply for all PLC and servers will include Uninterrupted Power Supply (UPS) units located in pressurised electrical rooms.

18.17 Telecommunication

The plant telecommunication system will be linked to the service provider by microwave link with provision for future Cell Phone telecom equipment and installed in the local telecommunication tower and shelter. The site plant communication system will be based on Ethernet links throughout the ore processing plant and the administrative building.

A single mode fiber optic cable will be deployed through the plant for telephony and Internet communication. The proposal included also redundant plant servers and firewall routers and a back-up server located in the telecom shelter. The monthly cost for the local telephony, internet access and mobile radio is included in the operation costs.

18.17.1 TELECOMMUNICATION SYSTEM AND MOBILE RADIO SYSTEM

The telecommunication services include the communication tower located on site and a communication shelter hosting the plant communication interface.

The telecommunication systems include:

- IP PBX phone system;
- Internet access;
- Mobile radio communication system;
- Camera and security system.

The mobile radio system will be used for the construction phase, the operation of the mine site and the maintenance crew.

18.17.2 TELECOMMUNICATION SERVICES

The site will be connected to an Internet service provider (ISP) and IP PBX phone system (ITSP) via a microwave communications link between the production site and Fermont. The microwave link will be supplied and maintained by the service supplier.

For the FSU, the bandwidth cost has been evaluated with one (1) Gbps. The communication system will be installed in phases.

18.17.3 TELECOMMUNICATION DISTRIBUTION

Telecommunication distribution will be through the concentrator fibre optic network covering all areas of the concentrator, offices and gate house.

A radio communication system will be used for the mine and other auxiliary outside of the concentrator.

18.17.4 CAMERA AND SECURITY SYSTEM

A camera system, with recorder and viewer, will be installed in the main gate office. Aside from the gate cameras, five (5) cameras will be installed in the concentrator for metallurgical process supervision. One (1) viewer station will be installed in the central control room.

19 MARKET STUDIES AND CONTRACTS

An independent market study was carried out by Benchmark Mineral Intelligence to report on the world supply and demand for flake graphite concentrate and provide a price forecast for over a 20 year period commencing in 2023. The following is a summary of the Market Study.

19.1 Introduction

Flake graphite pricing is dictated by both the mesh size and the carbon purity of the flake.

Larger mesh sizes demand a premium price. Tighter supply conditions for these grades mean that prices can escalate rapidly at mesh sizes larger than +80 mesh. Similarly, flake graphite concentrate with greater carbon purity receives a premium price because it requires more processing from ore to remove disruptive impurities and is less widely produced.

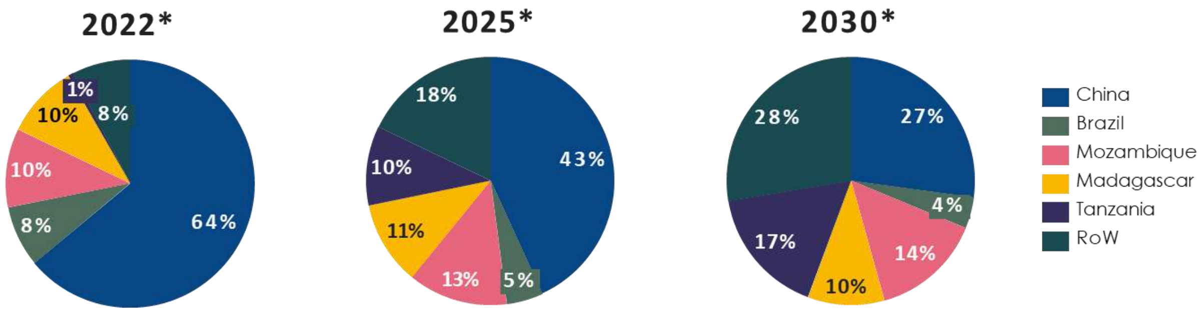
A carbon content of 90% C and above is generally required in all refractories, foundry and crucible applications. The most common grade used in refractory applications is 92-94% C, but some major producers will demand a purity of up to 96% for specialist refractory and foundry applications. The price of grades greater than 94% C increase at an accelerated rate as the carbon content increases, due to the greater cost involved in refining the material towards the higher purities required for high-tech and more specialist applications.

19.2 Supply

China has been the leading global supplier of flake graphite for a generation and was the leading exporter prior to the recent emergence of several large African projects. These projects have begun to supply into China, and in 2019 the country became a net importer of flake graphite for the first time as depicted in Figure 19.1.

The market in China is dominated by a tight network of large companies where flake is easy to source; however, obtaining consistent quality is the major concern.

Figure 19.1 – Natural Flake Supply by Geographical Location



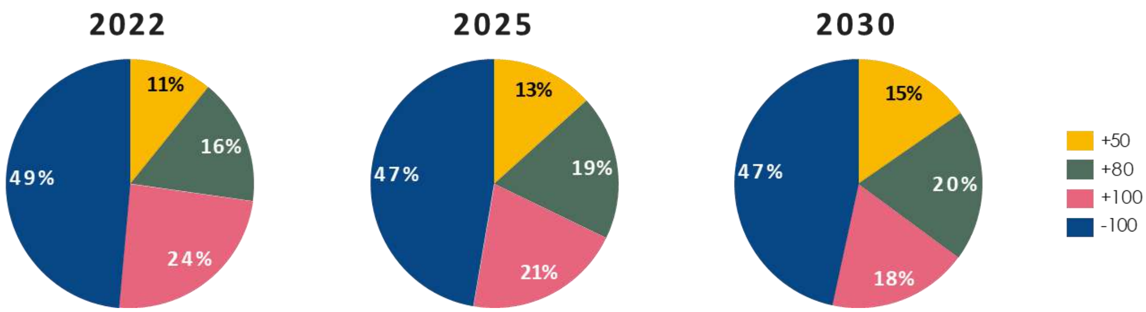
*Operating, highly probable, probable and possible included
Source: Benchmark Mineral Intelligence, 2022

Flake graphite supply will be dominated by the -100-mesh size due to the demand from lithium-ion batteries; however, larger flake sizes will have to be directed into this market via processing to meet demand. Natural flake graphite must be upgraded to 99.9+% carbon content to make spherical graphite for lithium-ion batteries. Size is also an important factor for batteries where typically only -100 mesh size is used.

Flake sizes larger than -100 mesh are typically not used largely due to the economics. Larger mesh sizes have historically carried a premium as they are used in more niche markets which can pay more.

However, as battery demand continues to grow, it is envisioned that the larger flake sizes will increasingly be processed for use in the battery supply chain.

Figure 19.2 – Flake Graphite Supply by Mesh Size



Source: Benchmark Mineral Intelligence, 2022

19.3 Demand

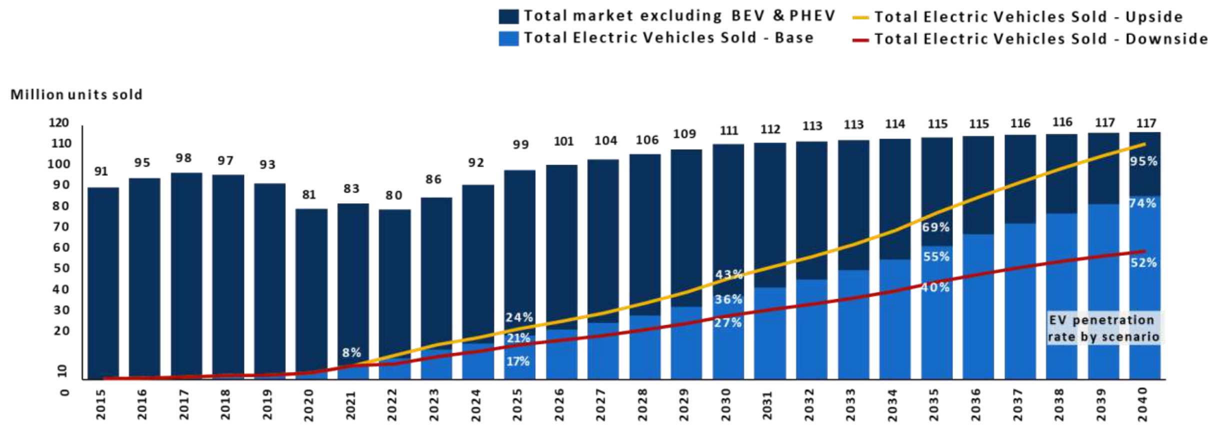
Demand from transportation and in particular passenger vehicles will be the primary cause of lithium-ion battery demand. Battery demand from all sectors is forecast to grow from ~0.6 TWh in 2022, to ~2.8 TWh in 2030 and ~7.7 TWh in 2040.

The lithium-ion battery market is shared between three main sectors with the split in 2022 forecast as:

- Transportation (EV) = ~79%;
- Energy storage systems (ESS) = ~9%;
- Portable electronics = ~11%.

As such, the main driver of lithium-ion battery demand will be from the increased uptake of EVs, and in particular, passenger cars and light duty vehicles.

Figure 19.3 – Lithium Ion Battery Demand Forecast by Sector



Source: Rho Motion and Benchmark Mineral Intelligence, 2022

Lithium-ion batteries account for ~50% of current natural flake graphite demand of which electric vehicles account for ~79% of battery demand.

"Other uses" currently account for ~50% of flake graphite demand such as:

- Refractory and foundry' dominate, making use of the heat resistant material properties of graphite to make bricks, crucibles etc.
- Refractory - a material resistant to heat e.g. graphite bricks
- Foundry - a factory where metal is melted and shaped into various objects

By 2030, lithium-ion batteries are forecast to account for ~81% of natural flake graphite demand of which electric vehicles account for ~87% of battery demand.

Flake graphite also has applications in other industrial markets such as oil drilling. Consumption from these industries is expected to remain stable over the coming five years. Other non-industrial applications for graphite include graphene, pencils, bakery equipment, and trucking industries.

19.4 Pricing

19.4.1 Flake Graphite Price Forecast China FOB, 94 to 95% C

Benchmark regularly prices flake graphite on a China FOB basis due to the current market concentration within China it is the most widely recognized, used and hence 'standard price' shown in reports and studies.

- The larger flake sizes attract a premium as they are less abundant, and they are used in applications which can command a large premium.

- Prices rise in the -100-mesh size as the deficit increases (and in the +100 and +80 as they are channelled via processing into the battery market). These rises continue until new operations are incentivized on come online then fall past 2026.
- The supply of the +50-mesh size is forecast to overtake demand, leading to a reduction in the price premium more quickly.
- Prices of all mesh sizes are forecast to converge from current levels as new supply is brought online.

As the battery supply chain develops, OEMs and battery makers, with increasing government support, are pushing for all possible elements to be brought closer to the key end markets of North America and Europe.

In North America and Europe, many of the projects producing these products are at a fledgling stage of development; however, potential premiums could be achieved in these locations. Some factors that may result in premiums are noted as follows:

- Increasing government support has been the driving force behind the current and forecasted rise of electric vehicles and the battery supply chain.
- The potential incentives that can be accessed via the recently introduced Inflation Reduction Act legislation offer automakers considerable cost reductions on batteries using upstream components/raw materials sourced from within North America or, to a lesser extent, free trade partner countries.
- In the near term, this is likely to see increased capital committed to battery raw material mines or battery material processing facilities in North America. In the longer-term it raises the potential for pricing premia for material sourced from North America or Free Trade Agreement (FTA) nations. With relatively limited prospects to expand the raw material supply base for graphite production in North America especially ahead of the introduction of the incentives in 2024, a number of producers could seek to expand or establish value added processing capabilities in the region to support burgeoning battery cell demand.
- Ex China companies are typically committed to operating at a higher standard of environmental, social and governance (ESG) scrutiny via a series of strategic measures that may include, but are not limited to, dedicated ESG measures in annual reports, using renewable power, water management and attaining carbon neutrality.
- The potential marketability of a product in a North American or European supply chain with ESG in mind, could be valued by battery makers, OEMs and the final EV customer, and therefore a premium could exist.
- The supply chain surety and negation of potential issues relating to China, such as shipping issues (Suez Canal blockage 2021) potential hoarding of raw materials for domestic consumption by China, pandemic related shutdowns and political issues such as sanctions or

export bans, could add a premium. Furthermore, customers could benefit from logistical advantages such as access to the product immediately and holding reduced or zero inventory.

- Possible import tariffs

19.4.2 Flake Graphite Price Forecast: Northern Europe CIF, 94 - 95% C

The China FOB pricing has been modified with various factors which could result in a potential Northern European premium with the same rationale as for North America however:

- A slightly higher premium is placed on the North American products in comparison to Europe, primarily due to the Inflation Reduction Act.
- Currently Europe has a more established supply base, and the act will mean automakers should pursue batteries with North American-sourced upstream components/raw materials due to cost reductions.

19.4.3 Potential Premiums Available on Higher Carbon Grades

The majority of flake graphite produced within China has carbon content 94 – 95% and for most downstream applications e.g. refractory materials, this content is enough. For some high-end market applications, the carbon content needs to be more than 99% which requires chemical purification.

A small benefit of higher carbon content flake is the reduced cost of chemical purification however the downside of grades higher than 94 - 95% and below 97 - 98% is the limited market, due to the reasons discussed above.

Internal analysts and external industry sources have provided the potential premiums for -100 mesh flake above 94 95%. Note that there is a significant range around these due to the factors discussed below, therefore, these premiums should be viewed as high level and indicative.

- 95-96% C = 5%;
- 96-97% C = 10%;
- 97-98% C = 20%;
- 98-99% C = 40%;

Factors determining premiums include i) location ii) contractual terms iii) impurities iv) mesh size and v) application and therefore a large range typically exists at any given time.

19.4.4 Lac Knife Price Forecast: North America CIF

A price forecast for the specific mesh sizes and carbon contents of the Lac Knife project on a North America East Coast CIF basis is presented including a basket price which takes into consideration the proportions of each mesh at the Project.

1. Mesh sizes and carbon grades

   - Modified based on the current China FOB prices with the same rationale applied to mesh sizes as the Benchmark standard 94 - 95% C forecast.

2. Shipping

   - China to North America East Coast with the rates applied using the same rationale as discussed previously. Note this has resulted in a slightly elevated price for 2022 due to the raised shipping rates because of the pandemic.

3. North America Extra Premium

   - North America extra premium considering increased ESG standards, the benefits of a localised supply chain and government support (such as the Inflation Reduction Act) applied using the same rationale.

19.5 Flake Graphite Price Scenario

The graphite concentrate sales price used for the FSU was established at US$ 1,679 /tonne which is a five-year average as the projections over the life of the mine. The selling price was determined using pricing information and calculations from the Benchmark Mineral Intelligence (Benchmark) Flake Graphite Price Index. Benchmark is an independent credible source who compiles international graphite prices for various commercial size fractions and concentrate purities. The Lac Knife graphite concentrate value was calculated based on the weighted average of each size fraction and purity obtained during metallurgical testing. Based on this information, and considering premiums for graphite expected grades, the price forecast for Lac Knife is presented in Table 19.1.

Table 19.1 – North America East Coast, Lac Knife Basket, Nominal

Concentrate Size Fraction	**Weight** (%)	**Grade** Cg%	**Price** USD/t
+48 mesh (Jumbo)	10.0	99.7	$2,040
–48+80 mesh (Large)	23.0	99.7	$1,868
–80+150 mesh (Intermediate)	31.4	99.4	$1,762
–150+400 mesh (Fine)	31.2	97.0	$1,579
–400 mesh (Tailings)	4.4	86.8	$0
Weighted Average	**100.0**	**98.2**	$1,679

19.6 Contracts

In December 2013, the Company executed an offtake agreement for future production from the Lac Knife graphite Project. The strategic agreement, for up to 40,000 tonnes per year, with a minimum amount of 50% of production of graphite concentrate and value-added products produced, was signed on December 19, 2013, with an industrial conglomerate, comprised of heavy industry, manufacturing and technology companies located in Dalian City, Liaoning Province, China. The 10-year agreement calls for the supply of up to 40,000 tonnes per year of large, medium, and fine flake graphite concentrate and value-added graphite products from the proposed Lac Knife mining and processing facility. The specific terms of the agreement, including pricing and renewal rights, are confidential for competitive reasons.

In September 2015, Focus executed two definitive offtake agreements with Grafoid Inc. (“Grafoid”), a related party, as follows:

a. Graphene Offtake

Under the terms of the Graphene Offtake agreement, Grafoid is to pay Focus $1,000,000, for the right of first refusal to purchase up to an annual maximum of 1,000 tonnes of high purity + 80-mesh graphite concentrate originating from the Lac Knife production facility or from another source over a 10-year period. It also grants Grafoid the right of first refusal to extend and expand the agreement for an additional 10-year period. The pricing for an additional 10-year period would be set at market price less 10%.

b. Polymer Offtake

Under the terms of the Polymer Offtake agreement, Grafoid is to pay Focus $1,000,000, for the right of first refusal to purchase up to an annual maximum of 25,000 tonnes of graphite concentrate originating from the Lac Knife production facility or from another source for a 10-year period. It also grants Grafoid the right of first refusal to extend and expand the agreement for an additional 10-year period. The pricing for an additional 10-year period would be set at market price less 10%.

As of December 31, 2022, the Company has not received any payments from Grafoid in relation to the offtake agreements. As each offtake agreement is conditional on the Company having received the entire $1,000,000 from Grafoid, the Company does not yet have any obligation to sell graphite concentrate to Grafoid.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Relations with First Nations and Non-Native Communities

The Project is located in the Rivière-Mouchalagane Municipality, the southern division of the Caniapiscau Regional County Municipality ("MRC"), in northwestern Côte-Nord administrative region (09) of Québec. Although located in non-organized territory. The Project lies 27 km to the south-southwest of the city of Fermont (population (2021): 2,056), a town that services the iron ore mines at Mont Wright and Lac Bloom and serves as the administrative seat of the Caniapiscau MRC. In addition to Fermont, the development of the Project is also expected to impact the communities of Sept-Îles (population (2021): 25,074), and Baie-Comeau (population (2021): 20,687), both industrial port cities, and the two largest non-native communities in the Côte-Nord region.

The Project lies in the Nitassinan (ancestral territories) of the Uashat Mak-Mani-Utenam First Nations, an Innu (Montagnais) community (population (2021): 4,900) located in Sept-Îles. However, the Nitassinan is shared with the Matimekosh-Lake John Innu First Nations (population (2022): 1,042), near Schefferville.

Interactions with communities were initiated by Focus soon after the company acquired the Project in 2010. The first contacts, regarding operational issues, were with the municipality of Fermont and the Lagopèdes Snowmobile Club in order to obtain permission to access the Cumstock-Mazarrin road which links Highway 389 and the Project for the 2010 winter core drilling program. This road is part of the club's federated snowmobile trails and is closed to motor vehicle traffic during winter.

Official representations with First Nations and other stakeholders potentially impacted by the development of the Project were conducted in 2013-1014, and culminated with the signing, on October 28, 2014, of a Pre-Development Agreement (PDA) with the Uashat Mak-Mani-Utenam Innu band council. Shortly after, on December 1, 2014, Focus submitted an Environmental and Social Impact Assessment (ESIA) study for the Project based on the 2014 feasibility study, to the Ministère de l'Environnement, et de la Lutte contre les changements climatiques du Québec (MELCC).

On April 16, 2015, Focus received the first of two series of questions from the MELCC on the ESIA study. The process to answer Series I questions took Focus 20 months to complete, with final answers submitted to MELCC on November 30, 2016. On March 8, 2017, Focus received a second series of questions from the MELCC. In February 2018, Focus commissioned new field, laboratory and desktop investigations designed to answer Series II questions from the MELCC, but all work ESIA related work was suspended on December 1, 2018. The Project became dormant for the next year and a half, and all community liaison, information and Project awareness initiatives were put on hold pending new corporate developments with Focus.

Work on the EISA study resumed on July 8, 2020, with community liaison activities beginning in early 2021, and have been ongoing since according to MELCC directives. Community consultations are set to resume in early 2023 following the release of a current FSU. Focus anticipates filing an updated ESIA study with the MELCC later in 2023.

In 2014, the following representations were made to:

- Uashat Mak-Mani-Utenam Innu band council and community (3 meetings).
- Current Chief M. McKenzie and former chiefs of Uashat Mak-Mani-Utenam.
- The Grégoire family, tallymans of the trap lines where the Project is located.
- The city of Fermont (mayor and representatives) and officials from the Caniapiscau MRC.
- Fermont general population (3 open-doors meetings).
- Local territory users (hunters, cabin owners, local outfitters).
- Recreational associations (the Lagopèdes snowmobile Club, the local ATV club and the Fermont Tourism Association).
- Association de protection de la rivière Moisie (Moisie River Protection Association).

The purposes of these initial meetings were to present the Project to decision-makers, communities and other stakeholders, to listen their concerns, gather their comments, and then set the paths to find solutions to address their concerns.

20.1.1 Innu Communities

The Innu (formerly called “Montagnais”) are the indigenous inhabitants of a vast territory that extends from Lac Saint-Jean in the west to northeastern Labrador in the east. In Québec, the Innu form nine distinct communities. Seven are located the Côte-Nord region, along the coast of the St-Lawrence estuary: Essipit (Les Escoumins), Pessamit (Betsiamites), Uashat mak Mani-utenam (Sept-Îles and Malioténam), Ekuanitshit (Mingan), Natashquan, Unaman-shipu (La Romaine) and Pakut-shipu (Saint-Augustin). The other two are located on the west bank of Lac Saint-Jean in the Saguenay-Lac-Saint-Jean administrative region (Mashteuiatsh), and next to Schefferville close to the boundary with Labrador (Matimekosh-Lac John), respectively. With close to 20,000 members, the Innu are one of the most populous Indigenous people of Québec.

In the pre-colonial period, the Innu were nomadic, living off of hunting and gathering, and they practiced seasonal migrations over a vast territory. They settled as “communities” at the beginning of the 1900’s and are quite well integrated into the social-economical-cultural fabric of the Côte-Nord region. Although recognized by the 1876 “Indian act” of Canada, the Innu never conceded their land to the crown of Canada through official agreements (“Post-Confederation treaties”). Consequently, their rights over their ancestral territories, or Nitassinans, have never been clarified. In 2004, the Québec and federal governments and four of the Innu communities initiated the

"Approche Commune" (Joint Approach) negotiation toward a memorandum of understanding which established their involvement with both governments. The Joint Approach describes the title and rights of the Innu in their Nitassinan, Innu self-government, financial arrangements with the two governments, social development and economic development. The Joint Approach does not currently have legal effect. It was designed as a framework that can be utilized in writing a treaty regarding the Innu Nations and the governments of Canada and Québec. However, the two Innue communities potentially impacted by the Project, Uashat Mak-Mani-Utenam (ITUM) and Matimekosh-Lac John were not parties to the Joint Approach negotiations.

Focus is currently seeking to resume discussions initiated in 2013 with the ITUM and Matimekosh-Lac John communities, to update them on the investigations that were carried out on the Project since 2020 and on their results and to collect questions and concerns from elected representatives, talllymen, families and local organizations. A field visit was organized with ITUM representatives on November 11, 2021, and information sessions and consultations are planned for 2023, once the FSU is completed and published.

20.1.2 Consultation and Information Process

Consultative and informative sessions with local communities and stakeholders are mandatory components of the ESIA process. The dominant concern over the Project remains relations between Focus and the ITUM band council as well as with the Grégoire family who have ancestral rights over the trap lines which host the Project. To the author's knowledge, the Innu favour long term approaches to collaboration with proponents of economic development projects in order to develop a sustainable trust relationship, towards mutual benefits. Band council and community members expect to be kept regularly informed of the Project's development, as well as about the assessment of environmental impacts. Such an approach requires a community liaison, information and consultation strategy for the Project be put in place by Focus. The ITUM band council and the community have confirmed that the Project is effectively located within their Nitassinan and they have indicated that Focus must consult with the Grégoire family. Meetings between members of the Grégoire family and Focus representatives were held on June 18 and 19, 2013.

Meetings between ITUM and Focus representatives led to a signing of a Pre-Development Agreement (PDA) with the ITUM band council on October 28, 2014. This agreement is non-binding and does not constitute a form of consent for the Project, but rather sets out the ground rules for how negotiations will proceed with the goal of developing a mutually agreed upon Impact and Benefit Agreement (IBA) designed to:

- Establish information and communication protocols between Focus and ITUM;
- Build a relationship of trust between the parties when they embark on negotiations for an IBA.

- Set the terms and conditions under which Focus will provide financial support to ITUM for its analysis and participation in the environmental assessment process and for its consultative communications with the Company in connection with the project.

If negotiations between the two parties resume in regard of the Project, the negotiations will need to encompass the following:

- New protocols for communications, information and consultations;
- The involvement of ITUM in the environmental impact assessment process for the Project;
- Pre-hiring training program for community workers;
- Services and procurements contracts to be offered to community contractors or organizations;
- Financial contributions to ITUM.

To this date, no IBA has been agreed between ITUM and Focus. Since 2016, communications between the two parties have been limited and irregular. The FSU and ongoing ESIA study will show significant changes in the Project, and talks are set to resume upon the release of the FSU report.

20.1.3 Territorial Claims

Innu Takuaikan Uashat mak Mani-utenam (ITUM) band council, on behalf of their community, have informed Focus that the Project is located within their Nitassinan, and this assertion has not been contested by Focus. Consequently, it is mutually understood that ITUM's approval is a prerequisite to the development of the Project.

20.1.4 Economic Benefits

ITUM is expressly concerned about the potential for economic fallout from the Project to the community, more specifically in regard of employment and training. According to the terms of the Predevelopment Agreement (PDA), prior to undertaking negotiations over an IBA, Focus must commit to offering job opportunities to the community. It must also commit to providing first rights in the bidding process for contracts to local Innu contractors and entrepreneurs within the limits of normal competitiveness and competence.

20.1.5 Site Rehabilitation

By signing the PDA with ITUM, Focus commits to restoring all sites where Focus has carried out exploration activities. Focus has also committed to undertake the cleaning, removing and disposal of any residual and potentially hazardous material from all sites within the Project's perimeter where exploration work was carried out.

20.1.6 City of Fermont, Caniapiscau Regional Municipality, Local Stakeholders

Focus resumed communications with the City of Fermont and the Caniapiscau regional municipal county (MRC) upon the restart of field ESIA-related activities in 2021. Focus is planning to resume the community consultation process initiated in 2013 with the city the Caniapiscau MRC and other local stakeholders upon the publication of the FSU report. Consultation meetings are planned for 2023, as part of the ongoing ESIA study. These meetings aim to inform the various stakeholders and gather their concerns relative to the Project's environmental, social and economic impacts. Various concerns were expressed in 2013-2014 meetings, which have been partly addressed in the current ESIA.

20.1.7 Water Quality

One of the important concerns expressed by local stakeholders during the consultations focused on the potential impact of the Project on water quality in the nearby Pékans River. The Pékans River, into which Lac Knife flows, is the main tributary of the Moisie River, considered one of the most important spawning grounds for Atlantic Salmon in eastern North America and as well as a patrimonial landmark for the Innus and other stakeholders. In February 2003, the Government of Québec, announced plans to create the Moisie River Aquatic Reserve (MRAR), the first river in Québec to the fully protected against any form of industrial exploitation. The proposed MRAR includes the entire course of the Pékans River. The Project is bounded to the north, west and south by lands reserved by the Québec government for the creation of the MRAR.

The issue of protecting the Pékans River was identified early on in the environmental assessment process and during the review by the MELCC of Focus's 2014 ESIA study. Additional safeguards have been built into the design of the Project as part of the FSU to prevent the contamination of surface water and groundwater flowing into the Pékans River. New or improved mitigation processes including water recycling, water treatment and acid generation drainage mitigation have also been incorporated into the Project.

Water originating from the FTSF, the open pit mine, the mill and the various other mine-related infrastructure, either through surface drainage or run-off, will be collected through a network of lined ditches and then pumped or channeled into a water storage pond prior to be being processed in a treatment plant prior to be being recycled in the beneficiation circuit. The overflow from the treatment plant, such as during snow melt out periods, will be released into Lac Knife. The water balance takes into account that part of the water is evaporated from the finished graphite concentrate during drying. Recycling of drainage water also considerably reduces the need for tapping fresh water from Lac Knife.

Modeling, to determine the flow and geochemical quality of groundwater, is currently being carried out by an engineering firm. A new water treatment plan will also be designed, based on results from acid mining drainage mitigated with dolomitic marble that is currently being tested by *Unité de* *recherche et de service en technologie minérale* (URSTM) which is associated to the *Université du Québec en Abitibi-Témiscamingue* (UQAT) based in Rouyn-Noranda, Québec. A lime plant is likely to be added to the water treatment plant if the system requires some pH adjustment due to the acidity of water from mine infrastructure. All effluent water will have to meet the standards indicated in MELCCFP Directive 019 and the Regulation regarding Metal Mining Effluent (RMME) or any other standards that could be indicated by this authority.

Complete details on the water quality safeguards and mitigation measures will be included in the updated ESIA study that is underway by Focus.

20.2 Recreational Activities

20.2.1 Sport Fishing and Traditional Salmon Fishing

Although the Moisie and Pékans Rivers are protected as an aquatic reserve, thereby preventing activities such as logging, hydroelectric power and mining, traditional uses such as hunting, canoeing, camping and sport fishing are permitted within reserve boundaries. Salmon fishing in the Moisie River alone generates $7 to $10 million annually to the Association de pêche de la Rivière Moisie (Moisie River Fishing Association or APRM), apart from revenues for Innu outfitters. Considering that water quality is critical for the preservation of salmon habitats, the APRM expressed their concerns that mining activity at the Project could deteriorate the Pékans River's water inflow. Although the APRM agreed that the likelihood of a major spill of hazardous substances is low, the consequences of such a spill could be severe if the contaminants were to seep down to the water table and then migrate downslope to the river or into nearby water bodies.

The APRM has requested that they be included in the community consultation process and they insist that Focus will have to demonstrate the safety of the Project's mining infrastructure, especially that of the TSF. Furthermore, the APRM indicated that the TSF will have to be located as far away and isolated as possible from any significant water bodies and proper mitigation measure will have to be put in place to address any potential environmental contamination. The difficulty, however, is that the Lac Knife graphite deposit and the future mine infrastructure are located on a hill crest and are surrounded by various water bodies and wetlands, and there is no low-lying flat ground available within the Project's perimeter that can house the TSF, mill and other mine related infrastructure.

The FSU addresses this issue and plans for the co-disposition of a mixture of filtered tailings amended with dolomitic marble in the TSF, which is different from the concept presented by Focus in its 2014 ESIA study which proposed the co-disposal of tailings and waste rocks in the same storage facility. This last concept was seriously questioned by the MELCCFP, particularly with regard to the risk of geochemical instability and the possibility of generating acid mine drainage. The new FTSF option proposed by Focus is also mechanically and chemically more stable than conventional slurry deposition in a settling pond. Focus is aware that the co-disposal of filtered tailings and dolomitic marble in the TSF currently proposed, although intuitive, is not conventional and that no precedent exists in Québec. Focus intends to present the concept along with the balance of the Project to the stakeholders once it has been experimentally tested in a laboratory and evaluated by MELCCFP.

Focus anticipates that the development of the Project will not adversely impact sport fishing activities on Lac Knife, aside from a restricted area near the final effluent from the water treatment plant. A boating ramp can be built by Focus at the north end of Lac Knife to facilitate access.

20.2.2 ATV and Snowmobiling Activities

The Cumstock and Mazarin roads are currently used as part of the regional network of ATV and Skidoo trails, while the old Mazarin exploration camp is still used as shelter by the Lagopèdes Snowmobile Club. Access to the site in wintertime has repeatedly been complicated by this issue, and mitigation measures had to be agreed between Focus and the club for each season that Focus worked on the Project. As an example, winter mobilisation of heavy machinery to the Project needed to be coordinated with the club so as to cause minimum interference with club activities and Focus had to restore the trail on each occasion.

While the 2014 feasibility study considered upgrading the Cumstock and Mazarin roads to build, operate, and service the Project, under the FSU, Focus intends to build a new 5.7 km-long access road that will connect the Project to the proposed new Highway 389 deviation, which is under construction. This will provide a shorter and safer access to the mine site from the originally planned 32 km access road, and it will avoid the existing Cumstock and Mazarin trail; hence not impairing snowmobiling and ATV activities by the Lagopèdes club.

The old Mazarin camp which was used by Lagopède club, now in a state of disrepair, will eventually be demolished, as it is located within the mining infrastructure perimeter. A new camp can be built as compensation for the loss of the old one. The new building could be located at the north end of Lac Knife, close to the bridge across the outlet stream, which is outside the perimeter of the Project.

20.2.3 Cabin Owners and Local Residents

A few private cabins, mostly used for seasonal hunting or fishing, although seldomly inhabited year-round, are located at the north end of Lac Knife and along the shores of Cladonie Lake to the northeast. None are located on Lac Rainy. In 2014, cabin owners expressed their concern of heightened noise due to increased road traffic along the access road, blasting (2-3 times a week) and operations noise as well as the potential expropriation as a result of the construction, operation and servicing of the Lac Knife mine. These effects, however, will be mitigated by the new access to the Project from the proposed Highway 389 relocation.

20.2.4 City of Fermont

In 2014, city of Fermont indicated that the workforce for the operation of the mine shall reside in the city, and that temporary on-site accommodation of workers would be tolerated only during the construction phase. However, no such construction camp is planned by Focus. Housing availability in Fermont can occasionally be an issue. Hiring of workers from First Nation communities, who would need to be accommodated in Fermont, has been discussed with the community, who expressed a limited interest so far. Similarly, local residency would be difficult to impose on workers from third parties in the event that segments of the operations are contracted out, such as mining and earthmoving. Consequently, the housing situation for Focus's workforce will need to be addressed with local authorities and proper planning would be required by both Focus and local authorities. Various options were presented by the parties. It is anticipated that the Lac Knife mine will create about 100 direct permanent jobs when in commercial production.

The Fermont business community expect that service contracts shall be preferably fulfilled locally.

20.2.5 2021 Resuming of Communication

In 2021, Focus Graphite resumed its communication process with Uashat Mak Mani-Utenam and Matimekosh-Lac-John Innu communities. To this end, Focus has retained the services of MU Conseils, a non-profit consulting group based in Baie-Comeau to guide the Company in this process and to act as facilitator with ITUM in their social and environmental acceptability process. MU Conseils will also assist Focus in its efforts to build a cordial relationship with community in order enable dialog and mutual understanding. Mu Conseils has set-up an informative web-site for the Lac Knife project (https://www.lacknife.com/) designed to be accessible to local communities and stakeholders and that allows them to ask questions and obtain answers about their various concerns.

20.2.6 Site visit with ITUM Representatives

A site visit has been conducted on November 11, 2021, with Mr. Jimmy Mckenzie and Donald Einish from ITUM, Ms Kristina Maud Bergeron from MU Conseils and Mr. Réjean Girard from IOS. The visit, the first for ITUM representatives, aimed to introduce the technical aspects of the Project, to visualize its layout and footprint including of the size of the proposed dolomite quarry at Montagne-aux-Bouleaux. The following points were discussed:

- Use of graphite, deposit description and benefits of the Project on a global perspective.
- Location of the pit and FTSF in regard of Lac Knife and Pékans River.
- Acid generation issues caused by oxidation of sulphides, including a visit to a naturally oxidized outcrop, and how this will be mitigated through liming with dolomitic marble.
- Review of the water management plan and of the lock cycle operation of the concentrator.
- Power line and access road location, in relation to the proposed Highway 389 relocation.

The site visit was cordial and perceived as informative. ITUM representatives were manifestly interested by the potential economic fallouts of the Project, namely those related to their salmon outfitting activities.

20.3 Environmental Approval and Permitting Requirements

20.3.1 Introduction

This section presents environmental approvals and permitting requirements based on the current knowledge of the Project and on the current environmental provincial, federal and municipal (including MRC and local municipalities) laws and regulations. Federal and provincial regulations mainly cover the environmental aspect, and their assessments could impact the schedule of the Project, while land use planning and cohabitation aspects are dominantly covered under municipal regulations.

20.3.2 Provincial Regulatory Framework

In the Province of Québec, the environmental requirements are defined in the Q-2 Environment Quality Act (EQA; Chapter Q-2; MELCCFP 2022) Under the EQA, a person (company) that undertakes the development of a mining project in the province of Québec is given responsibilities in terms of environmental protection. These responsibilities are presented in the various sections and articles of Chapter IV of the EQA.

Thus, according to Article 20:

> “No one may emit, deposit, issue or discharge or allow the emission, deposit, issuance or discharge into the environment of a contaminant in a greater quantity or concentration than that provided for by regulation of the Government.”
>
> “The same prohibition applies to the emission, deposit, issuance or discharge of any contaminant the presence of which in the environment is prohibited by regulation of the Government or is likely to affect the life, health, safety, welfare or comfort of human beings, or to cause damage to or otherwise impair the quality of the soil, vegetation, wildlife or property (MELCCFP, 2022).”

Similarly, and according to Article 31.1 of the EQA,

> “No person (including a mining corporation) may undertake any construction, work, activity or operation, or carry out work according to a plan or program, in the cases provided for by regulation of the Government without following the environmental impact assessment and review procedure and obtaining an authorization certificate from the Government.”

The Regulation respecting the Environmental Impact Assessment and Review of certain Projects (RREIARP; Chapter Q-2, r.23.1; MELCCFP 2022) lists all project types located south of the 55th parallel that are subjected to the Québec provincial ESIA as well as review procedure. According to Article 2 from Division II of the RREIARP:

> "The projects listed in Schedule 1 are subject to the ESIA and review procedure provided for in subdivision 4 of Division II of Chapter IV of Title I of the Act, to the extent provided therein, and must be authorized in advance by the Government (MELCCFP, 2022)."

Mining and ore processing activities are among the types of projects mentioned in Schedule 1, Part II of the EQA describing all projects subject to the EISA and review procedure.

The anticipated production and processing capacities for the Project are approximately 900 to 1000 tonnes/day. According to the following subsections, the Project will have to be submitted for the ESIA and review procedure:

- The construction of any other mine (other than uranium, rare earth or metals, graphite being classified as "other ore") whose maximum daily ore extraction capacity is equal to or greater than 500 metric tons (RREIARP Q-2, r23.1. Appendix 1, Part II, 22);
- The construction of an ore processing plant (other than uranium, rare earth or metals, graphite being classified as 'other ore'), where the processing capacity of the plant is 500 metric tonnes or more per day (RREIARP Q-2, r23.1. Appendix 1, Part II, 23).
- However, pits and quarries within the meaning of the Regulation respecting pits and quarries are excluded from the environmental impact assessment and review procedure (chapter Q-2, r. 7). This sub-article will apply to the extraction of dolomitic marble from the Montagne-aux-Bouleaux occurrence.

In order to complete the Québec ESIA process and to obtain a Certificate of Authorization (CA) issued by the Québec Government for the Project to proceed, Focus must have undertaken and/or complete the steps summarised below as stipulated in Articles 31.1 to 31.5 of the EQA and Sections III and IV of the RREIARP.

20.3.3 Project Notice and ESIA

- A Project Notice must be submitted to Ministère de l'Environnement et de la Lutte contre les changements climatiques de la Faune et des Parcs ("MELCCFP") by a proponent intending to undertake any project requiring an environmental impact assessment and review procedure. This notice contains general information about the project proponent and describes the general nature of the proposed project. Focus filed such project notice to initiate the ESIA process with the MELCCFP in March 2013.
- In April 2013, the Minister issued to Focus the Project Guidelines specifying the scope of the ESIA as recommended in Section 31.3 of the EQA. These Guidelines specified the nature, scope and extent of the ESIA statement that Focus must prepare, including the environmental baseline study.

- The ESIA statement must contain a description of the activities for the operation and maintenance of any proposed establishment, construction, work, installation or equipment including, if applicable, a description and an assessment of the anticipated impact of their operation, and the proposed restoration and post-closure management measures.
- An ESIA must also include a summary of the main measures that the project proponent intends to implement to minimize the impact of the project on the environment. Undertaken in 2012, the Project's ESIA study follows the recommendations presented in the Project Guidelines and is based on the design parameters of the 2014 feasibility study. Environmental baseline studies were initiated soon after the Project Guidelines were issued.
- The Project's ESIA study master document and series of appendices were submitted to the MELCCFP for review on December 1, 2014. This was followed by a first series of 179 questions issued to the Company on April 16, 2015, the answerers to which were submitted to the MELCCFP on November 30, 2016.
- A second series of questions were issued to Focus by the MELLCCFP on March 8, 2017. Focus is currently completing the answers and additional technical studies required by the MELCCFP in this regard, which trigged the FSU. The final document including the answers and work related to the second series of questions (2017) on the Project ESIA study is expected to be submitted to the MELCCFP in by year-end 2023.
- Once submitted, the final document will be reviewed by the MELCCFP and other departments including the Québec Department of Natural Resources and Forest (MRNF) who will provide comments on certain aspects of the Project.
- The MELCCFP will send the official notice of project admissibility once the ESIA study is considered completed. Only once such notice is received can the formal public information and hearing for the Lac Knife project be initiated.

20.3.4 PUBLIC INFORMATION

Once Focus has received the official notice confirming that the Minister considers the ESIA statement as admissible, Focus will have to hold on the date set by the Minister, a public information period as provided for in Section 31.3.5 of the EQA. The public information period lasts for 30 days.

According to Article 11 from the RREIARP, Focus will have to publish a notice announcing the 30-day information period in a daily or weekly newspaper circulated in the region where the Project is to be carried out. As soon as the notice is published, Focus must send a copy of the summary of the Project's ESIA statement to any local municipality and First Nation communities in the territory of which the Project will impact (Article 13, RREIARP). Any person, group or municipality may, during the public information period, apply to the Minister in writing for a public consultation or mediation on the Project, by informing the Minister of the reasons for the application and its interest in the environment affected by the Project (Article 14, RREIARP).

20.3.5 Mandates Entrusted to the Bureau d'Audiences Publiques sur l'Environnement (BAPE)

Within 10 days of the end of the public consultation period, the Minister will transmit to the BAPE, requests for public hearings, targeted consultations or mediations, except for those deemed frivolous under the third paragraph of Article 31.3.5 of the EQA. The function of the BAPE is to inquire into any question relating to the quality of the environment submitted by the Minister and then report the findings of its analysis thereof to the Minister.

The BAPE must, within 20 days of the end of the public information period, recommend to the Minister, in accordance with the fourth paragraph of Article 31.3.5 of the EQA, whether the Project should go for public hearing, targeted consultation or mediation. The BAPE must hold public hearings whenever required to do so by the Minister. The time periods allotted to the BAPE to carry out the mandates and to report back to the Minister are as follows:

- Four (4) months for a public hearing;
- Three (3) months for a targeted consultation;
- Two (2) months in the case of mediation.

At the end of the process, the BAPE should, within the time prescribed by government regulation, report its findings and analysis to the Minister. The Minister may, at any time, within the time and conditions fixed by the Minister, request that Focus provide further information, perform supplementary studies on any specific matters or undertake research or surveys he considers necessary to fully evaluate the impacts of the Project on the environment.

> "The Minister shall send his recommendation to the Government after analyzing the Project, at the end of the environmental assessment. The Government or any committee of ministers to which the Minister authorized by the Government to act in its stead belongs may issue an authorization (Authorization) for a project, with or without amendment and subject to the conditions, restrictions and prohibitions it determines, or it may refuse to issue an authorization. The Government or committee may also decide that the procedure shall continue despite an unfavourable recommendation from the Minister before the end of the procedure (EQA, Article 31.5; MELCCPF, 2022)".

20.3.6 Minister's Authorization and Certificates of Authorization

As of the date on which an ESIA statement is filed with the Minister under Section 31.3.2 of the EQA, the Minister must, within a period not exceeding 13 months, send to the Government for its decision, his or her recommendation regarding the Project. However, such time limit does not apply in the case of an ESIA for a project submitted to the Minister before March 23, 2018. Since the Project ESIA study was submitted in December 2014, this period will be extended to 15 months such as mentioned in the Q-2 EQA updated in 2018 (MDDELCC, 2018).

Several permits and other authorizations will be required following the issuance of the Authorization from the Québec Government for the Project. Among these are Certificates of Authorization (CA) under Section 22 of the EQA, which indicates that no one may, without first obtaining an authorization from the Minister, carry out a project involving activities such as:

- The construction and/or operation of an industrial establishment;
- Any withdrawal of water, including related work and works;
- The establishment, alteration or extension of any water management or treatment facility and the installation and operation of any other apparatus or equipment designed to treat water, in particular in order to prevent, abate or stop the release of contaminants into the environment or a sewer system;
- Any work, structures or other intervention carried out in wetlands and bodies of water;
- The management of hazardous materials;
- The installation and operation of an apparatus or equipment designed to prevent, abate or stop the release of contaminants into the atmosphere.

20.3.7 Directive 019

Directive 019 (MDDEP 2012) is the description of the protocol used by the MELCCFP to evaluate mining projects. It provides companies with the guidelines on what is required when applying for the CA or a Decree under the EQA needed to operate the mine and sets certain environmental guidelines during operations. Directive 019 is not a regulation but rather an informative document, specifying the expectations of the MELCCFP with regards to mining activities (Bussière, Demers, Charron and Bossé, 2017; NewFields, 2022). It includes the management of water, tailings and waste rock and the protection of surface and groundwater. It also provides tools to characterize mine wastes and criteria for water effluent (NewFields 2022).

20.3.8 Québec Mining Act (Chapter M13.1) Article 101, Article 234.4)

Besides the EQA, the Mining Act is a key component of project permitting as it provides a legal framework for developing, operating, and closing mines. The purpose of the Québec Mining Act (QMA) is to promote mineral prospecting, exploration and development in keeping with the principle of sustainable development, while ensuring that Québecers get a fair share of the wealth generated by mineral resources exploitation and taking into account other possible uses of the territory. A peculiarity of this Act is to ensure that non-renewable resources are used for the benefit of future generations. (QMA, Article 17).

20.3.9 Mining Lease

The current Lac Knife property consist of exploration licences, which by themselves does not include the right of extracting the resource, but only the exclusive right to acquire a mining lease over these resources. A mining lease is required to allow the construction of infrastructure related to a mining project including the tailings, waste, ore, and mining water storage areas. The Quebec Mining Act, Chapter M-13.1, covers different aspects of any mining activities. As per the Act:

> "No person may mine mineral substances, except surface mineral substances, unless he has previously obtained a mining lease from the Minister or a mining concession under any former Act relating to mines (QMA; Article 100)."
>
> "The Minister shall grant a lease in respect of all or part of a parcel of land that is subject to one or more claims if the claim holder establishes the existence of indicators of the presence of a workable deposit, meets the conditions and pays the annual rental prescribed by regulation (QMA; Article 101, paragraph 1)."
>
> "The lease cannot be granted before the rehabilitation and restoration plan is approved in accordance with this Act, and the authorization required under the Environment Quality Act (chapter Q-2) for mining operation work has been issued or amended (QMA; Article 101, paragraph 2)".

According to Article 101, paragraph 2 of the QMA, Focus must first obtain the approval of its rehabilitation and restoration plan for the Project before being granted a mining lease. Once this mining lease has been obtained, Focus will be able to initiate construction work at its Project.

20.3.10 Rehabilitation and Reclamation Plan

Every holder of mining rights who intends to engage in mining work must submit a rehabilitation and restoration plan prior to commencing work to get their project approved. The obligations indicated in such plan continue until the rehabilitation is completed or until a certificate of release is issued by the Minister under Article 232.10 of the QMA. Details concerning work to be undertaken during the rehabilitation and reclamation phase of the Project are presented in Section 20.6.3.

20.3.11 Monitoring Committee

According to Article 101.0.3. of the QMA, a monitoring committee must be established by Focus within 30 days after the mining lease being issued to Focus. This committee must be maintained until all the work outlined in the rehabilitation and restoration plan has been completed. The objective of this committee is to foster the involvement of the local community in the Project as a whole. The committee members are chosen in the manner determined by Focus who will also determine the number of representatives who are to sit on the committee. However, the committee must include at least one representative from the municipal sector, one representative from the economic sector, one member from the public and, if applicable, one representative from a Native community consulted by the Government with respect to the Project. A majority of the committee members must be independent from the lessee. All committee members must be from the region in which the mining lease is granted.

20.3.12 OTHER LAWS AND REGULATIONS

Other provincial laws and regulations pertain to the obligation of obtaining permits, licences or authorizations applicable to both the construction and operational phases of a mining project. The laws and regulations that could potentially apply to the Project include:

- Regulation regarding mineral substances other than petroleum, natural gas and brine (M 13.1 r.2);
- Regulation regarding Pits and Quarries (In EQA);
- Groundwater Catchment Regulation;
- Regulation regarding the quality of drinking water;
- Regulation regarding respecting wastewater disposal systems for isolated dwellings;
- Regulation regarding respecting the landfilling and incineration of residual materials;
- Sustainable Forest Development Act (Section 73, Article A-18-1);
- Sustainable Development Act;
- Act regarding lands in the Domain of State (“Crown lands”) under the MERN (Division II);
- Act regarding wetlands conservation and water environment (Section 23; 46.0.3, 46.0.5 and 46.0.6);
- Regulation regarding activities in wetlands, bodies of water and sensitive areas (Q-2, r. 0.1);
- Québec Dam (including the dam on the water treatment pond) Safety Act (October 2021);
- Québec Dam Safety Regulation (July 2021);
- Act regarding Endangered or Vulnerable Species;
- Regulation regarding endangered or vulnerable wildlife species and their habitats;
- Regulation regarding Wildlife Habitats;
- Act regarding the Conservation and Development of Wildlife (Section 128.7);
- Act on Explosives under the Sûreté du Québec (Sections 2, 3 and 11);
- Building Act regarding construction standards (Régie du Bâtiment du Québec, Section 35.2);
- Watercourses Act.

20.3.13 CANADIAN REGULATORY FRAMEWORK

The Canadian government has also adopted several environmental laws and regulations that may impact mining activities at the Project. An environmental impact assessment (EIA) process also exists under the Canadian Environmental Assessment Act (CEAA), 2012, SC 2012, c. 19. However, because of its technical and environmental specifications, the Project is not subjected to the federal EIA process.

Under the CEAA, only projects designated by the Regulations Designating Physical Activities are subjected to the environmental assessment procedure. Graphite mines are not considered as a physical activity under this Regulation. Therefore, the Project is not subjected to the federal EIA process. Focus received confirmation of this exclusion on June 12, 2015.

The Metal Mining Effluent Regulations (SOR/2002-222) does not apply to graphite mines. Consequently, Appendix 2 of the Regulations for disposal of mining waste in a fish habitat does not apply. Current mine and infrastructure planning made sure to avoid fish habitat.

A licence is required for the stocking and handling of explosives under the Explosives Act (EA).

Chemical and/or petroleum products required for the operation are such that an emergency response plan will be required prior to start up, according to the Canadian Environmental Protection Act.

Other federal laws and regulations pertain to the obligation of obtaining permits, licences or authorizations applicable to all phases of the Project. Laws and regulations that could potentially apply to the Project include:

- The Explosive Act (Section 7) regarding explosive storage;
- The Fisheries Act (Fisheries and Oceans Canada; Section 35);
- Canadian Environmental Protection Act (Emergency plan response);
- The Migratory Birds Regulations;
- The Species at Risk Act;

20.3.14 MUNICIPALITY (REGIONAL COUNTY MUNICIPALITY; MRC DE LA CANIAPISCAU)

The Project site is located within the Rivière Mouchalagane non-organized territory (*territoire non organisé*) of in the Caniapiscau Regional County Municipality (MRC). According to the MRC land use plan, no request for a change in zoning is required.

Several permits are required from municipalities such as construction permits for buildings and even the camp site. Authorizations are required for the water intake, such as process water at the beginning of the operation and for potable water and the camp, as well as for sceptic systems.

20.4 Environmental Baseline Studies

The following sections summarise the environmental setting of the Lac Knife Project.

20.4.1 GENERAL SETTING, CLIMATE AND METEOROLOGY

The Project is located in the Côte-Nord region of Québec, approximately 27 km south-southwest of the city of Fermont. The region is characterised by a topography dominated by low rounded hills with a discontinuous cover of glacial till. The valleys are mostly covered by bogs, wetlands with numerous lakes and small streams. They show the influence of glacial erosion and deposition processes and contain undifferentiated glacial till and fluvioglacial deposits of sand and gravel. An esker runs along the Pékans River which borders the Project to the west. The Project sits in the spruce-moss domain (MRNF, 2012).

20.4.2 Climate and Climate Changes

The Project area is affected by a sub-arctic continental climate, typical for latitudes between 51º and 58º North. It is characterised by long and cold winters and short and cool summers, with temperature below freezing from November to April. Based on the Fermont's meteorological station, monthly average temperatures range from -22.1°C to 13.5°C (MDDEP, 2012b). Temperatures below -50ºC are common in January and February. Such extreme weather conditions will have to be considered in infrastructure design as well as is worker safety plans. No permafrost is reported. The average precipitation is around 535 mm of rain and 290 cm of snow per year.

Climate changes in the area are forecasted to cause a rise of mean daily temperatures from -2.7ºC in 2010, to approximately -0.8ºC in 2040 (Ouranos, 2022). Although not sufficient to significantly change the bioclimatic zone, (the forecasted average temperature is similar to that of the town of Nemaska, in Eeyou Istchee James Bay Territory), a higher risk of forest fires and invasive species are to be expected.

The main anticipated impact is to the modification of precipitation, and hence the hydrology and flow of waterways. Based on data available from 1) L'Atlas hydroclimatique du Québec meridional (Direction de l'expertise hydrique, 2018) and 2) les projections climatiques pour la region de Caniapiscau (Ouranos 2015), a portrait was drawn of the hydroclimatic and climatic trends for the 2030, 2050 and 2080 horizons, and the climatic trends for the 2050 and 2080 horizons for the Lac Knife area. These horizons encompass the expected mine-life (27 years) of the Project.

Hydroclimatic data is available for a section of the Pékans River near the study area. The primary watershed for this section is the Moisie River watershed that includes the Lac Knife and the Pékans River sub-watersheds. The hydroclimatic trends are presented according to an optimistic scenario in which greenhouse gas emissions stabilize by the end of the century, and a more pessimistic scenario corresponding to sustained growth in emissions until the end of the century.

For the Project area, average annual temperatures are expected to rise to 6.1°C by 2080 (pessimistic scenario). Already, in the short term (2040 to 2071), the temperature is expected to increase from 2.3°C to 3.3°C. In general, the trends for precipitation are increasing throughout the year. This increase is much smaller in summer than in autumn, spring and especially in winter.

The solid precipitation in autumn and spring, in the form of snow, will decrease and be replaced by rain. In addition, more frequent periods of heavy rainfall are expected. The sharp increase in rain should be monitored closely, especially in spring and autumn, in order to anticipate high water levels and the possibility of flooding. The small increase in precipitation in summer, combined with a rise in temperatures, will lead to more drought events, which are likely to increase the risk of forest fires. Increases in precipitation will have to be factored in the design of key project infrastructure such as FTSF and the water management system.

In the medium and long terms, spring floods are expected to be more important due to increasing volumes of snow melt. This trend is projected to continue until 2080 and is accentuated in the pessimistic scenario. The summer and fall floods will be more intense and the summer low runoff flow will be more severe. Winter runoff flows will most likely increase. The more sustained flows in winter are due to an increase in precipitation, and the number of freeze / thaw events will result in less and less winter low runoff periods. The impact of climate change on the global water cycle in the section of the Pékans River that was studied, and in the boreal forest in general, will result in greater hydraulicity in winter and spring. Analysis of hydroclimatic trends near the Project area shows that extreme events will become more frequent and occur earlier in the spring.

20.4.3 Physical Environment

20.4.3.1 Air Quality

The Project area, being relatively remote from any human or industrial activity, currently benefits from clean air. Local air quality will potentially be affected by contaminants and dust during mine construction and operation. Atmospheric emissions from exhaust of back-up diesel generators, visiting vehicles, and heavy equipment used by contractors will be the main sources of airborne contaminants, but are expected to be subsequently mitigated by the replacement of the fleet with electrical vehicles and clean electricity source.

Dust is then expected to be the main cause of atmospheric pollution. Dust will be generated from a multitude of sources, some of which is difficult to mitigate, such as vegetation clearing and overburden stripping; erosion during the construction or upgrading of the new Project access road and of the existing network of roads within the perimeter of the Project; the building of site infrastructure; vehicle traffic on gravel roads; blasting, extracting, loading and unloading of ore and waste rock; and ore crushing and processing. Wind erosion of tailings and waste rock facilities, and overburden stockpiles will also disperse dust into the atmosphere. Sulphur dioxide emission from sulphide oxidation could be another potential source of atmospheric pollution, which would be mitigated along with acid mine drainage in the FTSF.

An air quality modelling and dust management plan for the Project is underway by Wood Environment & Infrastructure Solutions (Wood) and is expected to be completed in mid 2023 since Wood requires information on the infrastructure design from the FSU to feed the air quality model, to assess atmospheric dispersion along with the Project’s effects on air quality and dust levels. This modelling will provide an update to the previous Air Quality Impact Study for dust/particulates (PM

2.5, PM10, TPM), metals, nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), hydrogen sulphide (H_2S) prepared by Golder & Assoc. (Golder, 2015).

Modelling will also include fugitive dust emissions along the Project's access gravel roads. Traffic of approximately 4,000 semi-trailers trucks per year both ways, or 16 vehicles per workday, is expected along this road mainly due to haulage of dolomitic marble from the Montagne aux-Bouleaux quarry and shipping of the finished graphite concentrate. Preparation of a dust management plan is underway, including wind erosion and blasting emission estimates.

Results from the atmospheric dispersion modeling must comply with the requirements of the MELCCFP which are presented in the Guide d'instructions: Préparation et realisation d'une modélisation de la dispersion des émissions atmosphériques – Projets miniers (MELCC, 2017). Emissions will have to meet the Clean Air Regulation requirement that establish, notably, the emission standards and monitoring measures to prevent, eliminate, or reduce the emission contaminants into the atmosphere.

Results from the 2023 air quality modelling will also provide answers to certain questions asked by the MELCCFP in 2017 (Series II MELCCFP questions) concerning the ESIA Study for the Project (Golder, 2014).

20.4.3.2 Soil Characterization

The main objective of soil characterization studies is to determine the baseline conditions of the soils in areas potentially impacted by the Project, including the future pit site, mining infrastructure and tailings and waste rock facilities.

An environmental soil sampling program was initially carried out in the fall of 2012 by Terrapex on the entire Lac Knife 2012 exploration grid. Samples were collected from 62 different sites in topsoil (humus) and B horizons and analyzed to determine background metals and physico-chemical parameters. More than sixty percent (60%) of humus samples contained potentially leachable barium (Ba), cadmium (Cd) and sulphur (S) exceeding the A criteria from the Guide d'Intervention pour la Protection des sols et réhabilitation des terrains contaminés (PSRTC) du Québec (Beaulieu, 2021) for the Grenville geological Province. Similarly, fifty percent (50%) of B horizon samples exceeded the A criteria for chromium. Since the elements surpassing MELCCFP thresholds are from soil that has not been perturbed by anthropic activity, exceeding the criteria is not considered an issue. The tolerated threshold for these elements must be raised accordingly.

Acidity measurements on saturated paste (paste pH tests) were carried out in the fall of 2013 encompassing the future mine site, waste disposal facility and building sites (Bernier, 2014). Acidity ranged between a pH of 2.78 and 5.72, resulting in acidic soil, with most samples recording a pH in excess of 4.2.

Leaching tests TCLP, SPLP and CTEU-9 were also conducted to evaluate leachable metals abundances in material to be stripped from the pit site and stored in overburden piles. These tests indicated that iron (Fe), zinc (Zn), nickel (Ni), copper (Cu) and soluble sulphate (SO4) are the most leachable metals to be anticipated, originating from the oxidation of sulphides (Germain and Bernier, 2013).

Due to a change in regulation, the MELCCFP requested that Focus undertake a second, more elaborate soil characterization. The survey was carried out during the summer of 2018 by IOS Services Géoscientifiques Inc. (IOS) over an area of 19.6 km2 centred on the Lac Knife deposit. Sampling site location and spacing (150 to 500 metres) were planned according to recommendations published in the *Guide de caractérisation physicochimique de l'état initial des sols avant l'implantation d'un projet industriel* (MDDELCC, 2015).

Eleven (11) overburden drill holes, thirty-eight (38) trenches and one hundred and forty-one (141) manual test holes were sampled for each of the distinctive horizon across the soil profile. For each site, soil horizons were physically characterised and sampled such as recommended by the MELCCFP's guide (*Guide d'échantillonnage à des fins d'analyses environnementales – Cahier 5 Échantillonnage des sols* from CEAEQ, 2010). These samples were collected to complete the soil characterization that began in 2014 as requested by the MELCCFP (2015). The results made it possible to assess the impact on the quality of groundwater and surface water of the presence of certain metals in anomalous concentrations in the soil.

A total of seven hundred and fifteen (715) soil samples were collected in 2018 and then assayed for a wide array of metals and chemical components. Reference materials, blanks and duplicates samples were inserted for Quality Assurance and Quality Control (QA/QC) analysis. Samples were analyzed for extractable metals (Al, Ag, As, Ba, Be, B, Cd, Ca, Co, Cr (total), Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, U, V and Zn) using aqua-forte digestion and QQQ-ICP-MS measurements.

Other chemical components and parameters such as total sulphur (Stot), total and organic carbon (Ctot, Corg), nitrate and nitrite compounds (NO_2, NO_3), loss on ignition (LOI), pH, Eh and moisture, were measured using a variety of methods. Organic compounds such as petroleum hydrocarbons compounds (C10C50), polycyclic aromatic hydrocarbons (PAH) and volatile organic compounds (VOC) including BTEX were also analyzed. Results will be used to evaluate the possible occurrence of anthropic contamination particularly associated to drilling or recreative activities. Some physical and physico-chemical parameters such as grain size, pH, porosity, and moisture were analyzed in situ.

Soils in the area are dominantly podzols and locally gleysols and are subdivided into four (4) horizons named Ah, Ae, B. and C. The Ah and Ae horizons correspond to the organic topsoil which are less than one (1) meter thick and mainly composed of organic matter (Ah) or lixiviated mineral soils (Ae). Thicknesses for B and C mineral horizons ranges from metres to tens of metres. These horizons are characterised by sand (30 to 90%) and silt (5 to 70%) with some quantities of gravel, cobble, and boulders. Soils from the pit area, tailing facilities and other infrastructure will have to be excavated and piled in an overburden storage before use for progressive rehabilitation of the tailings and mine waste rocks.

Up to one hundred and six (106) samples were collected from soil horizons overlying the orebody. The pH values for Ah and Ae horizons are acidic (from 3.45 to 4.85) while those for horizons B and C range from slightly acidic to near alkaline (from 4.6 to 7.9). Contents in total sulphide (Stot) are generally low (< 0.09 %), but some samples from B and C horizons returned between 0.1 % and 0.5 % Stot, likely as gypsum and other secondary sulphate. It is uncertain if sulphide minerals are preserved in soils in which case they are expected to oxidize and potentially generated acid in the overburden pile. Total carbon concentrations in the B and C horizons are generally higher than organic carbon suggesting potential carbonate minerals with the capacity to neutralize acid generated by the sulphide oxidation.

Geochemical analysis for extractable metals indicated that B and C soil horizons overlying the orebody returned nickel (Ni), chromium (Cr), molybdenum (Mo), zinc (Zn) with more or less silver (Ag), barium (Ba), copper (Cu), selenium (Se), arsenic (As), and lead (Pb) contents that slightly exceed the soil quality criterion A for the Grenville geological Province from the PSRTC (Beaulieu, 2021). Moreover, these soils horizons are also enriched in iron (Fe) and manganese (Mn). Some samples from horizons Ah and Ae (topsoil) returned contents in molybdenum (Mo) and silver (Ag) higher than the soil quality criterion A.

20.4.3.3 Lake Sediments Characterization

The Project is located in hilly terrain and is hence surrounded by numerous lakes. Lac Knife, about 3.6 kilometers in length and up to 450 m wide, is the main water body of the Project. It flows into Lac Rainy which is approximately the same size as Lac Knife. Aside from these two lakes, the Project is peppered by numerous small lakes and ponds, that either flow into Lac Knife or directly into the Pékans River. Aside from a few cabins on Lac Knife and some fishing activities, no anthropic impact is directly visible on Lac Knife nor on the Pékans River.

However, despite being pristine, lake bottom sediments can be naturally contaminated by metals released from the oxidation of iron sulphide minerals associated with graphite in the Lac Knife deposit or found as same as in basement rocks and in the overburden cover. To assess the geochemical background of lake sediments surrounding the Lac Knife deposit, a lake bottom sediment survey was carried out by IOS on the Lac Knife property during the summer of 2020. This survey was carried out to determine the initial baseline metal contents of fourteen (14) lakes and ponds likely to receive the runoff water from the mine site or water from the final effluent.

A total of one hundred and forty (140) samples were collected from twenty-eight (28) sites, including systematic duplicates samples, over an area covering 18 km2. Samples were collected according to recommendations mentioned in the Guide de caractérisation physicochimique de l'état initial du milieu aquatique avant l'implantation d'un projet industriel, Québec (MDDELCC, 2017). Physico-chemical parameters such as pH, redox potential (Eh), conductivity, resistivity, dissolved oxygen (DO), salinity, pressure, and physical characteristics such as total dissolved solids (TDS), turbidity, texture, grain size, colour, and odour (ex. sulphur, hydrocarbons) were measured or noted in situ.

Sediment samples for reference materials, blank and duplicates samples (QA/QC process) were all analyzed for their extractable metal (Al, Ag, As, Ba, Be, B, Cd, Ca, Co, Cr (total), Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Sn, Th, U, V and Zn) by aqua-forte digestion and QQQ-ICP-MS dosing, total sulphur (Stot), graphitic, organic and total carbon (Cg, Corg, Ctot) made by Bureau Véritas laboratories located in Québec City and Montréal. These laboratories are accredited by the MELCCFP to perform environmental analyses. Loss on Ignition and water content were analyzed at IOS laboratory facilities located in Saguenay, Québec.

Analytical results from the lake bottom sediment survey were compared to two (2) quality criteria, the rare effect concentration (REC) and the threshold effect level (TEL) criteria for freshwater sediments provided in the document entitled "Criteria for the Assessment of Sediment Quality in Québec and Application Frameworks: Prevention, Dredging and Remediation" (Environment Canada and Ministère du Développement durable, de l'Environnement et des Parcs du Québec, 2007). The REC criteria correspond to the metal content below which no effect is apprehended on aquatic organisms, while the TEL criteria correspond to the lowest metal content at which a toxic response has started to be observed in benthic organisms. The results will assess, if any, the current level of sediment contamination prior to the construction phase of the Project.

Results from the 2020 survey show that most of the sediment samples collected in lakes and ponds are characterised by metal contents higher than the REC and TEL criteria for chromium (Cr), nickel (Ni), copper (Cu), zinc (Zn), cadmium (Cd), lead (Pb) and mercury (Hg). As there is no industrial activity in the Lac Knife area, the sources of these metals are interpreted to be natural (or geological).

Mining activity is expected to cause lake contamination either through water effluents or dispersion of dusts in the air. Mining operations such as blasting and trucking as well as wind erosion from some facilities will generate dust. Infrastructure including tailings, waste rock and overburden facilities must be adapted to prevent such dusting and windborne dispersion. The water treatment plant should also be adapted to eliminate any metals from mine waters before they are discharged into the final effluent, in order not to worsen natural contamination.

20.4.3.4 *Hydrology, Lake and River Water Quality*

Various infrastructure of the Project such as the pit and the TSF, will change the local hydrography. Some small water courses will have to be diverted. Open pit mining activities will require diverting surface runoff, dewatering of the pit as well as a lowering of the groundwater table near the open pit area. It is anticipated that the amount of groundwater to be pumped to dewater the pit will be minor compared to surface water influx from rain and surface drainage. Any water that would be pumped is to be considered as an effluent which will have to meet the provincial requirements (Effluent discharge objectives and Directive 019). The tailings and waste rock management facilities should be designed such as to avoid seepage to surface water and infiltration to groundwater.

The Project is included in the Moisie River watershed which covers an area of 19,197 km^2. Nine tributary streams, draining areas of more than 300 km^2, discharge their waters into the Moisie River including the Pékans River, the largest tributary of the Moisie River. The Project extends over a line of successive crests oriented north to south and located between 500 and 1,000 metres west of Lac Knife. This line of crests represents the watershed divide separating the Lac Knife sub-watershed to the east from the Pékans River sub-watershed (3,350 km^2) to the west. Thus, part of the surface water and groundwater draining the Project flows toward Lac Knife (Lac Knife sub-watershed), while the other part flows toward the Pékans River (Pékans River sub-watershed).

Water from most lakes located in the Moisie River watershed are characterised by significant contents in iron (Fe), aluminum (Al) and phosphorus (P), very low hardness and acidic conditions related which could be associated to soil and bedrock geochemical compositions and occurrence of organic matter (MELCCFP, 2022a).

Several lakes, ponds and streams are present within the Project limits and the hydrographic network is well developed. Lac Knife is located 600 m east of the Lac Knife deposit while Lac Rainy is located 3.5 km downstream from Lac Knife’s northern shore, outside the Project limits. Waters from the Lac Knife flow north into the Rainy Lake and then northwest into the Pékans River. The Pékans River is located 1.5 km southwest and downstream of the sites proposed for mine tailings and waste rock facilities. Except for Lac Knife (25.9 m) and Lac L09 (10.6 m), most lakes and ponds within the perimeter of the Project are less than ten (10) m deep. The local drainage network on the Project consists of six (6) streams, three of which flow towards Lac Knife taking their sources near the mine site. Another stream (R09), located 150 metres north of the tailings and waste rock facilities, flows west over a distance of 3 km and into Lac L09 and then into the Pékans River.

Six (6) sampling runs for surface water were conducted between July 2020 and August 2021 on the Project by IOS in order to record seasonal fluctuations in water quality. The objective of these surveys was to determine the natural metal concentrations, including certain chemical compounds, in several watercourses and waterbodies. A total of one hundred and sixty-two (162) water samples were collected in fourteen (14) lakes, ponds, and in the Pékans River. All samples were collected according to the recommendations provided in the Guide de caractérisation physicochimique de l'état initial du milieu aquatique avant l'implantation d'un projet industriel, Québec (MDDELCC, 2017).

In-situ measurements included several physico-chemical parameters such as pH, redox potential (Eh), conductivity, resistivity, dissolved oxygen (DO), salinity, pressure, and some physical characteristics such as total dissolved solids (TDS), turbidity and suspended matters. Surface water samples plus ten (10) blank and sixteen (16) duplicates samples for QA/QC purposes were analyzed for extractable metal by QQQ-ICP-MS (Al, Ag, As, Ba, Be, B, Cd, Ca, Co, Cr (total), Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, U, V and Zn) plus chloride, sulphate, carbonates, dissolved organic carbon, total and ammoniacal nitrogen, NO_2 and NO_3 total phosphorus, faecal coliforms, hardness, acidity and alkalinity. Analyses were performed by Bureau Véritas laboratories based in Québec City and Montréal. These laboratories are accredited by the Québec MELCCFP to carry out environmental analysis.

The results have been compared to the criterion for the protection of aquatic life – chronic effects (PALCE) as well as the criterion for preventing contamination of aquatic organisms (PCAO) from MELCCFP, 2021. Results from the six (6) surveys indicate that no significant metal concentrations were detected, all being metal contents falling below the thresholds for PALCE and PCAO criteria in the water bodies located within the Project limits including near the Lac Knife deposit.

20.4.3.5 Hydrogeology and Groundwater Quality

A network of 30 monitoring piezometers was set up around the Lac Knife deposit, between 2012 and 2021, for hydraulic conductivity borehole tests and geochemical characterizations of groundwater (Bernier and Germain, 2012; Germain and Bernier 2013; Golder & Assoc., 2014; Leblanc, 2016, 2021; and Vermette and Aubin, 2022a). These surveys were designed: 1) to determine the directions and rates of groundwater flow into Lac Knife and into the Pékans River sub-watersheds, 2), to model changes in the groundwater flow affected by the Lac Knife mining operations and evaluate the impact of groundwater pumping on the water table and the possible extent of groundwater drawdown following the excavation of the mine open pit and 3) to characterize groundwater chemical background compositions of groundwater prior to mining operations.

20.4.3.6 Hydrogeology

A hydrogeological study was undertaken in 2016 in the vicinity of the future open pit and on the western side of the Lac Knife deposit (Leblanc, 2016). The objective of the study was to simulate and model the groundwater flow over a period of 25 years corresponding to the expected life of mining operations. This study was also conducted to assess the impact of groundwater pumping on the water table and the possible extent of groundwater drawdown following the pit excavation.

Two hydrostratigraphic units were identified and constitute the main groundwater reservoirs (aquifers) recognized in the mine site area. These units correspond to (1) an unconfined fractured bedrock aquifer composed of paragneiss and locally up to 60% graphite and 20% sulphides mainly associated to the deposit and (2) an unconfined granular aquifer composed of till, a mixture of sand and gravel and corresponding to the overburden covering the bedrock (Leblanc, 2016, 2021). The Precambrian bedrock in the Project area is characterised by hydraulic conductivities ranging from 4.4 × 10-6 to 1.5 × 10-3 cm/s and which tends to become almost impermeable beyond a depth of 300 metres.

The groundwater flows from the highest elevation point which is the crest between Pékans River and Lac Knife sub-watersheds, toward the lowest elevation points corresponding to Lac Knife on the eastern side, and Pékans River on the western side of the mine site. Groundwater flows faster in the overburden where the hydraulic conductivities range from 3.8×10^{-4} to 3.7×10^{-3} cm/s. During the mine operations, the groundwater infiltration rates in the pit are estimated to vary from 120 to 240 m^3 per day. The extraction of ore will have to lower the water table over an area of ninety-one (91) hectares or 0.91 km^2 to maintain the open pit dry at 100 metres depth (Leblanc, 2016).

20.4.3.7 *Groundwater Geochemical Characterisation*

Groundwater geochemical sampling programs were carried out between 2012 and 2021 by IOS on an area covering 5.25 km^2 which straddles the watershed line delimiting the Pékans River and Lac Knife sub-watersheds. This area includes: 1) the future open pit mine (Lac Knife sub-watershed) and 2) the tailings and waste rock facilities as well as the collector basin and the overburden stockpile located in the Pékans River sub-watershed. These surveys are part of a monitoring program whose purpose is to characterize the groundwater geochemical compositions before the commencement of mining operations. Permeability, pumping and hydraulic tests were also conducted in several boreholes.

Between 2012 and 2014, a total of twenty-eight (28) groundwater samples were respectively collected in two separate aquifers corresponding to bedrock and the overburden to characterize the quality of groundwater surrounding the lac Knife deposit. All samples were analyzed to determine the concentrations in metals (Al, Sb, Ag, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Se, Sr, Ti, V, Zn), some chemical compounds such as nitrate-nitrite (NO_2-NO_3) and sulphate (SO4). Physico-chemical parameters such as acidity was determined at the laboratory while other parameters such as temperature, pH, redox potential (Eh), conductivity, alkalinity and dissolved oxygen were measured in situ.

An exhaustive groundwater sampling program was also carried out between October 2018 and October 2020 by IOS in an area (5.25 km^2) that straddles the watershed line delimiting the Pékans River and the Lac Knife sub-watersheds. Nineteen (19) wells were drilled in 2018 to install six (6) piezometers in the overburden and thirteen (13) in the bedrock aquifers. A total of thirty-two (32) groundwater samples were collected from these wells. Additionally, thirteen (13) wells installed in 2012 and in 2014 in the overburden and bedrock aquifers were re-sampled and analyzed for groundwater geochemical characterization. In July 2020, forty-four (44) wells were sampled in overburden and bedrock aquifers while groundwater samples were collected in forty-six (46) wells in September 2020.

Groundwater samples collected in 2018 and 2020 were analyzed to determine their metals (Al, Ag, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Mg, Mn, Hg, Mo, Ni, Pb, K, Na, Sr, V, Zn), metalloids (As, B, Sb) and non-metals (Se, Ptotal) contents as same as theirs concentrations in nitrogen (N), chloride (Cl), fluoride (F), bicarbonate (HCO_3), ammonia ($N\text{-}NH_3$), nitrate-nitrite ($NO_2\text{-}NO_3$), dissolved sulfur S_2-, sulphate (SO_4), silica (S_iO_2), dissolved organic carbon, cyanides, thiocyanates and thiosulphate. Physico-chemical parameters such as acidity, alkalinity and total dissolved solids (TDS) were measured in a laboratory while other parameters such as temperature, pH, Eh, conductivity, resistivity, salinity and dissolved oxygen were measured in situ.

Sampling procedures followed the recommendations provided in the *Guide d'échantillonnage à des fins d'analyses environnementales: Cahier 3 – Échantillonnage des eaux souterraines* (MDDEP, 2011) and *Mode de conservation pour l'échantillonnage des eaux souterraines* (CEAEQ, 2017). Analytical results from the groundwater geochemistry survey were compared to *Critères de qualité des eaux souterraines de résurgences dans les eaux de surface* (resurgence in surface water and infiltration into sewers; RSWIS) *de la Politique de Protection des sols et réhabilitation des terrains contaminés* (Beaulieu, 2021). Criteria for RSWIS are used to assess the state of groundwater contamination by metals and several chemical compounds.

Results from the 2018-2020 geochemical surveys show that groundwater compositions from samples collected in the overburden and bedrock aquifers can be spatially subdivided into three distinct hydrogeochemical zones based on some metals (Cu, Zn, Ba), P_{total}, dissolved sulphurs (S^{2-}) and sulphates $(SO_4)^{2-}$ concentrations. Groundwater from Zone #1 flows toward Lac Knife and are part of the Lac Knife sub-watershed. They are near-neutral to neutral with pH ranging from 5.8 to 9.5 (median 7.0), $Ca\text{-}SO_4$ type with SO_4^{2-} concentrations ranging from 5 to 50 mg/L (median 15 mg/L). Groundwater from Zone #1 are characterised by S^{2-}, Hg and Mn contents higher than their respective criteria for RSWIS from the MELCCFP (2022).

Groundwater, flowing in overburden and bedrock southwest of the pit, are part of the Pékans River sub-watershed. These waters are slightly alkaline (median pH of 7.9) and $Ca\text{-}HCO_3 \pm Na\text{-}HCO_3$ types with low sulfates (5 mg/L) content. They are characterised by S^{2-} and Hg concentrations higher than their respective RSWIS criteria. Groundwater, associated to the hydrogeochemical Zone #3, is located to west and north-west of the pit and flow into Pékans River sub-watershed and toward the Pékans River. These waters are slightly acidic (median pH 6.3) and $Ca\text{-}HCO_3$ type with low sulfates (2 mg/L) content. They are also characterised by S_2- and Hg concentrations higher than their respective RSWIS criteria.

20.4.3.8 *Noise Environment*

A noise characterisation study was carried out by Soft dB (2014) to determine the local ambient noise background. Two measurement stations were operated, one near the mining site and the second near a cottage 2 km north of the mining site on the Lac Knife western shore. Among the sensitive receptors identified are two cottages located at more than 1 km from the open pit. The provincial Highway 389 is located at 16 km (west) while the city of Fermont is located at 27 km north of the site. This indicates that noise annoyance from operation is not to be expected by residents, although it may impact sensitive wildlife such as woodland caribou.

Local noise in the study area is mainly dominated by natural and wildlife noises (wind, birds, waves on the lake, creak of trees). The current level of noise ranging from 33.7 dBa (night) to 39.1 dBA (day) was well below the regulated levels ranging from 40 dBa (night) and 45 dBa (day) according to note 98-01 from the MELCCFP (2022b). This suggests that the Project is located in a natural and isolated environment (Soft dB, 2014). The authors of this section of the FSU consider that the current local noise level has remained the same since no major industrial development has taken place in the area since the 2013 survey.

20.4.4 Biological Environment

20.4.4.1 *Vegetation And Wetlands*

The Project is located within the Spruce Moss – East domain of the Continuous Boreal Forest sub-zone, a first order division of the Boreal bioclimatic zone in Québec (Québec MFFP, 2021). In the Fermont area, the Spruce Moss – East domain extends to around Latitude 53° north. Black spruce (*Picea mariana*) and balsam fir (*Abies balsamea*) are the dominant tree species, whereas the tamarack (*Larix laricina*) is commonly associated with black spruce in bogs and fens (MFFP, 2012). Strands of quaking aspens (*Populus tremuloides*) and white birch (*Beluta papyrifera*) are occasional on hill tops,although rare near the deposit. Wetland inventories carried out by Groupe Hémisphères in 2018 and 2020, revealed the presence of 91.17 ha of different types of wetlands within the Project perimeter. In the area close to the Lac Knife deposit, the topography consists of alternating small hills and depressions, potentially DeGeers moraines, which depressions are categorized as wetlands.

Six (6) species of plants, Rosy pussytoes (*Antennaria rosea subsp. Confinis*), Pulvinate pussytoes (*Antennaria rosea subsp. pulvinata*), Glacial Sedge (*Carex glacialis*), Large leaf avens (*Geum macrophyllum var. perincisum*), Beach heat (*Hudsonia tomentosa*) and Elegant Grounsel (*Packera indecora*), with special status were identified as having the potential to be present at the Project site. Inventories to locate these species as well as possible exotic invasive species were carried out in 2018 and 2020 by Groupe Hémisphères. None of the targeted species were observed during these field surveys. Moreover, in a recent communication from the *Centre de Données sur le*

Patrimoine naturel du Québec (CDPNQ, 2021), the CDPNQ acknowledged the absence of any threatened, vulnerable or special status species in the Project area.

Figure 20.1 denotes a satellite image of the deposit area in 2021, during the drilling program. The drill rig and various vehicles are discernible as red objects. The stripped area with brownish soil is the site of former bulk sample that has been rehabilitated, but not reforested. The topography is characterised by a succession of small hills with spruce and cladonia moss (grey), separated by narrow depression of denser spruce and heathers (green) punctuated with small wetlands (black) The area approximately represents the site of the pit, with infrastructure to the northwest and the TSF to the extreme west of the image.

Figure 20.1 – Satellite Image of the Deposit Area (2021)

Source: WWW.Satellites.pro

20.4.4.2 Mammals

Four (4) species of large mammals, fifteen (15) species of small mammals, twelve (12) species of micromammals and one bat species could potentially inhabit the Project site based on their migration ranges. Of these thirty-two (32) species, four (4) have a “special status” designation but only two (2) of these, the woodland caribou (*Rangifer tarandus*) (forest-dwelling ecotype) and the little brown bat (*Myotis lucifugus*), were confirmed to inhabit the Project area (Groupe DDM, 2014).

Woodland caribou comprise three (3) distinct ecotypes: the tundra ecotype (also called “migratory caribou”), the woodland ecotype (also called “sedentary caribou”) and the mountain ecotype. Only the tundra ecotype and the woodland ecotype could potentially inhabit the Project site. The tundra ecotype has no legal status, but the woodland ecotype is designated as "vulnerable wildlife species" under Article 2(5)(a) of the Québec Regulation respecting threatened or vulnerable wildlife species and their habitats (chapter E-12.01, r. 2) while its boreal population is designated under the Species at Risk Act (Canada) as threatened.

Field inventories targeting woodland caribou were performed in 2014. A more extensive evaluation of the caribou population, its habitat use and disturbance in the area was performed in 2020 to respond to questions from the Québec MELCCFP. GPS data of collared caribou were made available to Focus by the MELCCFP for the purpose of the 2020 investigation. Based on data published by the MELCCFP[8], the tundra caribou seems to have ceased to frequent forest stands of the Fermont area during winter. The tundra caribou was last observed near the site by land users over 15 years ago (Groupe DDM, 2014). This ecotype has moved further north to the Caniapiscau and Smallwood reservoirs areas.

No woodland caribou were inventoried during the environmental field surveys studies. Land users and cabin owners near the Project confirmed that no caribou have been seen during the winter for several years. GPS data show that the Project is located within the woodland caribou's distribution range and land users have reported at least five incidences of caribou between 2011 and 2013 in or close to the Project site (Groupe DDM, 2014). A network of caribou trails near the Project site was observed during an aerial survey in 1988 (Gingras et al., 1989), but there is no evidence these trails are still actively used. Field observations suggest that individual or small isolated groups of the woodland caribou ecotype may be occasionally present the in the Project area. Woodland caribou primarily inhabit mature black spruce forests feeding on cladonia moss and, to a lesser extent, balsam fir, but avoid disturbed habitats such as logging and recent burns.

Only two bat species are likely to be present in the Project area: the northern long-eared bat (*Myotis septentrionalis*) and the little brown bat (*Myotis lucifugus*). Based on interviews with local land users, a little brown bat was reportedly observed in the Project area. This species was found to spend the summer in the old exploration camp at the south end of Lac Knife (Groupe DDM, 2014).

A field inventory of bats (*chiropterans*) using squeak recorders was conducted in 2018 and confirmed the presence of the northern long-eared bat. Bat activity is mainly concentrated on the shores of Lac Knife near the old exploration camp, which represents a favourable habitat for bats. To date, no site has been found in the Project area where bats can hibernate. According to the Committee on the Status of Endangered Wildlife in Canada and the Species at Risk Act, both the northern long-eared bat and the little brown bat are considered "endangered species" (Côté and La Haye, 2018).

[8] Available at: http://www.mddelcc.gouv.qc.ca/faune/cartes-caribou/cartes.htm

From the fifteen (15) species of small mammals potentially inhabiting the site, eleven (11) are considered furry animals under Schedule 0.1 of the Québec Regulation Respecting Trapping and the Fur Trade (C-61.1, r. 21). The most commonly trapped mammal species within the current fur-bearing animal management unit are the American marten (*Martes americana*), weasels and ermines (*Mustela sp*.), red fox (*Vulpes vulpes*), beaver (*Castor canadensis*) and mink (*Martes americana*). Three (3) beaver huts were reported in the southern part of the Project. However, no signs of trapping activity have been recorded within the Project perimeter.

20.4.4.3 Aves (Birds)

Seven (7) bird species having special status designations could potentially inhabit the Project area based on species migration ranges. Preferred habitats for these species are limited within the Project site which reduces the probability of the presence of the four bird species. Field inventories were carried out in 2012 at the Project site and in 2013 along the access road (Mathieu, 2013, 2014). A total of thirty-two (32) species of forest birds were observed, including 31 species considered possible, probable, or confirmed breeding birds; six (6) species of aquatic birds, five (5) of which are considered breeding birds; and three (3) species of birds of prey. Observed birds of prey include osprey (*Pandion haliaetus*), the great horned owl (*Bubo virginianus*) and bald eagle (*Haliaeetus leucocephalus*).

Three (3) special status bird species were observed: the olive-sided flycatcher (*Contopus cooperi*), the rusty blackbird (*Euphaguscarolinus*) and the bald eagle (*Haliaeetus leucocephalus*). These species are classified as likely to be designated as “threatened” or “vulnerable” species under the Québec Regulation respecting threatened or vulnerable wildlife species and their habitats (chapter E-12.01, r. 2) The olive-side flycatcher is classified as “threatened” while the rusty blackbird is classified as a “vulnerable species with special concern”. Bald eagle adults and juveniles, and bald eagles nests were reported by Centre de données sur le patrimoine naturel du Québec (CDPNQ, 2021), a bird species designated as “vulnerable” under Article 2(g) of the Regulation

20.4.4.4 Amphibians and Reptiles

According to the amphibian and reptile habitat ranges in Québec, six (6) species of amphibians and one (1) reptile potentially inhabit the Project site. These species include the blue spotted salamander (*Ambystoma laterale*), the northern two-lined salamander (*Eurycea bislineata*), the common garter snake (*Thamnophis sirtalis*), the American toad (*Anaxyrus americanus americanus*), the wood frog (*Lithobates sylvaticus*) and the mink frog (*Lithobates septentrionalis*) (Levasseur, 2014). None of these species benefits a particular status under provincial or federal jurisdictions, all of them being widespread and common in Québec. According to the CDPNQ, there is no mention of threatened, vulnerable, or likely to be so designated amphibian or reptile species at the study site.

Field inventories were performed in 2012 and 2013 at the Project site and the Cumstock and Mazarin access road. Three (3) amphibian species were observed during fieldwork, being the American toad , the wood frog and the mink frog. No salamanders and no reptiles were observed.

20.4.4.5 Aquatic Environment

Several waterbodies are present within and near the Project. Rainy Lake is located just north of the Project site and along with Lac Knife, are the two largest lakes in the area. The main watercourse is the Pékans River, adjacent to the Project site, which flows into the Moisie River, 34 km downstream from the Project. The aquatic environment has been studied beyond the boundaries of the Project since its quality may depend on upstream activities, and local activities may affect downstream water quality.

A total of twenty (20) streams and seventeen (17) lakes or ponds in the vicinity of the Project, as well as forty-nine (49) streams crossing the Cumstock and Mazarin access roads were characterised in 2012 and 2013 (Côté et Guillemette, 2014). Most of these water bodies are to be considered as potential fish habitat. Metals concentrations and physicochemical parameters were measured for most of waterbodies within the property, experimental fishing was performed, and fish were dissected for morphometric analysis. Benthic organism diversity was inventoried for some lakes and streams and whenever possible, lake sediments profiles were made for the lakes.

Matters concerning the protected area of the Moisie and Pékans Rivers are further detailed in Section 20.4.4.7 (Protected Areas).

20.4.4.6 Fish

A total of 13 fish species were captured during the fish population survey which consisted of the brook trout (*Salvelinus fontinalis*), burbot (*Lota lota*), lake chub (*Couesius plumbeus*), lake trout (*Salvelinus namaycush*), lake whitefish (*Coregonus clupeaformis*), longnose dace (*Rhinichthys cataractae*), longnose sucker (*Catostomus catostomus*), mottled sculpin (*Cottus bairdi*), northern pike (*Esox lucius*), pearl dace (*Semotilus margarita*), round whitefish (*Prosopium cylindraceum*), white sucker (*Catostomus commersoni*) and minnows.

No special status fish species are reported as inhabiting the Project site area. Brook trout is the dominant species in most lakes. Northern pike, longnose sucker, white sucker and lake whitefish are the four species that were captured in the Pékans River.

Confirmed or potential fish habitats are likely to be observed in the Pékans River as well as in Lac Knife. A potential spawning ground for brook trout was identified in stream TR3 in the northern portion of Lac Knife and close to several road crossings. Three (3) other spawning grounds were observed in stream R07 which connects Lac L09 to the Pékans River. No potential spawning ground for brook trout was identified in the Pékans River in the vicinity of the Project site.

20.4.4.7 *PROTECTED AREAS*

In 2003, the Québec government announced plans to create the Moisie River Aquatic Reserve (MRAR) to protect the exceptional Atlantic salmon habitat along with its pristine physical setting from hydroelectric development (MDDEP, 2008). The Moisie River is one of the last wild rivers left in the Côte Nord region of Québec. The river stretches over 363 km from its source at Ménistouc Lake near the Labrador border in the north, to its junction with the St. Lawrence estuary situated about 25 km to the east of Sept-Îles. The watershed of the Moisie River drains a vast area of 19,196 km². The river is fed by nine tributaries. The two largest are the Pékans River (3,419 km²) in the north and the Nipisso River (4,196 km²) in the South.

The proposed MRAR covers an area of 3,897.5 km² encompassing the corridor of the river plus a second corridor extending along the full length of the Pékans River. The main conservation objectives of the aquatic reserves are:

- Conserving Atlantic salmon populations and protecting salmon spawning grounds;
- Preserving the biodiversity of aquatic ecosystems and riparian communities;
- Enable the acquisition of additional knowledge on the ecology of salmon populations as well as on the natural heritage of the river;
- The development of certain key features of the landscape;
- Preserving the natural physical heritage including exceptional landscapes views encountered along the entire course of the river.

Currently, the MRAR has the status of proposed aquatic reserve and benefits from provisional protection until 2025. The main prohibited activities on a territory with an aquatic reserve status under the Québec Natural Heritage Conservation Act (chapter C-61.01) are:

- Mining, and gas or petroleum development;
- Mining, gas, or oil exploration activities;
- Forest development activities, within guidelines of the Québec Sustainable Forest Development Act (Chapter A-18-1);
- The development of hydraulic resources and any production of energy on a commercial or industrial basis;
- Any type of activity likely to degrade the bed, banks, coastline or affect the integrity of the body of water or watercourse.

Lands set aside for the MRAR border the Project to the north, west and southwest. Part of the mining claims of the Project is located within the Pékans River sub-watershed and should have been included in the Moisie River aquatic reserve. However, since the mineral rights of the Lac Knife property predate the designation of the aquatic reserve, Focus has legacy rights for mineral exploration and exploitation. Consequently, all the mining titles of the Lac Knife property were excluded from the reserve in 2005 to form an enclave as recommended by BAPE. Several recommendations were submitted to the BAPE during the 2005 public consultation, one of which was to include the territory corresponding to the area of the proposed MRAR in the event that Focus relinquish to all or part of the mining claims forming the Project.

The Moisie River lies within the Nitassinan (ancestral lands) of the Innu First Nation of Uashat Mak Mani-Utenam (ITUM) and that of the Innu First Nation of Matimekush Lac-John. For centuries, the river which the Innu call Mishta-Shipu ("Great River") has been one of the main waterways used to reach their wilderness hunting, fishing and trapping territories. The Innu of ITUM currently run fly-fishing expeditions on the river. The ITUM band council is also in negotiation with the Québec Government over the status of the aquatic reserve.

20.4.5 Social Environment

20.4.5.1 Land Use

The Project is located within the non-organised territory of la Rivière Mouchalagane, Caniapiscau Regional County Municipality. Fermont is the closest municipality to the Project at about 27 km to the North-Northeast.

Land use in the vicinity of the Project is mainly recreational, as evidenced by the presence of emphyteutic leases for camps and cabins. None of these cabins are located within the Project's perimeter; the closest being at about 1 km to the north. However, the site is frequented by snowmobile, ATV and dog sleigh amateurs. Sport fishing on Lac Knife as well as small game hunting has been observed, but no big game hunting has been documented by Focus in the vicinity of the Project. Sport canoeing on the Pékans River is reported and the downstream Moisie River is reputed for Atlantic salmon fishing, both traditional native and commercially operated outfitters. Information on ITUM community cultural and harvesting practices and on potential heritage sites is to be documented through exchanges the Grégoire family (tallyman) and the ITUM band council.

20.4.5.2 Socio-Economic

The Project is expected to impact the towns of Fermont and, to a lesser extent, the twin-cities of Wabush & Labrador City, Baie-Comeau and Sept-Îles. Fermont (French contraction of "Fer Mont", meaning "Iron Mountain") was founded as a company town in the early 1970s to exploit rich iron ore deposits that is located north of the Project area. It is a mono-industrial town highly dependent on the iron ore mining industry. ArcelorMittal (Mont Wright) and Minerai de Fer Québec (Lac Bloom) are the main mining companies serviced by the city of Fermont. The Iron Ore Company of Canada and Wabush mines have operated in the Labrador City and Wabush area since the 1960's and are located nearby in Newfoundland and Labrador. The other sectors of activities (e.g., manufacturing and retail industries, and health care services) are strongly linked to support the mining industry.

Most of the housing in Fermont is owned by area employers and the free market is almost non-existent for single-family homes. However, the city established a mobile home park to expand housing capacity for newcomers. Apartment blocks, houses and duplexes are also offered by private companies (CLD de la MRC de Caniapiscau, 2015). The only public access to the town of Fermont is a partly paved provincial Highway 389. Highway 389 travels 567 km from Baie-Comeau to Fermont. The Québec North Shore & Labrador Railway (QNS&L) is a general carrier railway owned Iron Ore Company of Canada and offers bulk and direct freight rail transportation from Sept-Îles to Labrador City, located 25 km east of Fermont. The Québec-Cartier Railway, a non-general carrier owned by ArcelorMittal operates only for the transport of iron ore and mine supplies from Mont-Wright to the Port-Cartier facilities.

Wabush Airport (Newfoundland and Labrador) is located 35 km from Fermont. Domestic flights are available to Québec, including Montreal and Québec City. Hydroelectric power, locked onto the national grid, comes from the Churchill Falls generating station in Labrador as well as from Hart-Jaune generating station near Manicouagan Reservoir. This energy is transmitted by the Montagnais substation located in the MRC of Sept-Rivières and whose power is 315 KV. Power availability currently faces limitations.

No commercial logging or other forestry industry is reported in the area, the forest being too sparse for profitable exploitation.

20.4.5.3 Archaeology

As part of the environmental and social study aspects of the Project, an archaeological potential study was conducted in 2012. No sites of such interest are located within the Project site. The closest known archaeological site is located near the Pékans River, about 9 km south of the Project site.

20.5 Preliminary Identification of Potential Impacts

The current assessment of the Project's environmental impact is preliminary and will be detailed in the upcoming update of the ESIA study. Impacts are expected to be limited in comparison to the other iron mines in the area, due to the relatively small size of the operation and infrastructure footprints (less than 4 km^2).

The main potential challenges relate to ore extraction, the locations and designs of the tailings, waste rock and overburden facilities and water management, including the rejects to the final effluent. These may have impact on adjacent physical, biological and social environment.

20.5.1 ACID MINING DRAINAGE

Acid mining drainage has been identified by Focus as a key issue as early as 2011. The graphite is associated with a similar proportion of pyrrhotite in the ore and host rocks, which is a valueless mineral not to be recovered, and hence discarded in the TSF. Pyrrhotite, a non-stoichiometric iron sulphide, is prone to spontaneous oxidation while in contact with humidity and oxygen from the atmosphere. The oxidation process leads to the production of sulphur dioxide (rotten egg smell) or sulphuric acid, plus a residue of ferric iron hydroxide (goethite), which causes the rusty colors of the rocks and soils in the area.

Sulphuric acid generated by such process has then the capacity to solubilise the trace metal content other than iron from the pyrrhotite such as nickel and cobalt, as well as the metals from other sulphides such as zinc and cadmium from sphalerite and copper plus silver from chalcopyrite, as well as metalloids such as arsenic and antimony from arsenopyrite and other sulfosalts. These leached metals are then prone to disperse in ground or run-off water and to contaminate the environment. Furthermore, sulphuric acid has the capability to lixiviate metals from silicate minerals, such as iron, magnesium and calcium, and to form secondary insoluble sulphate minerals such as gypsum and jarosite. The oxidation proceeds until exhaustion of the sulphides but is usually limited by the capacity of the oxygen to access the sulfides, such as in non-porous rock masses.

Mitigation of the acidic mining drainage at Lac Knife has been addressed differently through time. Pyrrhotite recovery and roasting for the production of sulfuric acid has been dismissed early on due to the lack of local market for the acid. Conventional storing in a settling pond has been initially evaluated (Roche, 2012; Met-Chem, 2014; Golder, 2014) and various sites proposed within a radius of 10 km. Such disposal process remains effective to preclude acidic mining drainage as long as the residues remain underwater or are encapsulated in course of reclamation to prevent atmospheric oxygen to reach them.

The difficulty of this approach was the lack of suitable natural areas that are sufficiently wide and flat to hold the volume of residue, meaning that dams were required, and that in the event of a dam failure, the spill would flow directly into Pékans River or Lac Knife. Also of concern was that clay-rich overburden material is nearly absent in the area, and that the substratum of the pond would not be impermeable. Hence, a lining would be required, which would be prohibitive considering the extent of such pond.

In 2016, a co-disposition or co-mingling approach to tailings management was proposed (SNC, 2016; Golder, 2016). This approach meant the stacking of filtered residues mixed with non acid generating waste rocks. Despite modelling, this method remained unproven and raised concerned from the MELCCFP regarding its capacity to sufficiently delay acid generation to allow encapsulation and reclamation prior to the onset of acid generation.

In 2018, Focus mandated Wood Canada Ltd to evaluate the concept of liming the residues with dolomitic marbles in order to buffer the acid generation. A Strength, Weaknesses, Opportunities and Treats (SWOT) analysis was conducted based on technical, economical, regulatory, environmental and socio-economical considerations. The analysis highlighted the advantages of the concept over conventional ponds and co-disposition stacking (Wood, 2018), despite that such concept has not been applied yet on other projects in Québec. The concept was presented to MELCCFP representatives on December 6, 2018, and positively perceived.

Based on this positive reception, humidity cell testing on limed and non-limed residues were conducted (Bernier, 2020). The Montagne-aux-Bouleaux dolomitc marble occurrence was evaluated (Block and Girard, 2019), and a revised FTSF has been designed (Newfield, 2022).

20.5.2 Climate Changes and Infrastructure

Risks and impacts related to climate changes on mining infrastructures and their environment must be addressed, as required by Québec's environmental authorization regime. To issue an authorization, the MELCCFP must evaluate the risks that can be induced by climate change on the Project and its ecosystem, as well as the adaptation measures that the Project may require.

Over the next few decades, climate changes may impact some critical infrastructure related to the Project, such as the FTSF, which could, in turn, disturb the physical, biological and social environment. The main impacts relate to water management due to the change is precipitation regime and more particularly, the added volume of water to be treated. The second impact is the cost related to the stabilization of facilities (Bussière, Demers, Charron and Bossé, 2017).

A gradual increase in the frequencies and rates of precipitation (rainfall and snow) may increase the required capacity of water storage pond and spillways and increase the risk of overflow into the environment. Such increases are to impact construction and maintenance costs. Risks associated with the stability of water retention structures or instability of pit induced by sudden influx due to excessive precipitation shall be taken into account in regard of design and mitigated.

A gradual increase in temperature may impact the water balance and increase the heat Inside tailings and ore facilities, accelerating the acid generation process. Another consequence could be the modification of waterways regime (Bussière, Demers, Charron and Bossé, 2017).

20.5.3 Physical Environment

20.5.3.1 Hydrology

Local hydrology, such as water levels and water flow from streams, lakes, ponds and wetlands, will potentially be impacted by the Project, more specifically those within the Lac Knife and Pékans River watersheds. Negative impacts may originate from:

- Deforestation and site preparation which may accelerate soil erosion.
- Construction of permanent infrastructure and temporary facilities which will modify drainage.
- Mineral extraction and processing, the water from which would be diverted to the settling pond.
- Water management.
- Use and maintenance of heavy mobile and stationary machinery.

The development of the Project is expected to lead to an increase in surface runoff which in turn will cause an increase in water influx in small lakes and streams located in the vicinity of mining infrastructures, but this increase is not expected to have a significant impact on larger water bodies such as Lac Knife and the Pékans River (Golder, 2014). Increased in surface runoff could lead to a rise in sediment influx, which again could have an impact on small ponds.

The construction of mining infrastructure together with earth moving activities, the excavation of drainage ditches, draining of small ponds and deviation of streams, will modify the configuration of the natural drainage network, although minimal, some wetlands located between hills will be filled with overburden during ground levelling work for infrastructure construction. These losses shall be compensated by the rehabilitating of the settling pond after project closure.

The effect of final effluent discharge into Lac Knife is expected to be minimal, since most of the water from the water treatment plant is expected to be recycled by the beneficiation plant, with part of it being evaporated in the final product drying circuit. Significant overflow is expected only in spring and autumn and will be minimal compared to natural run-off during these periods. All effluent water will process in the water treatment plant, and then released as clean water, in compliance with provincial regulations. The final effluent will flow into Lac Knife with no noticeable effect on the lake's water flow and water level.

Numerical modelling of groundwater flow, caused by pit dewatering and water table depression, indicates that groundwater infiltration into the pit shall be between 91 to 182 m^3/d (Leblanc, 2016), representing less than 3% of the water supply to Lac Knife (Golder, 2014). Pit dewatering activities on Lac Knife would be minimal given its natural hydrogeological regime.

20.5.3.2 Surface Waters And Sediments

The composition of surface waters and sediments in wetlands and waterbodies has a direct effect on the ecosystems of fish and benthic organisms as changes in composition can alter their habitats as well as their food sources. Changes in the physico-chemical characteristics (pH, oxygen level, salinity, turbidity, etc.) of river and lake waters, as well as changes in the nature and volume of sediments are expected as a consequence of mining and will have to be mitigated. Activities such as open-pit mining and ore stockpiling, together with the mingling of surface waters with tailings, waste rock and ore stockpiles could lead to:

- An increase in suspended solids (loads) in surface water through soil erosion and transport in runoff waters and through wind erosion of tailings, waste rocks and overburden facilities.
- Project tailings and waste rocks contain sulphides minerals, mainly pyrrhotite, the oxidation of which may cause acid mine drainage (AMD) and metal contamination. Contaminated waters can flow on the surface, be mixed with runoff water and reach lakes, ponds and streams. A detail plan for the mitigation of AMD is discussed in Section 20.5.6.
- Accidental spills (diesel, petroleum, chemicals) that may occur near wetlands, lakes and streams. The risks of accidental spills of fossil fuels are considered significant for the period when the mine will be operated with diesel equipment, but to be significantly reduced once operated by electric vehicles. So a response plan for fuel spills must be put in place. Inversely, the risks of accidental chemical spills are minimal since a only limited amounts of chemical entrants are required for the operation of the mine concentrator. Regardless of the risk, contaminant spill contingency and emergency spill response plans will be prepared to satisfy applicable regulatory requirements, protect the environment, and ensure the best possible safety scenario for responders and employees.

The open pit blasting sequence will be two (2) to three (3) blasts per week (6,000 to 9,000 tonnes) and the use of explosives could contaminate surface waters though contact with residual ammonia and nitrate. However, emulsion type explosives will be used as they are less soluble in water and generate less ammonia. These nitrogen-based contaminants are nutriments for algae, which could cause the eutrophication of small ponds, but would have a minimal impact on large waterbodies such as Lac Knife.

20.5.3.3 Hydrogeology And Groundwater

Mine construction and operation, along with mine reclamation and site rehabilitation works, are expected to have a limited impact on groundwater quality, considering that this water is already in contact with sulphide-rich bedrock. Pit dewatering, water table drawdown and tailings and waste rock management may impact on groundwater quality and hydrogeological regime. The infiltration of groundwater into the pit is expected to be slightly less than the volume of water needed to supply the concentrator and ancillary infrastructure. Well water pumping for human consumption is expected to be of minimal impact (Golder, 2014).

Groundwater quality could also be impacted in the event of mine water leakages under the FTSF's lining or underneath waste rock, overburden and ore stockpiles as well as through seepage of water from the water storage pond into the underlying overburden and bedrock. Groundwater vulnerability mapping for the Project was performed using the DRASTIC index (Aller et al., 1987; MELCC, 2019b) to assess the groundwater aquifer's vulnerability to contamination by surface water infiltration. This index is calculated on the basis on a variety of parameters related to local physical and geomorphological conditions impacting groundwater such the depth to water table, the rate of water recharge, the type of aquifer, the type and grain size distribution of soils, the hydraulic conductivity, the topography (slope), and the impact of vadose zone.

The most vulnerable areas in regard of groundwater contamination are in vicinities of the pit site, the FTSF and waste rock facilities. Their vulnerability relates to the presence of coarse and permeable overburden sediments (ablation till, dead-ice moraines or fluvioglacial sediments).

20.5.3.4 Soils

Soils will be impacted directly by mine development activities, both physically and chemically, and as a result of mechanical stripping, transport and stockpiling. Wind erosion of tailings, waste rocks and overburden storages piles will transport dust particles that could lead to potential soil contamination, including acidification and increasing sulphates and metals content higher than regulation criteria. The following activities, processes, and impacts are identified and will have to be mitigated:

- Deforestation and site preparation, namely, the removal of vegetation and the disturbing of soils, causing increase in erosion and runoff/washing from precipitation and wind.
- Construction of permanent mine infrastructure and temporary facilities that will require the movement of soils, rocks and debris and that are likely to alter the physical properties of the soils in surrounding areas, mainly through dusting.
- Dusting cause by vehicle traffic along the Project's access gravel road.
- The use and maintenance of heavy machinery and vehicles could represent potential sources of soil disturbance including modifications in physical or chemical characteristics through vibration, compaction or because of accidental spills during vehicle storage, or through use or handling of residual materials or hazardous substances. These potential soil disturbances will be confined to road infrastructure corridors and will be minimal outside of these.

Graphite, which is present in the ore but not in the tailings, or which could be dusted from the bagging facility, is practically inert in the environment. However, it would cause blackening of the surfaces where it adheres, and hence, a cause of visual pollution. Graphite is also an electrical conductor and in the event of severe dusting, it may cause sparking of powerlines.

20.5.3.5 Air Quality

Greenhouse gas (GHG) emissions, dominantly carbon dioxide, were calculated (Belien and Vermette. 2020) based on the 2014 Feasibility Study (Met-Chem, 2014). The GHG calculation procedure was established according to the *Guide à l'intention de l'initiateur de projet* (MELCC, 2021) and the *Guide de quantification des émissions de gaz à effet de serre* (MELCC, 2019) and c) norme ISO 14064-1 *Gaz à effet de serre - Partie 1: Spécifications et lignes directrices, au niveau des organismes, pour la quantification et la déclaration des émissions et des suppressions des gaz à effet de serre* (ISO Org., 2018)

GHG emissions from the Project were subdivided into three (3) categories:

- Direct emissions from the combustion of gasoline or diesel from internal combustion engines in vehicles and back-up generators, consumption of reagents at the concentrator and use of explosives. Emission from concentrate trucking from mine site to Baie-Comeau was not included.
- Indirect emissions from the use of the hydroelectric network.
- Indirect emissions from several sources such as employee commuting, deforestation, garbage disposal, concentrate expediting to Wabush for train loading (if applicable), delivery of products and subcontracting.

Preliminary calculations have been carried out for each GHG susceptible to be emitted by the operations as well as for each of the Project's components. Calculations indicate that the main sources of GHG emissions is from equipment powered by internal combustion engines at the mine site, such as trucks (haul, fuel, water etc.), shovels, drills, road grader, loader, track dozer, pick-up fleet, generators and pumps. Based on data published in the 2014 Feasibility Report, it was estimated that mobile and fixed sources using diesel will emit approximately 35,000 tonnes equivalent CO_2 in the atmosphere over more than 25 years corresponding to construction and operation phases, or approximately 1300 tonnes per years.

The current mining plans calls for a slightly larger operation. The 2014 version anticipated 21.77 million tonnes of rocks (ore and waste) and overburden to be moved over 25 years. The FSU here suggest 33.09 million tonnes of rocks to be moved over 27 years, hence approximately 53,000 tonnes equivalent CO2, or an average of 1970 tonnes per years is estimated. Imprecision on these estimates are large, but considered as negligible compared to other potential sources of CO_2 emission related to the Project, and will be accurately calculated for the ESIA update.

Since it is planned that the mine operations are to be electrified as soon as equipment are available, this will then drastically reduce emissions, being restricted to occasional back-up generators plus the gas emitted from blasting operation.

GHG emissions for the expediting of the concentrate by conventional tractor trailer trucks to Baie-Comeau is estimated at 3,000 tons of CO_2 per year[9] (50,000 tons of concentrate), by far the largest contributor of the Project. If the concentrate is containerized and shipped by train to Sept-Îles or Baie-Comeau harbours, it is estimated at 600 tonnes of CO_2 per year. This calculation assumes round-trips for vehicle, optimising haulage of consumables for the mine operation. Again, GHG emissions can be significantly reduced if a fleet of electric trucks is used. There are currently no plans to electrify the QNS&LR or QCR.

[9] Calculated from Canadian National Carbon calculator: https://www.cn.ca/en/delivering-responsibly/environment/emissions/carbon-calculator

GHG emissions related to worker travels from outside of the area due to rotation has not been evaluated.

Another potentially significant source of GHG emissions is from the acid buffering by dolomite liming in the FTSF. Theoretically, each tonne of pyrrhotite generates about 0.5 tonnes of CO_2 through the acid buffering reaction, if the reaction is complete. Pyrrhotite accounts for approximately 15% by weight of the tailings, or 1.3 million tonnes over LOM, or 650,000 tonnes of potential GHG emissions. However, the extent at which the reaction will proceed is uncertain but expected to be limited due to passivation. Reaction is anticipated to be halted prior to total consumption of pyrrhotite due to gypsum or jarosite encrustation or due to the lack of oxygen, which is the purpose of the progressive rehabilitation plan. Measurement of such emissions will be conducted during the column tests planned for 2023.

No methane emissions are anticipated from the current operations unless organic matter is added to the tailings as oxygen scavenger. Methane emission by diesel engine is reported negligible, and a catalytic converter can be added to further mitigate such emission from exhaust gases. Vehicle or equipment operating on liquefied natural gas has not been considered.

20.5.4 Biological Environment

20.5.4.1 Vegetation and Wetland

Part of the vegetation cover and certain wetlands will be lost within the perimeter of the Project and in the immediate Project area due to the construction of mine related infrastructure and mining. These activities will affect 33.1 ha of wetlands contained within the limits of the pit (8.9 ha), TSF (6.7 ha.) and overburden stockpiles (17.5 ha.). Most losses of wetlands are located at the pit and TSF, while most of the vegetation losses are from forested areas. Wetland losses will be partly compensated by revegetation of the settling pond at the end of the Project's life.

20.5.4.2 Mammals

Wildlife habitats within and nearby the Project are expected to be impacted by mining activities. Logging and the clearing of vegetation, noise from operations, lighting, dust, and vibrations may disturb terrestrial fauna and birds and result in loss of habitats or the migration of certain species. Human presence alone could impact the occupation of the territory by fauna. Some sensitive species, such as woodland caribou, will avoid the area. Vehicle-animal collisions on the new project access road and the increase in vehicle traffic on Highway 389 are also expected.

Observations made in 1988 suggest that woodland caribou herds were present on the vicinity of the Project, although recent sightings have been rare. A recent survey carried out by the Québec Ministry of Forests, Wildlife, and Parks (MFFP) mentioned that no woodland caribou has been observed within a radius of 5 km from the Project and only one (1) caribou was observed in a radius of 5 to 10 km. These observations are also supported by the following statements taken Groupe

DDM's report (2014): "The mine site is located within the distribution range of woodland caribou" and "land users have reported at least five (5) incidences of caribou between 2011 and 2013 in or near to the Lac Knife area".

Infrastructure and mine operations will result in a 43 km^2 reduction in functional caribou habitat caused by noise and human presence. Considering the size of the study area (5,015 km^2), the Project will disturb less than 1% of the caribou's functional habitat, which is not sufficient to threaten the self-sustainability of its population (Aubin and Belien, 2020). Although mitigation measures are not required, the presence of caribou will have to be closely monitored throughout the development and operation of the project.

The old exploration camp on the western shore of Lac Knife is inhabited by bats and these will likely have to be moved for safety reason. As bats live near water bodies, an assessment of the benefits for this species of keeping the camp as it is or replacing it with the installation of bat boxes as a mitigation measure will be considered. Another mitigation measure may be to maintain a riparian strip 30 meters wide along most water bodies in the mining site area. These strips are necessary to maintain the ecological integrity of the bats' habitat (Enviro Science and Faune Inc., 2018).

For the other mammals, mitigation measures will be evaluated and put in place, if required.

20.5.4.3 Fish and Benthic Organisms

Two (2) surveys were carried out to characterize the baseline conditions of aquatic environments at the Project area, the first by Groupe Synergis between 2012 and 2014, and the second by IOS between 2020 and 2021. Results from these surveys indicate that fish were observed in most lakes and ponds, except for those located in the area where Focus plans to install most of the mine infrastructure (crusher, concentrator, water treatment plan, garage etc.). The only exception is a small pond 50 metres west of the pit. The preliminary mining plan indicates that this pond and the stream which connects it to Lac Knife will be lost by the excavation of the pit. Five (5) lakes, including Lac Knife and Lac Rainy, and two (2) streams were surveyed for benthic organisms (benthos) by Côté andt Guillemette (2014) and several species of benthos were identified. Lakes that were not surveyed in 2012 or 2014 are expected to host similar benthos.

Fish and benthos are impacted by changes in acidity of water. Recommended pH needs be near neutral, above 6 and below 9 (MDDEFP 2013), for fish habitat to avoid adverse effects on aquatic organisms and their offspring, such as deformity, when exposed to it daily over their lifetime. Optimal pH values for fish growth are between 6.6 and 7.2 (Binese 1983). According to MELCCFP Directive 019 on the mining industry, the accepted pH range for the final effluent must be between 6.0 and 9.5. Fish survival could be compromised in lakes and streams where pH is less than 6.0, and considering the acid generation potential of the tailings, stringent mitigation measures are required.

Geochemical surveys indicated that pH for lakes in the vicinity of the Project ranges from acidic (pH 4.4) to alkaline (pH 8.8) conditions. Moreover, pH measurements show seasonal and annual variations for the same waterbody. A recent report published by the Government of Québec (MELCCFP, 2022c) indicates that among the 221 lakes sampled in the Côte-Nord region, 11.3% are acidic (pH less than or equal to 5.5), 18.6% are transitional and 1% are non-acidic (pH greater than 6). Several lakes within the Moisie River watershed are acidic. This condition is interpreted to be of natural origin and is caused by the accumulation of organic matter and surface waters with minimal solute content. Significant amounts of dissolved iron, aluminum and phosphorus are observed in many lakes, metals that are not considered toxic for aquatic life since they are associated with organic matter and not significantly bioavailable (MELCCFP, 2022a, Moisie River watershed).

Surface water surveys reported acidic conditions (pH below 6.0) in two (2) of the lakes located northwest of the pit and near the TSF (Rey, Vermette and Aubin, 2022b). Streams connected to these lakes flow westward toward the Pékans River into other streams and lakes where fish and three (3) spawning grounds were observed. As fish and spawning grounds are reported in these water bodies, their water quality will have to be closely monitored during mining operations.

Water from acidic lakes is also characterised by low hardness and alkalinity, rendering them vulnerable to further acidification and increased metal toxicity. Sediments at the bottom of such lakes such as Lac Knife are hence considered at risk for fish benthic organisms in the event of acidification caused by mining activities at the Project. In the long term, increased metal toxicity problems could arise in the watercourses located near and/or downstream from the tailings and waste rock piles and a mitigation plan will be needed.

20.5.5 SOCIAL ENVIRONMENT

Three emphyteutic leases are recorded for cabins at the north end of Lac Knife, but none are located within the Project’s footprint. Mining activities are expected to be considered as an annoyance by the cabin owners. Land-based activities that could somehow be impaired within the Project area include trapping, canoeing, large game hunting and sport fishing. Access to the Project will be restricted for safety reasons.

The Caniapiscau regional county municipality (MRC) and the city of Fermont are heavily dependent on the iron mining industry to ensure their social and economic livelihood, and opportunities for economic diversification are rare. The Project, although considerably smaller in scale to that of the iron ore mines of Fermont, represents an opportunity for mineral diversification away from iron ore. The Lac Knife mine will operate for a period of about 27 years, employing approximately 100 workers, and up to 200 workers during the construction phase. Such workforce represents approximately 10% of the current workforce available in Fermont, not including Wabush and Labrador City.

The development and operation of the mine will directly and indirectly have a positive impact on local employment, training, service providers, and for new business development opportunities at the local and regional levels, although this impact is not sufficient enough to destabilize existing business, services and shops. Although the Project represents a diversification of the local economy, it is not to be compared to the activities generated by the iron mine operations.

For the FSU, the graphite concentrate, produced at a rate of about 50,000 tonnes per year, is to be packaged in 1 tonne bulk bags and transported to Baie-Comeau by truck and then loaded on railcars for onward transportation to an east coast shipping points or directly to a North American endpoint. This represents about 1,800 truckloads, per year. The traffic increase on Highway 389 would not be significant. The option of shipping the concentrate by marine containers or trucks through QNS&L or QCR railways has not been evaluated.

Graphite powder is not considered as hazardous material and does not require specific safety measures for its transport. Each truck load will be enclosed and in the event of a road accident, the risk of spillage from the material is minimal and no severe environmental consequences are expected. The use of B-trains trailer trucks is not recommended due to road treacherousness.

Fuel oil consumption for diesel equipment is to be supplied by local dealers and delivered by tanker truck twice a week. A small fuel farm is anticipated on site. Back-up generator and fire-pump consumption is anticipated minimal and sporadic. Minimal environmental risk is anticipated considering the limited consumption.

Methyl Isobutyl Carbinol (MIBC) used in the concentrator is not locally available and will require delivery by tank trailer truck, two deliveries per year. MIBC is a flammable volatile liquid and hence hazardous material (UN-2053) and require handling as most other volatile organic solvents. In the event of a spillage or road accident, precautions are needed to avoid explosions or fire and cleaning with vacuum trucks are required. MIBC is reputed biodegradable, has a low ecotoxicity and not expected to bioaccumulate.

Flocculent is added to the tailings in small amounts. Magnafloc 333 is recommended, which is a polyacrylamide not considered as a hazardous good for transportation. A powdery flammable organic compound, it is to be delivered in 20 kg bags by a general road carrier. It is not reputed to bear ecotoxic effects.

Explosives are available as locally produced emulsion and will be delivered by dealer’s truck, with minimal storage on site.

20.5.6 Mitigation Measures

Mitigation or attenuations of the impacts predicted over the entire life of the Project were addressed or will be addressed by Focus in the coming months through the public consultation process.

20.5.6.1 Hydrology

In the Fermont area, rivers and lakes play a role in recreational, hunting and sport fishing activities and the socioeconomic value attributed to this component is of medium importance (Golder, 2014). The following mitigation measures are planned:

- Minimize deforestation and reforest or revegetate affected areas;
- Implement measures to prevent soil and overburden erosion and sedimentation in watercourses, including the monitoring of beaver dams;
- Prohibiting the discharge of rock debris or waste ground into lakes and watercourses;
- Install culverts and diversion ditches to drain infrastructure areas toward the water settling pond and divert streams outside the infrastructures.

20.5.6.2 Surface Water and Sediments

Impacts on the quality of surface waters and their sediments are weighted heavily in the environmental assessment due to the perceived importance and sensitivity of salmon habitats in the Pékans and Moisie Rivers by First Nations and by other stakeholders (Golder, 2014).

Measures will be introduced to prevent exfiltration waters and runoff from reaching the natural drainage system. A network of drainage ditches will be installed around all site infrastructure and impermeable geomembranes will be installed under the FTSF, waste rock dump, ore pads and the water storage pond. The water storage pond's capacity has been calculated to match peak influx from the entire Project including drainage from the FTSF, pit dewatering and process plant purges. Once collected, water will be pumped to a water treatment plant where it will be treated to reduce water acidity with lime to adjust pH. Part of the contaminant is expected to be precipitated by the gypsum sludge, which would be filtered and discarded in an appropriate commercial disposal site. Residual contaminants, such as sulphates, nitrates, metals and hydrocarbons will be removed from water by reverse osmosis or ion exchange columns until effluents are compliant to indicated levels before being recycled in the processing plant or released as final effluent.

The final effluent will meet the water quality standards set by the Québec MELCCFP under *Directive 019*. A temporary holding pond at the northwest end of the FTSF will be required during construction. (NewFields, 2022). The detailed design of the water treatment plant is pending, as it will require data from the FSU along with the results of humidity cells lixiviation tests, to be initiated in 2023.

At the end of mining operations, as part of the upcoming (2023) updated mine closure and mine site rehabilitation plan, waste rock and tailings piles will be covered with a geomembrane and then capped with material taken from the overburden piles and revegetated. Vegetation is intrinsic to the tailings and waste rock encapsulation process to limit wind erosion and the air dispersal of soil and dust particles (NewFields, 2022). The use of geomembranes is required since no natural impermeable construction materials, such as glacial clays, are available in the Project area.

The following mitigation measures will also be implemented:

- Installation of temporary sediment barriers on streams and ponds that will be impacted during construction along with the revegetation of the shores of any waterbody that suffered disturbances.
- Avoiding major works along lake and stream shores during heavy rain or spring thaw, or on steep slopes;
- Since the frequency and duration of extreme rainfall and snowfall events are expected to increase over the expected mine life of the Project, spillway and retention capacity shall be designed accordingly. In the event of a forecasted risk of overflow, the water level of the water storage pond should be lowered by pumping the excess water to the treatment plant and discharging it as final effluent;
- Vehicle speed will be limited to reduce dust emissions and roads shall be watered in dry weather.
- Ensure proper maintenance and periodic inspection of tanks intended for the storage of petroleum-based products and hazardous materials. Equipment and machinery maintenance shall be scheduled accordingly. Inspection procedures shall be established and regularly reviewed.
- Protocols for management and handling of hazardous materials shall be implemented, along with worker training programs, spill prevention, and emergency response plans.
- Set up an equipment inspection procedure.
- Proper blasting protocols to minimise nitrogen contaminant emissions shall be developed.

20.5.6.3 Hydrogeology and Groundwater Quality

An ecosystem valuation was performed for the Project to assess the impact of human activities on an environmental system, by assigning an economic value to the ecosystem or its ecosystem services. The value for the hydrogeology component of the ecosystem is considered as medium and its socio-economic value is low since the Project is located in a remote area where groundwater is not used as a source of drinking water supply (Golder, 2014). However, groundwater ultimately seeps into surface drainage and may thus impact surface water quality on the long term, so that measures will have to be introduced to prevent any contamination.

Mining waste management will be done through the development of a dry stack FTSF and waste rock dump. Tailings will be filtered and compacted to bring moisture content to less than 10%. This will minimize the volume of pore water, hydrostatic pressure and seepage to groundwater (NewFields, 2022). Furthermore, a linear low-density polyethylene (LLDPE) geomembrane liner system and a reactive barrier of dolomite will be installed underneath dry stack tailings, waste rocks and ore pads, which should minimize the exfiltration of water into the overburden and bedrock.

A network of drainage canals will be installed at the base of the FTSF and above the liner, in order to collect leachate from seepage or infiltration water from the pile and route it to the water storage pond. A second seepage collection system will be installed under the impermeable LLDPE liner to collect potential leaks. The seepage collection system will consist of perforated pipes and header pipes buried in a permeable sand layer which will direct flow towards collection wells. Seepage water from the collection wells will be pumped into the water storage pond (NewFields, 2022). A network of lined ditches will surround the tailings, waste dump and ore facilities and direct water toward the water storage pond.

To mitigate the generation of acid mine drainage (AMD) through the oxidation of sulphides, tailings will be amended with dolomitic marble interlayers to provide AMD buffering capacity. The dolomitic marble sourced from a nearby dolomitic marble occurrence (Montagne-aux-Bouleaux) where it will be quarried, crushed and transported to the Project and stocked piled. Crushed dolomite will be added periodically to the tailings and waste rocks. A finely crushed dolomitic marble layer will be placed at the base of the FTSF, above the leachate collection system, over which the tailings will be compacted. Other layers of dolomitic marble will be intercalated between layers of tailings that are five (5) metres thick, as the FTSF is developed. Overall, it is estimated that dolomitic marble will total approximately 20% of the total tailings volume in the FTSF (NewFields, 2022).

The effectiveness of adding dolomitic marble layers to tailings and waste rocks to buffer AMD generation was tested positively in humidity cells. The small-scale (benchtop) kinetic tests spanning a complete year were carried out on tailing samples with and without dolomite. They demonstrated that amending significantly delays the onset of AMD generation and will thus facilitate the gradual restoration of tailings (Bernier, 2020). In 2023, column lixiviation tests will be undertaken at URSTM laboratories in Rouyn-Noranda, Québec.

These column tests will assess the effectiveness of adding several layers of dolomitic marble to the tailings by replicating, on a small scale and in lab conditions, the FTSF configuration. Focus also expects to build field pads on the Project site to test the acid neutralisation capacity of dolomitic marble layers on a long-term basis. This testing will aim to evaluate the acid generation and/or neutralization potential of dolomitic marble/tailings assemblage, under field (real) conditions whereby the tailings will be subjected to natural wet-dry cycles, freeze–thaw cycles, temperature variations as well as variations in rainfall volumes and frequencies.

Seepage from the water storage pond is to be controlled by installing a LLDPE geomembrane liner system on the bottom and upstream faces of the pond with drainage underneath, similar as to the

FTSF. The seepage eventually collected by the drains will direct flow towards a well and pumped back into the pond (NewFields, 2022).

In view of all these elements, the degree of disturbance or contamination and the intensity of the impact on hydrogeology and on the quality of groundwater should remain low. The extent of the impacted area should be restricted to the Project area. Any potential impact could however be long-term, spanning the life of the project and beyond. Focus recognises that most of the mitigation measures listed in the surface water and sediment quality section of this section of the FSU will also apply to hydrogeology and groundwater. In addition to these measures, Focus will have to abide by is all rules for the groundwater withdrawal zones protection covered in the Québec Environment Quality Act's Regulation Respecting Water Withdrawals and their Protection (chapter Q-2, r. 14), in particular by delimiting an immediate protection zone of thirty (30) metres or more around the mine facilities. A set of thirty (30) piezometric wells are currently installed peripheral to the pit and infrastructures and groundwater levels and quality will have to be monitored now and until the end of site reclamation.

20.5.6.4 Soils

The ecosystem value for soils in the Lac Knife Project area is considered low since these are dominantly sandy podzols or brunisols with limited availability of nutritional elements. A low socioeconomic value as therefore been assigned since socioeconomic benefits are limited, both for agriculture and forestry, and no protection concerns are indicated (Golder, 2014). An area of 2.75 ha. has already been disturbed in the pit area (figure 20.1) during exploration work conducted in the 1990s by previous owners of the project. This area was subsequently covered with granular material during reclamation work conducted in 2009 and 2010.

Soils excavated for construction and pit clearing will be stored in a stockpile located southwest of the pit, aside the waste rock and tailing storage facility. Mitigation measures in regard of soil disturbance include:

- Prevent soil contamination caused by wind erosion and dust dispersion from tailing, waste rocks and overburden (if remaining) piles through the installation of a geosynthetic liner and through revegetation;
- Avoid excavation works during period of heavy rain and spring thaws to prevent erosion. Stabilize the ground as well as the slopes of cuttings and embankments in the pit as these are sensitive to erosion.
- Once the construction activities are completed, revegetate the soil in perturbated areas not used for infrastructures.
- Limit the circulation of machinery outside of the Project infrastructure area and select equipment that minimize impacts on soils (eg: rubber-track mounted machinery), and

rehabilitate trails upon completion of work, including exploration trenches and drill access trails and drill pads.

- Prioritize working on frozen ground and avoid construction work on steep slopes.
- Use proper fueling sites and loading/unloading procedures to reduce the risk of accidental spills.
- Implement contaminant spill contingency and emergency spill response plans and ensure proper worker training.
- Ensure the proper maintenance and periodic inspection of tanks and containers intended for the storage of petroleum-based products and hazardous materials, in compliance with applicable regulations. An oil separator will be installed in the mining garage and together with a washing bay to collect waste oil.
- Ensure that all vehicles, equipment, and machinery on site are properly maintained to guaranty optimal operating conditions.

20.5.6.5 Wetlands

The area encompassing the Lac Knife mine, concentrator, FTSF, and other mine-related infrastructure is peppered with small wetlands, the impact upon which are to be prevented, minimized or mitigated. Logging, shrubs clearing and ground scouring in area adjacent to these wetlands must be limited and respect applicable regulations to prevent influx of surface water and sediments or changes in local drainage pattern as well as the losses of wildlife habitats. Measures introduced by Focus to mitigate adverse effects on wetlands will have to follow the recommendations set forth in the Québec Sustainable Forest Development Acts and the Regulation Respecting the Sustainable Development of Forests in the Domain of the State (chapter A-18.1, r. 0.01) which propose several approaches to protect wetlands including carry out work in winter, and delineating a minimum 30-metre buffer zone around open peat bogs, swamps, marshes, lakes and watercourses within which no activity or machinery will be authorized.

The Québec Act Respecting the Conservation of Wetlands and Bodies of Water (Article 46.0.1) stipulates that development projects must be conceived in such a way to minimize impacts and losses from the surrounding environment, such as wetland. However, if all of part of a wetland is affected by physical works, machinery or infrastructures, compensation measures must be applied for the damages sustained to the ecological functions and biodiversity of wetlands. These measures can be either financial compensation or may consist in reclamation or replacement of the habitat.

Article 46.0.4 of the same Act stipulates that the issuance of an environmental authorization for a project, such as a mining project, may be subject to the payment of a financial contribution, the amount of which is established in accordance with a government regulation, to compensate for adverse effects on the wetlands and bodies. In general, the compensation will be in the form of a financial contribution, and the amounts collected will be paid into the Fund for the Protection of the

Environment and the Waters in the Domain of the State. Compensation measures may also consist of reclamation or replacement of the wetland habitats.

20.5.6.6 *Air Quality*

The value of air quality under the ecosystem valuation of the Project is considered as high. The sources that could have potential negative impacts include:

- The release of dust and wind-borne particles due to various mining related activities, the mitigation of which has been previously discussed.
- The release of ammonia and nitrogen oxides gases related to blasting activities which shall be mitigated through proper blasting techniques.
- The release of sulphur dioxide through the oxidation of sulfides from the ore or in the FTSF, which shall be mitigated by the dolomitic amendment.
- The release of carbon monoxide, hydrocarbon and nitrogen oxides fumes from exhaust of machinery or generators, which shall be minimal since mobile mining equipment and stationary motorized equipment will be electric. However, the buffering reaction between dolomite and acid is to be the main contributor to carbon dioxide emission.

The impact study on air quality and wind particle dispersal (air quality model) is underway and will be subject of a separate report to be completed in 2023. This study will include the modeling of the atmospheric dispersal of dust, metals and other chemical components, dust dispersal from the access gravel road, as well as fugitive dust emissions associated with the construction, operation and rehabilitation phases, including. The report will include a dust management plan designed to ensure that wind erosion and blasting emissions estimates comply with the requirements of the *Guide d'instructions: Préparation et Réalisation d'une modélisation de la dispersion des émissions atmosphériques – Projets miniers* (MELCC, 2017). The mitigation measures recommended in this study will be put in place by Focus and will comply with all applicable regulations.

20.5.6.7 *Noise Environment*

Noise pollution related to mining activities are an important occupational health and safety issue for workers, as well as a source of disturbance for the local population and for sensitive wildlife. The main sources of noise will come from the mine pit are due to intermittent drilling and blasting as well as from loading of the ore onto trucks. Noise from the concentrator is expected to be limited to a constant rumbling. No blasting or mining is planned to take place at night. Along the access roads, noise will be caused by the vehicles traffic, which is estimated to about 200 passages per day. Apart from three (3) cabins located on the western shore of Lac Knife, there are no permanent residences in the vicinity of the mining facilities.

20.6 Waste Rock, Ore, Tailings and Process Water Characterization and Management

From 2012 to 2020, Focus conducted a series of geo-environmental studies aiming to establish the physical and geochemical characteristics of waste rocks (sterile), tailings and process waters from the Lac Knife deposit (Germain and Bernier (2013), Bernier (2014), Lamontagne (2014), EcoMetrix (2016), BBA (2018) and Bernier (2018 and 2020). This geo-environmental characterization program had two objectives:

- Classify waste rock and tailings according to the definitions presented in Directive 019 (MDDEP, 2012) and the Guide de caractérisation des résidus miniers et du minerai (MELCC, 2020). The objective is to determine the appropriate methods required for the storage of tailings and waste rock.
- Compare the current levels of metals and chemical compounds in soils, sediments, groundwater and surface water before the beginning of mining operations with quality criteria dictated by various environmental regulations to determine the current background levels and set the tolerances for the post-closure abundances.

Based on these objectives, waste rocks and tailings were evaluated for the following hazards:

- Potential to generate acid mine drainage (Potentially Acid Generating (PAG) material)
- Abundance of leachable metals under strong acidic water, natural acid-rain-type water, and neutral water.
- Identification of high-risk rock or other materials containing at least one metal or chemical component in excess of the criteria presented in Table 1 from Directive 019 (MDDEP, 2012).
- Presence of radioactive nuclides. A preliminary evaluation was carried out by Terrapex in 2012 and a radiometric survey of the site will be conducted in summer 2023.
- Self-heating potential of sulphide minerals in tailings and/or waste rocks once stored in their respective facilities. The objective of self-heating tests is to rule on the need to implement additional measures to mitigate the risk of spontaneous combustion of pyrrhotite-rich materials. Self-heating evaluation potential assessment was carried out by BBA in 2018.

Low-risk materials are those that are not classified as PAG, leachable, high risk, radioactive and/or inflammable (MELCCFP. 2020).

20.6.1 Waste Rocks Characterisation

Geological cross-sections through the Lac Knife deposit were reviewed to select drill hole sample intervals that were used to characterize the spatial variability of the sterile rock units that will be extracted and stockpiled as waste rock to access the ore. The sampling plan, based on visual examination of the core, was designed to target waste rocks that will be exposed in the final pit walls or stored in the waste rock stockpile, as well as to test ore that will be sent to the mill for processing.

The sample intervals were specifically selected to ensure they were included within the proposed open pit shell outline. The sampling protocol used along with the detailed results of the waste rock characterization work, may be found in Lamontagne (2014) and Bernier (2014). A second round of pit wall sampling was conducted on drill holes performed in 2021, the assay of which is pending.

Quartz-feldspar-biotite gneiss with garnet, kyanite, vanadium-bearing phlogopite with locally sulphides (pyrrhotite and pyrite), is the principal lithological unit hosting the deposit and will constitute the bulk of waste rock stockpiles. The potentially acid generation (PAG), leachable and/or high-risk material characterizations of waste rocks was done using static tests including acid-base accounting (ABA) and net acid generation (NAG) as well as whole rock and leachable metals analysis, with leaching tests such TCLP, SPLP, CTEU-9 and shake flask extraction (SFE).

A total of sixty-four (64) waste rock samples were submitted for environmental testing between 2012 and 2016 (Bernier and Germain 2012, Bernier 2014, Lamontagne 2014 and EcoMetrix 2016). Results show that most (85 %) of the waste rock samples contains sulphides (pyrrhotite +/- pyrite). Based on NAG static tests as well as their sulphur and carbon contents, the acidification potential (AP) of most waste rock samples from the Lac Knife orebody is higher than the neutralization potential (NP) indicating they likely classify as PAG. However, this PAG potential will have to be confirmed by kinetic tests using humidity cells or column tests spanning over one year. The paste pH measured for waste rocks ranges between 8.04 and 8.40 (Bernier, 2014).

Forty (40) waste rocks samples were tested for their metal leaching (ML) potential. Results from Bernier (2014) and Lamontagne (2014) indicates that waste rock is classified as potentially leachable for zinc (Zn), chromium (Cr), nickel (Ni), cadmium (Cd), copper (Cu), cobalt (Co), barium (Ba), manganese (Mn), molybdenum (Mo), silver (Ag), selenium (Se) and arsenic (As). Results from TCLP leaching tests (strong acid water) indicate that waste rock samples have leached Ni and Zn exceeding the limit for groundwater protection while Cu has been leached from CTEU-9 tests (neutral water). These waste rock samples are not classified as high-risk materials since none of these metals returned concentrations higher than the TCLP 1311 criteria as per associated to high-risk materials (Directive 019, MDDEP, 2012). Results from SFE tests returned leachable metal concentrations below the groundwater protection criteria. However, the leachable and high-risk potential for waste rocks should be confirmed by long-term kinetic tests to be scheduled to commence at URSTM in 2023.

Radiometric measurements have been performed with a dosimeter on the seven (7) composite drill core samples used in the lock cycle tests conducted at SGS Canada Inc.'s Lakefield, Ontario, laboratories in 2013, including one (1) waste rock and six (6) ore samples. The radiation dose recorded from the waste rock composite sample is 0.10 µS/h (Germain and Bernier, 2013). The observed range of uranium and thorium concentrations in Lac Knife mineralization and host rocks is within the range of concentrations normally observed for average sedimentary rocks such as black shale (50-250 ppm U; 10-15 ppm Th) as reported in Bernier (2013).

Furthermore, the combined calculated activities of uranium and thorium in all types of mineralized composite samples are less than 25 Bq/g, which is less than the 70 Bq/g indicated by regulation in regard of the transportation of Naturally Occurring Radioactive Materials (NORM) (Germain and Bernier, 2013).

As recommend in the Québec Tailings and Ore Characterization Guide (MELCC, 2020), a detailed study must be undertaken to evaluate the radioactivity potential for ore and waste rocks. This study will be carried out in 2023.

20.6.2 Ore Characterisation

A total of seventy-seven (77) ore samples were submitted for environmental testing between 2013 and 2016 (Germain and Bernier 2013, Bernier 2014, Lamontagne 2014 and EcoMetrix 2016). These samples were selected from: a) individual and composite fresh core samples of massive (> 20 % Cg), semi-massive (10 % to 20 % Cg) and low-grade (2 % to 10 % Cg) mineralisation intersected in holes drilled between 2012 and 2014 and b) a surface bulk composite samples (21.1 metric tonnes) of weathered (pyrrhotite-rich) semi-massive graphitic ore extracted in 2013. All samples were analyzed for whole rock and traces elements contents including metals, sulphur (total and sulphide) and carbon (total, inorganic and graphitic).

The potential for acidic mine water generation was assessed through several tests, including modified acid-base accounting (MABA), paste pH, and humidity cell tests (EcoMetrix 2016, Bernier 2018, 2020). Regardless of their graphitic carbon (Cg) content, all fresh and oxidized ore samples were classified as PAG. The paste pH for fresh ore ranges from 6.71 to 8.60 while it ranges from 3.60 to 3.77 for weathered (oxidized) ore.

The leaching potential for several metals was evaluated for twenty (20) composite ore samples. Results show that the ore classifies as potentially leachable for Zn, Ni, Cu, Cd, Mo, Co, Cr, Se and As (Germain and Bernier 2013, Bernier 2014 and Lamontagne, 2014). Leaching test results (TCLP) indicated that Zn, Ni, Cd and lead (Pb) were leached in concentration exceeding the groundwater protection criteria for fresh and oxidized ore.

For some ore samples, TCLP tests have returned iron (Fe) concentrations above the recommended final effluent monthly average of 3 mg/L (Bernier, 2014). Other leaching tests on graphitic ore indicate that Zn, Ni, Cd, Cu and mercury (Hg) are leached in short-term SPLP tests (acid rainwater simulation) while Cu and Zn are leached in short-term CTEU-9 tests (simulation of neutral water). SFE test results indicate that leachable metal concentrations are below groundwater protection criteria. None of the graphitic ore samples returned concentrations in metals exceeding the TCLP 1311 criteria associated to high-risk mining materials (Directive 019, MDDEP 2012).

Radiometric measurements have been performed on six (6) ore samples, with radiation doses ranging from 0.13 µS/h to 0.18 µS/h, which are relatively low values. These results correspond to a yearly radiation dose to less than 1.58 mS/y within the range (1.0 to 2.5 1.58 mS/y) of natural background a person gets exposed during a year (Kelly, 2000; Germain and Bernier, 2013). As mentioned previously, according to current regulation, a detailed study must be undertaken to evaluate the radioactivity potential for ore and waste rocks to be carried out in 2023.

The self-heating potential of ore has been evaluated on three (3) composite ore samples, 2.52 % Stotal), medium sulphur content (5.01 % Stotal) and high sulphur content, plus two fresh and oxidized tailing samples (Nesset and Hardie, 2018). Results indicate that low and high sulphur samples exhibit significant self-heating behaviour. The self-heating potential for the oxidized tailing sample is even higher than that of the low and high sulphur samples. The medium sulphur content ore sample as well as the fresh tailing samples apparently do not represent risk to self-heat (Nesset and Hardie, 2018). No explanation is available about why the behaviour of the various samples is different and consequently all ore and tailing material shall be considered as potentially self-heating and will have to be handled appropriately.

20.6.3 TAILINGS CHARACTERISATION

From 2014 to 2020, fifteen (15) tailings samples were submitted for testing as were samples from ore and waste rock (Bernier, 2014; EcoMetrix, 2016; and Bernier, 2018 and 2020). These tests were carried out to assess the metal leaching potential from the tailings as well as to characterize the acidity of seepage waters from the FTSF. The tailings samples were obtained from the pilot metallurgical testing of fresh and oxidized ores that were classified as PAG. The paste pH values of these samples range between 3.77 in oxidized tailings material to 7.79 in fresh tailings.

Short-term leaching potential tests (TCLP, SPLP, CTEU-9) indicate that most tailings material, as for ore samples, could be potentially leachable for Zn, Ni, Cu, Cd, Mo, Co, Cr, Se and As. Such results were expected since the bulk of these metals is hosted in the iron sulphides, which are not recovered at the concentrators and rejected among tailings and susceptible to oxidize. Leachate from both fresh and oxidized tailing samples exceeded the limit for groundwater protection criteria in TCLP tests for Zn, Ni, Cd and Cu. Results from SPLP and CTEU-9 tests indicate that Zn, Ni exceeded tolerance criteria from oxidized tailings but not from fresh tailings. However, none of these samples returned metal concentrations exceeding TCLP 1311 criteria as per *Directive 019* (MDDEP, 2012) associated to high-risk materials.

Aside of its natural metal content and acid generation potential, some reagents will be added to the ore in the course of processing and will eventually end up in the FTSF. About 66 liters of fuel oil, 147 liters of Methyl Isobutyl Carbinol (MIBC, $(CH_3)2CHCH_2CH(OH)CH_3$) and 20 kg of flocculent will be consumed per day, part of which would be remaining in the tailings. Abundance in seepage water, stability and toxicity of these compounds will require to be addressed in the design of the water treatment plant. An oxygen scavenger reagent is also suggested to be added to the tailings, as well as a sodium silicate coating agent. These are to delay to onset of acid generation, but their effectiveness and effects on drainage water quality remains to be evaluated.

20.6.3.1 Kinetic Testing

Long-term kinetic tests are used to reproduce the weathering conditions and processes that would be expected in the field. These tests are generally carried out in laboratory by using humidity cells tests (HCT) or column tests. Long-term kinetic HCT tests designs, and procedures are standardized by ASTM standard D5744 (ASTM 2013) and are best suited to measure the long-term onset of acid drainage. However, HCT tests are not designed to predict water quality in terms of contaminant concentrations and physicochemical characteristics (pH, Eh, conductivity, acidity, alkalinity, etc.).

According to MELCC (2020), kinetic column tests are preferred to assess the leaching potential and water drainage quality. Long-term kinetic tests are strongly recommended to classify waste rocks and tailing as a) potentially leachable material (metals), b) potentially acid generating material or c) high-risk material (MELCC, 2020).

20.6.3.2 Humidity Cell Tests (2015-2016)

Humidity cell tests (HCT) were conducted by EcoMetrix (2016) over a period of 81 and 101 weeks on five (5) samples. These included three (3) composites of waste rock samples with neutralization potential (NPW) ranging from low (LNPW), medium (MNPW) and high (HNPW), plus one composite sample of low-grade ore (LGO) and one composite of tailings (EcoMetrix, 2016; Bernier, 2018). These tests were undertaken to evaluate the acid generation potential, the time to onset of acid mine drainage and the estimated seepage water metals and sulphate concentrations.

Based on short-term acid-base accounting (ABA) tests which calculate the balance between acid-production and acid-consumption properties of the materials, all tailings samples tested are either PAG (NP/AP < 1) or uncertain (NP/AP 1 - 2), meaning the tailings are potentially acidogenic on the long term (EcoMetrix, 2016). Onset of acid generation is estimated at 1.6 years for the tailings, 14.5 years for low-grade ore (Bernier, 2018). By comparison, a material with neutralization potential would have an onset ranging between 40 (LNPW) and 248 years (HNPW) for low and high NP.

Tests indicate that the initial pH of leachate waters from the five HCT are near-neutral to slightly alkaline (pH 6.4 to 8.2). For low grade ore, HNPW and tailings samples, pH remained rather stable for the 81 weeks of HC testing. However, leachates from the LNPW and MNPW samples show progressive acidification up to a pH of 5.0 and 5.2 respectively after 101 weeks.

For the purpose of mine materials management involving a filtered tailings pile surrounded by a waste rock berm, modeling indicates that metal content in Zn, Ni, Cu, Cd and Mn in HCT in leachate waters would exceed the groundwater protection criteria for near-neutral to slightly acid water conditions while sulphate concentrations should be lower than 0.1%. Consequently, tailings would classify as potentially leachable in such a storage configuration and metal concentrations in drainage water could increase following the acidification of the water in the mixed pile (Bernier, 2018).

20.6.3.3 Humidity Cell Tests (2018-19)

In 2018, Focus started testing the concept of buffering acid generation with the use of dolomitic marble amendment. Humidity cell testing was initiated over a 52-week period to test buffering PAG tailings and waste rocks by adding crushed dolomitic marbles from the Montagne-aux-Bouleaux dolomitic marble occurrence (100% Focus owned) located 12 km north of the Lac Knife deposit.

Four (4) cells were used for these HC tests. Cell CH-1 was filled with 100 % oxidized tailings (10.9 % Stotal) while dolomitic marble was mixed with oxidized tailings in cell CH-2 (8.6 % Stotal). The cell CH-3 was filled with 100 % fresh tailings (4.9 % Stotal) while dolomitic marble was mixed with fresh tailings in cell CH-4 (4.2 % Stotal). The pH of leachate waters varies from slightly alkaline to near-neutral for fresh tailings or was acidic and constant for oxidized tailings over the 52-week period. Addition of dolomitic marble to fresh and oxidized tailings allowed maintaining the pH near neutral between 7 and 8 during the 52-week period. (Bernier, 2020). Onset of acidification was increased from 0.07 to 6 years for oxidized tailings, and from 1 to 18 years for fresh tailings. However, DAOS modeling for various waste rock and tailings amendment scenarios with dolomitic marble indicates that the onset of mine acid generation can take as long as 75 years (Bernier 2020).

Based on metal and sulphate contents of leachates over 52 weeks, water quality was modelled according to EcoMetrix (2016) methods, with an amended and non-amended filtered tailings pile surrounded by a waste rock berm. Metals such as Fe, Zn, Ni, Cu, Cd, Ag, Mn, Se, and Pb were leached at concentrations exceeding the groundwater quality criteria and/or the discharge criteria to the final effluent. Sulphate (SO_4) concentrations in contact waters range from 7,509 mg/L (fresh tailings mixed with dolomite) to 37,398 mg/L (oxidized tailings mixed with dolomite). Water in contact with oxidized tailings mixed with dolomitic marble as well as water in contact with fresh tailings (with or without dolomitic marble) remained near neutral to slightly acidic. In contrast, the water in contact with oxidized tailings without dolomitic amendment was acidic, from t = 0 (Bernier, 2020).

Toxicity tests were carried out on Daphnia magna (Environment Canada method EPS1/RM/14), a small planktonic crustacean known as sensitive to metal contaminants. Leachate water from oxidized and fresh tailings amended with dolomite were non-lethal after 52 weeks, while those that were un-amended were lethal (Bernier, 2020).

20.6.4 Process Water Characterization

Process water was characterised using water from 2014 pilot plant metallurgical testing (SGS, 2014). It is assumed that this water would be representative of pore-water that would drain from the filtered tailings or would be purged in occasion from the mill into the water storage pond. Twenty-two (22) water samples from oxidized and fresh ore processing were characterised (Bernier, 2014;

Lamontagne, 2014). Process water from fresh ore processing is nearly neutral to slightly alkaline with pH from 7.47 to 8.24 and SO_4 concentrations between 40 mg/L and 90 mg/L. This contrasts with acidic process water from oxidized ore processing characterised by pH from 2.90 to 4.05 and SO4 concentrations between 240 mg/L and 381 mg/L. Regardless of the nature of tailings, thiosulphate, nitrates, fluoride, and chloride concentrations are low, but may not be fully representative of the process water at mine site, but still indicates that the process does not contaminate the water in these compounds.

Process water from oxidized tailings is characterised by Al, Zn, Ni, Cu, and Cd concentrations exceeding the groundwater Protection criteria, while none exceed such threshold for fresh ore proceed water. None of these water samples exceeded metal concentrations for final effluent discharge criteria of *Directive 019* (Lamontagne, 2014; Bernier 2014) and will require treatment prior to release to the final effluent.

Toxicity testing was conducted on fresh ore process water using Daphnia magna (Environment Canada method EPS1/RM/14) and rainbow trout (Environment Canada method EPS1/RM/13). and no toxicity was detected (Bernier 2014).

20.7 Mine Closure and Rehabilitation

At the end of the Project life, once mining operations have ceased completely, Focus will have to rehabilitate the mining site to its natural habitat. Rehabilitation aims at restoring the Lack Knife mine site to a state appropriate for use by adjacent communities including Fermont residents, First Nations and other future users of the territory.

20.7.1 REHABILITATION AND RECLAMATION

According to Article 232.1 of Québec Mining Act (QMA) (chapter M-13.1), Focus must provide a post-closure site rehabilitation and reclamation plan to the Minister for approval, set part of the required funds in trust and carry out the work provided for in the plan, in accordance to guidelines presented in the *Guide de préparation du plan de réaménagement et de restauration des sites minier*s *au Québec* (MERN, 2022). By submitting a plan, Focus commits to returning the affected land to a satisfactory state at the end of mining operations. Rehabilitation and reclamation work shall begin within three (3) years of closure and the obligation subsists until the work is completed or until a weaver is issued by the Minister (QMA Article 232.10).

According to Article 232.3 of the QMA, the rehabilitation and reclamation plan must include:

- The description of the rehabilitation and reclamation work relating to the mining activities conducted by Focus in order to restore the affected land to a satisfactory condition. Such work must include the rehabilitation and reclamation of accumulation areas including the containment work required to prevent any environmental damage that might be caused by the presence of tailings, waste rocks, overburden or ore. This shall include (Article 232.4, QMA, 2022).

- Soil characterization and decontamination
- Geotechnical soil, berms and pit stabilization;
- Dismantling and removal of buildings and infrastructure;
- Securing mining area including pit perimeter;
- Emergency plan and monitoring;
- A detailed estimate of costs to be incurred;
- Treatment of seepage water until proper quality is obtained;
- Road-related work.

- If progressive rehabilitation and reclamation work is possible, the conditions and phases of completion of the work until closure of mining activities;
- A detailed estimate of the expected costs to be incurred;
- In the case of an open pit mine, a backfill feasibility study.

As prescribed in the Mining Act, the restoration plan must be updated every five years or more frequently when the project is nearing closure. The updated plans shall consider changes that may occur with the development of the project and comments received.

Plans are underway to update the rehabilitation and reclamation plan for the Project during the first half of 2023.

20.7.2 Financial Guarantee

Prior to construction of a mine, proponents of projects must set aside in a trust account the monies needed to cover the reclamation and rehabilitation cost of the operation. An evaluation of cost is then required as part of the rehabilitation and reclamation plan. Article 232.4 of the QMA specifies that the guarantee must cover 100% of the anticipated cost of completing the work required under the rehabilitation and restoration plan all along the mining life. According to the Regulation about mineral substances other than petroleum, natural gas and brine (Chapter M-13.1, r. 2; Article 113 2022), this guarantee is submitted to the following rules:

- The guarantee must be submitted in three (3) payments;
- The first payment must be made within 90 days following receipt of approval of the plan;
- Each subsequent payment must be made on the anniversary date of approval of the plan;
- The first payment represents 50% of the total amount of the guarantee and the second and third payments, 25% each.

- Where property or a sum of money serves as guarantee, the property or money is exempt from seizure (QMA Article 232.4).

The minister may require other conditions and obligations to approve the rehabilitation and restoration plan, which approval is conditional to a favourable opinion from the MELCCFP (QMA Article 232.5).

20.7.3 Mine Closure and Reclamation Work

All site rehabilitation and reclamation work will follow the recommendations presented in the *Guide de préparation du plan de réaménagement et de restauration des sites miniers au Québec* (MERN, 2022).

20.7.3.1 Lac Knife Open Pit

As required by regulation, a cost-benefit analysis on the possibility of backfilling the pit at the end of the mine operation shall be undertaken during the permitting period (QMA Article 232.3 sub-article 5). This cost-benefit analysis will be presented in the final rehabilitation and reclamation plan submitted to the MRNF. Even if the approach seems sensible, numerous challenges are related to a successful back-filling plan, particularly regarding the geochemical stability of the disposed wastes, the reclamation of backfilled pit, the control of water flow and exchanges with the surrounding environment, and the operational aspects of waste disposal. The limited length of the pit compared to its depth would limit the feasibility of progressive backfilling of the pit, such as seen in other operations. Surface dumping in the pit may lead to geotechnical instabilities while bottom-up disposal would prohibitively increase the costs (Demers and Pabst, 2021). If cost-benefit analysis returns positive results, Focus shall backfill the pit with tailings, waste rock, residual ore and finally overburden material followed by revegetation.

If there are no technical, economic, or environmental benefits to backfilling, all access routes to the pit will be blocked, a fence will be erected around the pit and hazard warning signs will be posted around to promote safety. The pit will be gradually filled with water from precipitations and infiltration until it eventually reaches the water table level. Whenever possible, diverted streams will be rerouted to their original flow paths. Focus will monitor the short and long-terms geochemical and geotechnical stabilities of the ground surrounding the pit, which studies must be submitted to the MRNF (MERN, 2022).

20.7.3.2 Vegetation

Lands affected by mining activity, such as buildings, storage facilities, roads and embankments must be re-vegetated. For such activities, Focus will submit a report from a professional agronomist confirming that conditions are adequate to ensure the sustainability of the vegetation. Vegetation will consist of native shrubs, grasses, and trees, with locally sourced seeds and seedings free of weeds. Selected species shall be capable to withstand local harsh climate including anticipated climate changes, they shall have a sufficient degree of resistance to stress and have the capacity to establish themselves on mining waste, and have a good water retention capacity (Guittonny, 2021). Focus will seed sites where rapid revegetation is required to reduce erosion risks or areas that may be re-perturbed annually with perennial grasses in targeted areas (NewFields, 2022). Follow-up inspections will be conducted for several years after revegetating to evaluate the success and to correct any deficiencies.

20.7.3.3 Overburden Stockpile

As the site is cleared for pit and other infrastructure, overburden material made up of topsoil and vegetation matter will be removed and temporarily stockpiled to be used as topsoil for reclamation. Efforts will be made to minimise compaction while handling and storing. The stockpile will be shaped to minimise erosion while retaining soil structure (NewFields, 2022). Stripping and stockpiling of 3.0 Mm^3 of overburden material will be required by Year 21 of operations. The overburden stockpile will be located west of the pit and will extend over 13.6 ha or 136,000 m^2. It will consist of a superposition of benches 10 m high by 10 m wide reaching a maximum elevation of 70 m and an average slope of 26.6^o (2H:1V). Mineral overburden material and topsoil must be piled separately for subsequent uses.

A large part of the overburden will be used to progressively rehabilitate and cover the waste rocks and tailings and other obsolete infrastructure. Environmental characterization of stored soils is required prior to be recycled as topsoil on rehabilitated sites. Any soil that is contaminated could be stored in the FTSF according to the conditions set in the Certificate of Authorization issued by the MELCCFP. If an overburden stockpile remains at the end of the reclamation phase, Focus must demonstrate: 1) that this material is not contaminated by metals, chemicals and/or hydrocarbons and 2) that there is no risk of displacement of the soil pile before carrying out the revegetation.

20.7.3.4 Waste Rocks Dump

Rehabilitation work is to ensure the long-term chemical and geotechnical stabilities of tailings and waste rock facilities. For such, a geochemical characterization of waste rock and tailings will be conducted throughout the operation in accordance with *Directive 019* (MDDEP 2012), including monitoring of acid generation potential and metals leaching. Updates will be performed every five (5) years or for each revision of the restoration plan.

Waste rock and tailings will be stored into two separate facilities respectively located west and north-west of the pit, with the waste rock pile acting as a buttress for the tailings pile. More than 9.2 Mm^3 of PAG and NAG waste rocks is anticipated, piled into an area of 33 ha. (NewFields, 2022). As with the overburden stockpile, the waste rock dump will also have an overall slope of 26.6^o (2H:1V) and will consist of a superposition of benches 10 m high by 10 m wide benches. The maximum elevation will reach 60 metres high. Reclamation will consist of a 1 m thick cover of overburden material and 0.3 m of topsoil to provide a growth medium for revegetation.

20.7.3.5 *FILTEREDTAILINGS STORAGE FACILITY*

The FTSF will cover 4.6 ha. to enable dry stacking of 7.9 M tonnes of filtered residues. The FTSF will be contained by berms of non-PAG waste rocks for 2.05 Mm^3 and expected to reach a maximum height of 32 metres (average 16.6 m) with 26.6º (2H:1V) downstream slopes (NewFields, 2022). Closure and reclamation activities for the FTSF will include:

- Final regrading to support landform development;
- Capping with 0.5 metres of permeable sand (0.5 m);
- Installation of a geosynthetic liner system on the sand cap to limit infiltration of water into the pile and hence limit long-term acid generation. Another cap of 0.5 m of sand will cover the liner to protect it from damage or puncture;
- A final cover of 1 m of overburden material and 0.3 m of topsoil material to provide a growth medium for revegetation.

The site will be progressively rehabilitated during the course of operations.

20.7.3.6 *WATER STORAGE POND DAM AND DRAINAGE CHANNELS*

The water storage pond will be located approximately 400 m south of the FTSF and close to the southern limit of the waste rock dump. The dam will have a maximum height of 21 metres, with a crest elevation at 647 metres. Once water storage is no longer required to support site operations, the storage pond will be drained and reclaimed. Natural water drainage will be restored. Sludge and sediments that accumulated in the pond will be buried in the FTSF. Liner materials will be either removed and disposed of as per regulatory requirements or covered in place. Dam material and rip rap will be graded in place to conform with local topography and the site rehabilitated with topsoil and revegetated.

Drainage channels will be maintained to control runoff around the Project site, although graded to mimic natural drainage pathways and secured for long term and revegetated (NewFields, 2022).

20.7.3.7 *MINING EFFLUENT AND GROUNDWATER*

Mining effluents must comply with the discharge requirements of *MDDEP Directive 019* and the Regulation regarding Metal Mining Effluent (Laws and Justice Canada, 2022). The quality of groundwater around storage areas and hazardous installations must always comply with the protection requirements of the Directive 019 and can be monitored from the various wells.

Sludge from the water treatment plant is likely to be considered as hazardous waste and to be discarded, processed or solidified in a specialized commercially operated facility. Volume and composition of this sludge has not yet been characterised.

20.7.3.8 *Surface Infrastructure*

At the end of the mine's life, all supporting infrastructures including buildings, machinery, road, trails, sanitary facilities, instrumentation, material stockpiles and equipment will be dismantled and removed from the site. Access and secondary roads will be maintained in good condition until monitoring obligations are waived. Unless requested by other stakeholders, roads will then be scarified, landscaped, and revegetated. Roadbeds must be characterised to assess contamination prior to rehabilitation, in particular by petroleum hydrocarbons or metals. If contaminated, materials will be excavated and managed according to applicable regulations for contamination soils. Bridges and culverts will be removed, and ditches or trenches backfilled or stabilized.

Septic tanks must be emptied and filled with gravel, sand, earth, or an inert material, as specified in the Regulation in regards of respecting wastewater disposal systems for isolated dwellings (Chapter Q-2, r.22). The management of non-hazardous residual materials must be carried out according to the provisions of the Regulation in Regards of Respecting the Land filling and Incineration of Residual Materials or the Regulation on Hazardous Materials.

Efforts will be made to find new uses for buildings and equipment on site or in local communities. This includes, but is not limited to generators, transport equipment, crusher and conveyors, water treatment units, site buildings, storage sheds and other mine structures. Concrete slabs will be removed or broken and covered to enable growth of vegetation. Disturbed areas will be graded to conform to the local topography and revegetated. Backfilling and levelling of ditches and the implementation of wetlands in the collector basin footprint are planned.

20.7.4 Monitoring

Effluents and contaminants dispersion is to be monitored throughout operations and after closure. Important parameters such as meteorology, atmospheric dust dispersion, hydrology, hydrogeology, groundwater and final effluent quality and vegetation must be monitored before at the onset of operation and then until the post-closure phase. Post-closure environmental monitoring will confirm the effectiveness of the remediation approach and ensure the quality of the receiving environment and is required to obtain a waiver from authorities. No set time is indicated for such post-closure monitoring.

20.7.4.1 *Meteorological Parameters*

Meteorological parameters control the movement of water, air and heat in tailing and waste rock facilities (Bussière et al., 2021). In the context of mine reclamation, meteorological parameters required to be monitored include air temperature, relative humidity, precipitation (rain, snow), atmospheric pressure, and wind speed and direction. Even if governmental weather stations record these parameters on a regional basis, it is a best practice to install a weather station on the mine site. Since air temperature and precipitation could impact the sulphide oxidation process and the acid buffering capacity the dolomite amendment in the tailings pile and mine site, the weather station should be installed near the Project site.

20.7.4.2 *Atmospheric Sampling Stations*

Atmospheric sampling stations shall be installed in strategic locations indicated by air dispersion of dust particles modeling. These stations must be installed before the start of the construction in order to quantify background levels of dusting. Such background dusting can originate from other industrial and mining activities to the north and northwest. Such background is required to assess the contribution from Lac Knife mine operations and to determine if additional mitigation measures are required. Post closure monitoring will evaluate the effectiveness of the rehabilitation and revegetation of elevated sites such as the former tailing storage facility.

20.7.4.3 *Mine Water, Groundwater, and Final Effluent*

At closure, periodic sampling of surface water and groundwater will be required until reclamation is completed, and the site has stabilised. Through time, and depending on water quality, the frequency of water sampling will be scaled back and even abandoned at sites where water quality has reached background levels upon approval by relevant regulatory agencies.

According to Article 2.10 of MDDEP *Directive 019*, Focus will have to implement a monitoring program for the quality of groundwater and runoff water in the vicinity of the infrastructure. This program starts before construction and continues until the waiver certificate is issued by the MELCCFP. As tailings and/or some waste rocks are classified as PAG and leachable, they will potentially keep producing acid mine drainage and metal contaminants exceeding criteria recommended by regulation. For such, post-remediation monitoring shall be maintained over a minimum of ten (10) years.

Mine water and final effluent must be sampled eight (8) times per year. If acidic mine water is properly buffered by dolomite amendment, then drainage water from these facilities could be near-neutral to neutral with a pH close to 7. Even if some metals leached from tailings or waste rocks could still be present in such water, thus a contaminated neutral drainage (CND), post-remediation monitoring period could be reduced five (5) years, if authorized by the MELCCFP.

Observation wells located near infrastructure at risk of environmental contamination will be used for post-restoration monitoring. Water will be sampled six (6) times per year (Directive 019, Table 2.9), including in spring and at the end of summer for groundwater, and once (1) per quarter for runoff water. Required parameters are listed in sections 2.1.1.2 and 2.3.2.2 of Directive 019.

This monitoring program will be waived by MELCCFP once water quality is compliant with the requirements for over five (5) years in regard of acute toxicity and discharge, compliance groundwater quality requirements, compliance with the requirements issued from the certificate of authorization for the restoration work and observation of a decreasing trend in contaminant concentrations for the final effluent. The water treatment plant must be maintained in operation until long-term water quality is respected in final effluent.

20.7.4.4 *Vegetation*

Post-closure monitoring and maintenance of vegetation, including slope stability, is required for reclaimed and revegetated area. A revegetation monitoring program will be maintained for a minimum of five (5) years or until successful recolonization has been achieved over reclaimed and perturbed natural areas. Monitoring locations will be located according to a systematic distribution encompassing dominant post-closure habitats. Vegetation monitoring protocols will be adapted specific to the different habitat classes. The revegetation plan will be reviewed every five (5) years from project pre-development onward to account for any design changes and to include reference parcel studies to assess plant growth potential.

Once reclamation work is completed, monitoring for erosion and slope stability will be needed on a yearly basis for at least three (3) years after closure or until vegetation is established. Stability monitoring consists of visual inspections of the reclaimed FTSF area for any crest deformation or sagging, signs of slope movement or sliding, presence of cracks and to document any erosion features. FTSF embankments may not be considered as dam structures by authorities once closure activities are completed, meaning ongoing dam safety inspections might not be required, assuming no regulatory changes (NewFields, 2022).

20.7.5 Closure Costs

The closure costs have been developed and are included in Section 21.

20.7.6 By Products

As indicated in Québec Mining Act M-13.1, Chapter IV, Section IV, Article 234, the operation must ensure an optimisation of the recovery of mineral substance, collaterally meaning that any other mineral that can be economically recovered shall be so and hence not discarded in the tailings. Of the mineral assemblage identified in the current deposit, only graphite is of obvious economical interests.

Ultrafine graphite (-400 mesh) has been indicated as having no value in the market study (Benchmark 2022). However, some local markets might be identified for this material, such a reducing agent in manufacturing of iron ore pellets (IOC in Labrador City, ArcelorMittal in Port-Cartier or QIM in Pointe Noire), or as raw material for manufacturing of cathode for aluminium smelters (Alouette in Sept-Îles or Alcoa in Baie-Comeau). Although this might not be a significant source of income, it may improve the Project’s environment and social acceptability and should be pursued.

Pyrrhotite, which accounts for approximately 12% of the residues, does not have direct commercial value. Historically, roasting of pyrrhotite has been a source of sulphuric acid as well as of iron ore. Sulphuric acid is a low-value commodity which is costly to transport. Sulphuric acid production at Lac Knife has briefly been discussed and is deemed not economically feasible unless it could be consumed locally. Roasting residue would be ferric hydroxide (goethite) that can be mixed with other iron ores locally produced. An option would be to convert pyrrhotite to copperas (ferric sulphate heptahydrate), which can be used in water treatment plants, of for the manufacturing of electrolytic iron (ferrite, a high value commodity). Aside of generating revenues, recovery of pyrrhotite would eliminate the acid generation potential of the tailings, hence reducing operation costs. These options remain to be evaluated.

20.7.7 FIRST TRANSFORMATION

As indicated in Québec Mining Act M-13.1, Chapter III, Section V, Article 118.1, a preliminary economic study or a market study for a Québec-based transformation of the graphite concentrate into value-added product, such as sperulisation or graphene conversion, is required for the granting of the mining lease. This aspect is not covered by the FSU and shall be initiated in coming year.

21 CAPITAL AND OPERATING COSTS

The Project scope covered in this Report is based on the construction of a greenfield mining and processing facility with an average mill feed capacity of 365,320 tonnes per year of ore and producing 50,000 tonnes per year of graphite concentrate.

The capital and operating cost estimates related to the mine, the concentrator, and all required facilities and infrastructure have been developed by DRA or consolidated from external sources.

The estimate is based on DRA's standard methods applicable for a feasibility study to achieve an accuracy level of ± 15%. The effective calendar date for the cost estimate is Q4 2022. The estimate is expressed in Canadian dollars.

21.1 Capital Cost

21.1.1 Capital Cost Summary

The capital cost estimate (Capex) consists of the direct and indirect capital costs as well as contingency. Provision for sustaining capital is also included, mainly for tailings storage expansion. Amounts for closure and rehabilitation of the site and required working capital have been estimated as well.

21.1.1.1 Pre-production Initial Capital Cost

The pre-production initial capital cost for the scope of work is $236.9 M, of which $181.6 M is direct cost, $30.3 M is indirect cost and $25.0 M is contingency. A provision of $49.6 M is also required for sustaining capital which excludes the amounts for closure and rehabilitation of the site and working capital.

Table 21.1 presents a summary of the pre-production initial capital and the sustaining capital costs for the Project.

Table 21.1 – Summary of the Investment Capex Estimate

Description	Pre-Prod Initial Capex ($ M)	Sustaining Capex ($ M)	Total Investment Capex ($ M)
Direct Costs			
Mine Development – Pre-stripping	8.5	0.0	8.5
Mining Equipment and Facilities	18.8	18.9	37.7
Crushing and Concentrating	99.3	0.5	99.8
Tailings Storage and Water Management	22.3	30.2	52.5
Concentrate Storage and Handling	1.8	0.0	1.8

Description	Pre-Prod Initial Capex ($ M)	Sustaining Capex ($ M)	Total Investment Capex ($ M)
Infrastructure	11.0	0.0	11.0
Power and Communications	19.9	0.0	19.9
Sub Total Direct Cost	**181.6**	**49.6**	**231.2**
Indirect Costs			
EPCM	16.0	0.0	16.0
Owner's Costs	14.3	0.0	14.3
Sub Total Indirect Cost	**30.3**	**0.0**	**30.3**
Contingency	25.0	0.0	25.0
Total	**236.9**	**49.6**	**286.5**

The totals may not add up due to rounding.

21.1.1.2 *Closure and Rehabilitation Costs*

Based on site layouts, a provision of $10.0 M was estimated for the closure and rehabilitation of the mine site. Requirements were established and cost estimation was based on material take-off and unit rates from recent database.

The expenses were accounted for in the economic analysis according to the most recent Québec legislation as follows: $5.0 M will be spent as pre-production capital while $2.5 M will be spent in each of the 1st and 2nd years of production.

No provision is required for the dismantling and disposal of the industrial facilities as it is assumed that the costs will be compensated by the salvage value.

21.1.1.3 *Working Capital*

Requirements for Working Capital were estimated as three (3) months of operating expense to be maintained throughout the production period. A provision of $7.2 M is required at start of production and accounted for in the economic analysis.

21.1.2 Scope of the Capex

The capital cost estimate includes the material, equipment, labour, and freight required for the mine pre-development, mine service equipment, mine services and facilities, processing facilities, tailings storage and management, as well as all infrastructure and services necessary to support the operation.

21.1.2.1 *Major Assumptions*

Cost estimation is based on the Project obtaining all relevant permits in a timely manner to meet the Project schedule.

Hydro-Québec will provide the permanent power line in month 5 of construction for use as construction power, while in the meantime temporary power will be available from diesel generators.

21.1.2.2 *Major Exclusion*

The following items were not included in this Capex:

- Provision for inflation, escalation, currency fluctuations and interests incurred during construction is excluded.
- Project financing costs.
- All duties and taxes.

21.1.3 Basis of Estimate for Direct Capex

21.1.3.1 *Currencies*

Updated indices were used for quotations received before Q4 of 2022. The exchange rates used when quotations were received in foreign currencies are 1.00 CAD / 0.736 USD and 1.00 CAD / 0.68 EUR.

21.1.3.2 *Material Take-Off And Unit Rates*

All quantities generated for the estimate are mainly based on engineering material take-off (MTO) and deliverables which exclude contingencies of any kind. A design growth allowance of 10% for concrete and steel quantities only have been considered at the engineering level; no additional allowance for growth with respect to quantities and or pricing has been added at the estimation stage.

Based on quantities for each item, budget proposals for unit rates were obtained from qualified contractors for earthwork, concrete, structural steel and building cladding. The unit rates include the material, transportation, construction equipment and direct labour as described below. Budget provision for contractor's Mob/Demob and site management were also provided separately on the same basis and are accounted for in indirect costs as described further below.

21.1.3.3 *Construction Labour, Productivity Loss Factor*

For works other than earthwork, concrete, structural steel and building cladding, the labour costs were estimated based on labour hours and hourly rate as follows: the labour rate was developed for a typical crew from detailed tables of current rates developed by the Corporation des

Entrepreneurs Généraux du Québec and the Association de la construction du Québec. The all-inclusive hourly rate includes the basic hourly rates for the tradesman, social benefits and employer's burden, industrial site premium as required, direct supervision, small tools, personal protection equipment, consumables, and contractor's overhead and profit. Indirect supervision and site establishment as well as contractor's mobilization/demobilization are excluded from the hourly rate but are provided for as indirect costs in the construction contractor's site management provision as described further below.

The productivity loss factor was established in consideration of the working calendar, the work rotation, the climatic conditions, and remoteness of work site.

The working calendar was defined as one (1) shift per day, ten (10) hours per shift and seven (7) days per week for a total of 70 hours per week. Consequently, an average hourly rate was established at $175 which includes direct charges, indirect costs, and equipment costs.

Surveys showed that sufficient lodging would be available in Fermont or nearby; therefore, no construction camp was required, and the Québec construction regulations would apply. The provision for per diem allowances to cover room & board and traveling of workers is included in indirect costs as described further below.

In addition to the labour cost, a construction allowance based on delivered equipment cost was established from similar projects to cover for construction material, sub-contract and mobile cranes to be paid by the Owner; the middle range factor of 5.0% is applied.

General survey was performed with major qualified contractors to validate the basis for cost estimation of labour.

21.1.3.4 Contracting Strategy and Contractor's Costs: Mob/Demob & Site Management

Provisions have been included in the indirect costs for contractor's mob/demob and site management to cover for contractor's major equipment and supplies, including owned and rented construction equipment, vehicles and other facilities such as trailers, tool cribs, power panels, containers, maintenance of area, janitorial and clean-up. Special installation tools, cranes, scaffolding, cribbing and dunnage were also included as well as workplace weather protection. Worker's transportation within the construction site is also included.

Provisions also cover for construction contractor's site management including supervision and support staff such as administration and procurement, coordination and scheduling, quality and safety.

The estimate assumes that construction contracts will be attributed on the base of a competitive bidding process amongst qualified contractors. Availability of local qualified contractors and skilled workers is expected. It is also expected that an average level of site management, contract administration, quality control and adequate safety requirements will be required from the contractors by the construction management. A realistic construction schedule is also expected, as well as good site conditions, limited number of contractors on site, limited work outside in winter and also limited work required in overtime.

21.1.3.5 Freight, Duties and Taxes

Based on recent surveys and studies and when not included in the cost, the freight was accounted for by adding a factor to the value of the goods; a factor of 11% is applied.

All duties and taxes were excluded from the capital cost, but relevant factors were considered for the after-tax economic analysis.

21.1.3.6 Mining

The direct capital cost for the mine has been estimated using the following basis:

a. Mine Equipment

The direct capital cost for the mine covers the purchase of electric mining and support equipment.

b. Mine Development Cost

The mine development cost has been developed based on a mining operation by Owners forces and activities including activities that will be carried out during the six (6) month pre-production period to prepare the mine for operations. These activities include clearing and grubbing, topsoil removal, overburden stripping and the preparation of several ore faces.

c. Mine Haul Road Construction

The direct Capex for the mine includes the construction of 1,500 m of mine haul roads. These roads connect the pit to the crusher as well as the waste rock pile and overburden stockpile.

d. ROM Stockpile Membrane

Since the ore has the potential to be a generator of acid, the capital cost for the mine includes a provision to install an impermeable membrane at the base of the ore stockpile.

21.1.3.7 PROCESS

The process facilities include the crushing plant, the concentrator and the dry products handling as well as some ancillary facilities, services and systems such as reagents and flocculants preparation and distribution, compressed air, fresh water and dry tailings storage.

a. Process Buildings and Facilities

The crushing plant is enclosed in a conventional steel structure. The foundation as well as access platforms and crushing equipment structure and foundation cost estimation was based on material quantity take-off derived from preliminary design and budget unit prices from qualified contractors.

The process building includes the concentrator area, the product handling and storage area, some control and electrical rooms as well as the laboratory, the mechanical shop, some offices, a dry facility and lunchroom. The cost for the process buildings was estimated based on quantity take-off from mechanical layouts and unit cost obtained from qualified contractors. The cost estimation for interior finishes, tools and storage racking, furniture, accessories, and supplies was based on preliminary requirements and budget prices from industrial catalog or in-house database. All services were estimated as described further below.

b. Process Equipment

The process equipment list was derived from the flow sheets. For major equipment, based on data sheets, data tables or technical description, budget prices were obtained from qualified suppliers for more than 80% of the value. The remaining equipment was estimated from databases from recent similar projects or in house cost estimation.

Labour for installation of process equipment was estimated for each piece of equipment based on in house database or industrial publication. Provision was also added by factor to cover for special lift, sub-contract or construction material.

c. Piping and Pipelines

Process piping cost was established by factorisation on delivered process equipment based on recent similar projects. The tailings and water reclaim pipelines were estimated by sizing of the lines and unit prices from recent industrial cost estimation tables.

d. Electrical

Electrical equipment list and quantities were derived from the single line diagrams. Budget prices were obtained from qualified suppliers for major equipment or based on databases from recent projects. Quantities and costs for material as well as labour-hours were also established based on recent similar projects. Installation was estimated using hourly rate as described above.

e. Instrumentation

Instrumentation and automation material and equipment quantities were derived from the flow sheets. Budget prices were established based on databases from recent projects. Installation was estimated using hourly rate as described above.

f. Buildings Services and Supplies

Requirements were established for HVAC and Fire Protection; cost estimation was based on budget proposal obtained from qualified suppliers.

Preliminary requirements were also established for some tooling and storage racking, interior finishing and living quarter's supplies. Cost estimation was based mainly on recent industrial catalogues and on in-house databases.

21.1.3.8 Tailings Storage and Management Facilities

The tailings storage site was identified based on requirements and a design was performed. Material quantities were derived from the drawings and cost estimation was based on unit rates from recent similar projects.

21.1.3.9 Power Supply, Main Sub-Station and Communication Tower

Requirements were established for the main power line and the cost was estimated based on the DRA database and technical inquiries as planning study estimates by Hydro-Québec were not available.

Based on the power demand and site layout, requirements were established for the main sub-station and for the site distribution power lines. Equipment budget prices and costs for material and installation were established based on qualified suppliers budget proposal and in-house database from recent similar projects.

Requirements were also established for emergency power supply. A budget price was estimated based on qualified supplier budget proposal.

Requirements were also established for communication needs and costs estimates for a communication tower were based on budget proposal from qualified supplier.

21.1.3.10 Main Access to Mine Site and Site Roads

The estimate for the construction costs required for the main road to the mine site is based on topographical maps and assumes that the realigned Highway 389 from Fire Lake to Fermont is completed.

Other site roads to the tailings storage, to the explosive magazines and to the fresh water supply are also included. The unit cost derived from the above estimate and factored to account for reduced requirements was used to estimate the cost of the site roads.

21.1.3.11 Infrastructure: Site Preparation and Drainage

Site Preparation and Drainage include clearing and grading of the industrial site as well as drainage ditches and collection ponds for water management. Required area is available for vehicles parking.

Cost estimates were established based on quantities derived from general layouts and budget unit prices obtained from qualified contractors or in-house database.

21.1.3.12 Infrastructure: Ancillary Buildings, Facilities and Service Vehicles

Ancillary buildings and facilities include the Gate House, the Administration Building, a Cold Warehouse, products storage and service vehicles. A designated area is also provided for the mine vehicle garage to be installed.

Requirements were established for the administration building and the gate house and budget proposal were obtained from a qualified supplier. The proposal includes all required services, equipment and furniture.

The cold warehouse is a light structure fabric building. Cost estimation is based on a budget proposal obtained from a qualified supplier. The proposal includes all required services and accessories. The foundation cost estimation was based on material quantity take-off derived from preliminary design and budget unit prices from qualified contractor.

Two dome structures are added to store finished product ready for transportation to its required destination.

Requirements were established for Service vehicles and equipment necessary for the operation. An allowance based on budget proposal from qualified suppliers or in-house database was provided for the following electric vehicles:

- Light vehicles include three (3) pick-up trucks and two buses, one (1) 70 passenger and one (1) 30 passenger for daily transport to town.
- Material handling electric vehicles include one (1) 27 t boom-truck, four (4) forklifts, one (1) scissor lift and one (1) 60 ft articulated manlift.
- Emergency vehicles includes only one (1) rescue truck since the mine site is close to town.

21.1.3.13 Infrastructure: General Services

General Services include the Fresh water and Fire Water supply systems and the Sanitary Waste disposal facilities.

Fresh water will be pumped from Lac Knife to feed the process and the fire water tank. The freshwater system includes the pumping station and pumps, the freshwater tank and the distribution pumps to the potable water treatment system, to the process water tank and to the gland seal water tank. One electrical pump and a jockey pump as well as one diesel pump will ensure supply of water to fire protection systems. All equipment is included and estimated with the process equipment while the fire loop cost estimate is included in the fire protection budget proposal as described above.

Sanitary Waste treatment includes the waste treatment package system sized for 100 persons. The cost estimation is based on budget proposal obtained from a qualified supplier.

Solid wastes will be transported periodically to Fermont.

21.1.4 Basis of Estimate for Indirect Costs

21.1.4.1 Summary of Indirect Costs

The indirect cost covers for the following major items as detailed here under: Project Development, EPCM, Owner's costs and Personnel and Contractor's Logistics.

The provisions for indirect costs were established by detailed cost estimation of the items based on requirements and budget proposals from qualified suppliers or contractors, in-house database from recent similar projects or estimated allowances.

21.1.4.2 Scope And Basis Of Estimation Of The Indirect Costs

Project Development includes provisions for a new clubhouse for the snowmobile club, independent review of the Project as well as for geotechnical and metallurgical studies. Cost estimation is based on allowances established from recent similar projects. No provisions are required for permitting, exploration drilling or condemnation drilling; these expenses are considered as already incurred at this stage of the project.

EPCM includes Detailed Engineering, Procurement and Construction Management as well as Commissioning Assistance and Site Assistance. Estimation of the cost is based on recent similar projects. Transportation and room and board are included in personnel and contractor's logistics below.

Owner's costs include spares and consumables, dry and wet commissioning, construction site costs owner's costs and owner's project team and services.

- Spares and consumables include Capital and Commissioning Spare Parts, liners and media as well as First Fills for fuels, oil and lubricants. Cost estimation for the spare parts is based on factors, while liners, media and first fills cost estimation is based on requirements and unit costs. No provision is included for mining equipment since the mining will be executed by a contractor.

- Dry and Wet Commissioning includes Vendors Representative and contractor's workers. Cost estimation is based on requirements and unit hourly rates. No provision is included for rework.
- Construction site owner's costs include site power, temporary facilities, and a batch plant as well as road maintenance, site security and QA/QC. Cost estimation is based on requirements and unit costs. No construction camp is required since all lodging will be in nearby towns.
- Owner's project services & project team include site management personnel (namely health and safety personnel, nurse and owner's management team), pre-production operation group (namely production personnel hired before the beginning of production), as well as provision for project insurance, training and manuals. The cost estimation for the site management personnel is based on requirements and unit costs. The cost estimation for pre-production operation group is based on two months of production manpower. The provision for insurance is based on a factor while the provision for training and manuals is based on an allowance.
- It is assumed that legal fees will be covered by corporate and that no bonus to consultants or contractor is required. Also, no provision for royalties or NSR buyout is required. Provision for freight is included in the direct cost as detailed above.

Personnel and contractor's logistics include room and board and on-site transportation for all personnel on site during construction as well as contractor's mob/demob and site management costs. The cost estimation for the room and board and transportation is based on personnel requirements on site during construction and the compensation for traveling expenses of the Québec collective agreements general rule for distance more than 120 km.

21.1.5 Contingency

A provision of $25.0 M is included to initial capital for contingency, based on the level of development stage of the Project as well as assessment of residual risk listed in the risks register.

To meet the budget established for the Project in this estimate, it is expected that sufficiently developed engineering, adequate project management, realistic construction schedule and appropriate controls will be implemented at the realisation stage.

21.1.6 Sustaining Capital Expenditures

A provision of $49.5 M was estimated for sustaining capital and includes namely:

- $18.9 M to replace the mine equipment over the life of mine.
- $0.5 M for capital expenditures during the operations phase.
- $30.2 M to gradually expand the tailings storage facilities during the mine life.

For the mine equipment, the costs were estimated based on suppliers pricing. The cost estimation for the tailings storage facilities expansion was based on quantity take-off and unit prices as for the initial construction.

21.2 Operating Cost

This section provides information on the estimated operating costs (Opex) of the Project and covers Mining, Processing, Site Services and Administration. The sources of information used to develop the operating costs include in-house databases and outside sources particularly for materials, services and consumables. All amounts are in Canadian dollars (CAD), unless specified otherwise.

21.2.1 Summary Opex

The life of mine average Opex estimate, given as dollar per tonne of concentrate, is summarised in Table 21.2.

Table 21.2 – Summary of LOM Average Opex

Area	Avg Opex ($/t of conc.)
Mining	129.77
Processing and Tailings	330.82
Tailings Cost	4.38
Plant Administration, Infrastructure & Tech. Serv.	95.78
Total Average Operating Costs	**560.75**

21.2.2 Summary of Personnel Requirements

Table 21.3 presents the estimated personnel requirements for the Project. This workforce is comprised of staff as well as hourly employees. Supervisory personnel as well as the administration employees will work on a 5 days per week basis.

The hourly workforce at the plant will work on rotation to provide 24 hour per day coverage, 7 days per week. It is assumed that all employees will come from the area.

Table 21.3 – Total Personnel Requirement

Area	Number
Mining	30
Processing	60
Plant Administration, Infrastructure & Tech. Serv.	19
Total Manpower	**109**

The above personnel costs are detailed in the following sections.

21.2.3 Mining Opex

The mine Opex was estimated based on Owner furnished equipment, materials and mine operators and based on the annual mine plans.

Table 21.4 presents the unit rates that were applied to the tonnages for each period of the mine plan to arrive at the total expenditures for the mine operations. These rates include the supply of explosives, equipment maintenance and surveying services.

Table 21.4 – Mining Opex

Activity	Unit	Avg Opex ($/t of conc.)
Fuel	$/t	18.32
Tires	$/t	2.28
Repair / Parts	$/t	16.66
Explosives	$/t	14.15
Manpower	$/t	78.26
Clearing	$/t	0.10
Total Average Annual Mining		**129.77**

The mine operating cost also accounts for the salaries that will be paid to the mine's owners team which includes the Mine Superintendent, a Mining Engineer and a Geologist. This team is required to supervise the workforce and to provide engineering and geology support.

Table 21.5 presents a summary of the mine Opex by type of material.

Table 21.5 – Summary of Estimated Mine Opex by Type of Material

Type of material	Avg Annual Cost ($)	Total ($/t mined)	Total ($/t conc.)	Total (%)
Overburden	16,950,881	4.61	13.10	10.09
Ore	49,103,632	5.27	37.94	29.24
Waste	101,867,991	5.36	78.73	60.67
Total	**167,922,504**	**15.24**	**129.77**	**100.0**

21.2.4 Ore Processing Operating Costs

For a typical year, the estimated initial ore processing annual operating costs for the plant production of 50,000 t/y of graphite concentrate are summarised in Table 21.6 which shows the breakdown by the seven major components; labour costs, electrical power costs, grinding media and reagents costs, consumables costs, bagging system costs, material handling costs and spare parts and miscellaneous costs. These costs were derived from supplier information or DRA experience.

Table 21.6 – Summary of Estimated Annual Initial Process Plant Operating Costs

Operating Cost Area	Cost /year ($)	Cost ($/t of mill feed[1])	Cost ($/t of graphite concentrate[2])	Total Costs (%)
Manpower	7,055,875	19.31	147.67	44.6
Electrical Power	2,349,332	6.43	49.17	14.8
Grinding Media and Reagent consumption	1,574,505	4.31	32.95	9.9
Dryer Fuel Consumption (Electric)	0	0	0	0
Consumables consumption	2,238,436	6.13	46.85	14.1
Bagging System	1,899,581	5.20	39.76	12.0
Material Handling	172,025	0.47	3.60	1.1
Spare parts and miscellaneous[3]	557,573	1.53	11.67	3.5
Total Operating Cost	**15,847,327**	**43.38**	**331.67**	**100.00**

1) Based on Mill throughput of 365,320 tonnes per year.
2) Based on Graphite production of 47,781 tonnes per year.
3) Spare parts estimated as 1.5% of total equipment capital cost.

21.2.4.1 *Electrical Power Costs*

Electrical power is required for the equipment in the process plant such as: crushers, grinding mills, conveyors, screens, pumps, agitators, dry screening, bagging system, services (compressed air and water), etc. The unit cost of electricity was established at $ 0.053/kWh. The total annual operational electrical kW hours consumption is estimated at 44,327,017 kW which results in a 121.34 kW hours per tonne.

21.2.4.2 *Grinding Media and Reagent Consumption Costs*

The grinding mills will need a regular addition of balls to replace the worn media and exercise proper grinding action on the material. The media consumption has been estimated based on steel consumption observed in similar operations and the abrasion indices and power consumption. SAG mill grinding balls are added by an automated system to reduce the grinding ball consumption. In general grinding balls are added every day to maintain the steel load in the mills. Approximately 489 tonnes of grinding balls are required for the mill operation.

Fuel oil and MIBC are the reagents required for flotation and flocculant is required for thickener operation. Lime will be added to tailings as required.

The total cost for grinding media is $1.343.457 per year and $231,049 for the reagents for the process plant or $32.95 per tonne of concentrate produced.

21.2.4.3 Consumables Costs

The consumption and cost for the Jaw crusher liners, screen deck panels, grinding mill liners, polishing mill liners, flotation cell wear parts, pump wear parts, filter cloths, dryer wear parts, etc. for different equipment was obtained from the equipment suppliers and from experience with similar operations. The cost of consumables and wear parts are estimated at $ 2,238,436 per year or $ 46.85 per tonne of concentrate produced.

21.2.4.4 Bagging System Costs

The consumption and cost for the bagging system was obtained from the equipment suppliers. The cost of consumables and wear parts are estimated at $1,899,584 per year or $39.76 per tonne of concentrate produced.

21.2.4.5 Material Handling Costs

The operating costs for the Skid Steer Loader and Forklifts represent the repairs and tires only. This equipment will be electric and therefore, carbon free. The total cost for material handling at the process plant is estimated at $1729,025 per year or $3.60 per tonne of concentrate produced.

21.2.4.6 Spare parts and Miscellaneous Costs

the spare parts and miscellaneous costs were estimated as 1.5% of the total equipment capital cost. The total spares and miscellaneous costs are estimated at $ 557,573 per year or $ 11.67 per tonne of concentrate produced.

21.2.5 Plant Administration and Technical Services Costs

This section regroups the costs for personnel related to Administration & Accounting, Purchasing & Stores and Human Resources, as well as Material & Technical Services, and Power for Heating. The operating cost summary, for a typical year, is $4,590,872. No requirement for catering for this Project since the personnel will be living in the nearby towns.

22 ECONOMIC ANALYSIS

22.1 General

The economic/financial analysis of the Lac Knife Project is based on fourth quarter 2022 price projections in U.S. currency and cost estimates in Canadian currency. An exchange rate of $0.736 USD per CAD is assumed to convert USD market price projections and particular components of the pre-production capital cost and operating cost estimates into CAD. The annual cash flow model prepared in Microsoft Excel is based on a graphite concentrate production rate of 50,000 tonnes per year. No provision is made for the effects of inflation. The evaluation is carried out on a 100%-equity basis. Current Canadian tax regulations are applied to assess the corporate tax liabilities while the recently proposed regulations in Québec (Bill 55, December 2013) are applied to assess the mining tax liabilities.

The model reflects the base case macro-economic and technical assumptions given in this report and assumes that the owner will rely on a mining contractor to provide and operate the mining equipment.

22.2 Assumptions

22.2.1 Price

The prices used for the economic analysis are based on a market study and price forecasts that were provided by Benchmark Mineral Intelligence. More details are provided in Section 19 of this Report.

Based on this information, Focus has provided the price forecasts given in Table 22.1 for the Lac Knife graphite concentrates. The sensitivity analysis examines a range of prices that are 30% above and below the base case prices.

Table 22.1 – Graphite Concentrate Price Forecasts

Product Classification	Proportion (%)	Average Grade (% Cg)	Annual Tonnage	Price (USD/t)
+48 mesh	10.0	99.7	5,000	2,040
-48 + 80 mesh	23.0	99.7	11,488	1,868
-80 +150 mesh	31.3	99.4	15,655	1,762
-150 + 400 mesh	31.3	97.0	15,638	1,579
-400 mesh to tailings	4.4	86.8	2,219	0
Total Production	100.0	98.2	50,000	-
Total Salable Product	95.6	98.7	47,781	1,679

22.2.2 Macro-Economic Assumptions

The main macro-economic assumptions used in the base case are given in Table 22.2.

Table 22.2 – Macro-Economic Assumptions

Item	Unit	Base Case Value
Exchange Rate	USD/CAD	$0.736
Discount Rate	% per year	8
Discount Rate Variants	% per year	6 & 10

The USD exchange rate is used to convert the USD market price projections into Canadian currency. Relevant components of the pre-production capital cost and operating cost estimates have been converted into CAD using this exchange rate as well.

The current Canadian tax system applicable to mining income is used to assess the Project's annual tax liabilities. This consists of federal and provincial corporate taxes as well as provincial mining taxes as per Bill 55 that was proposed in December 2013. The gradual transfer of preproduction development expenses from Canadian Exploration Expenses to Canadian Development Expenses and the phasing out of Class 41A accelerated depreciation announced in the 2013 federal budget are accounted for. The federal and provincial corporate tax rates currently applicable over the Project's operating life are 15.0% and 11.9% of taxable income, respectively. The marginal tax rates applicable under the recently proposed mining tax legislation in Québec (Bill 55, December 2013) are 16%, 22% and 28% of taxable income and depend on the profit margin.

The assessment is carried out on a 100%-equity basis. Apart from the base case discount rate of 8%, two variants of 6 and 10% are used to determine the net present value of the Project. These discount rates represent possible costs of equity capital.

22.2.3 Mineral Royalties

The Project is not subject to mineral royalties.

22.2.4 Technical Assumptions

The main technical assumptions used in the base case are given in Table 22.3.

Table 22.3 – Technical Assumptions

Description	Unit	Value
Total Ore Mined (LOM)	M tonnes	9.310
Average Ore Mined per Year	t/y	365,320
Average Stripping Ratio		2.6
Nominal Processing Rate	t/d	1,001
Mine Life	years	27
Average ROM Grade to Mill	% Cg	14.97
Average Concentrate Grade	% Cg	97.8
Average Process Recovery over Mine Life	%	90.74
Average Tonnes of Concentrate Produced per year	t/y	47,781
Total Tonnes of Concentrate Produced over Mine Life	M tonnes	1.237

On average, 365,320 tonnes of run of mine ore will be supplied per year to the concentrator when full production is reached. The amount of concentrate produced is a function of head grade, process recovery and concentrate grade, and is on average 47,781 tonnes per year.

22.3 Financial Model and Results

A summary of the base case cash flow results is given in Figure 22.1.

This summary indicates total concentrate sales revenue of $2,953.4 M. With total concentrate transportation cost from the mine site to Eastern seaport, North America of $194.1 M, the revenue at the mine site amounts to $2,759.3 M.

The total operating cost (i.e. the sum of mining, process and G&A costs) is estimated at $701.5 M for the life of the mine. This amounts to $560.75 / tonne of concentrate.

The pre-production capital expenditure was estimated at $236.9 M and the total sustaining capital requirement was estimated at $49.6 M, for a total capital expenditure over the Project life of $286.5 M.

The cash flow statement shows a capital cost breakdown by area and provides a capital spending schedule over a 2-year pre-production period.

Figure 22.1 – Cash Flow Statement

Year			-4	-3	-2	-1	1	2	3	4	5	6	7	8	9
Mineralisation (t)			0	0	0	0	274,213	322,900	305,443	347,094	343,484	360,458	347,376	326,362	327,223
Waste (t)			0	0	0	50,649	239,619	305,851	130,036	269,154	535,483	609,060	870,894	714,866	474,805
Overburden (t)			0	0	0	1,028,317	245,718	36,671	600,657	420,008	157,556	66,740	137,821	102,152	334,219
Total Material Mined (t)			0	0	0	1,078,966	759,550	665,422	1,036,136	1,036,256	1,036,523	1,036,259	1,356,092	1,143,381	1,136,247
Stripping Ratio (w : o)						0.000	1.770	1.061	2.392	1.986	2.018	1.875	2.904	2.503	2.472
Mineralisation Processed (t)							274,213	322,900	305,443	347,094	343,484	360,458	347,376	326,362	327,223
Grade (% Cg)							17.97	16.56	17.37	15.55	15.64	15.02	15.40	16.34	16.30
Process Recovery (%)							92.6	91.9	92.3	91.2	91.3	90.8	91.1	91.7	91.7
Concentrate Production (t)	Grade (% Cg)	97.8%				0	46,661	50,207	50,087	50,341	50,137	50,277	49,823	50,027	50,015
Less Transport Losses (t)		0.00%					0	0	0	0	0	0	0	0	0
Concentrate for Sale (t)							46,661	50,207	50,087	50,341	50,137	50,277	49,823	50,027	50,015
Concentrate Inventory Level (t)		0					0	0	0	0	0	0	0	0	0
Concentrate Sold (t)							**46,661**	**50,207**	**50,087**	**50,341**	**50,137**	**50,277**	**49,823**	**50,027**	**50,015**
Basket Content (t)	+48 mesh product	10.0%					4,666	5,021	5,009	5,034	5,014	5,028	4,982	5,003	5,001
	-48+80 mesh product	23.0%					10,732	11,548	11,520	11,579	11,531	11,564	11,459	11,506	11,503
	-80+150 mesh product	31.4%					14,652	15,765	15,727	15,807	15,743	15,787	15,644	15,709	15,705
	-150+400 mesh product	31.2%					14,558	15,665	15,627	15,707	15,643	15,686	15,545	15,609	15,605
							44,608	**47,998**	**47,883**	**48,126**	**47,931**	**48,065**	**47,631**	**47,826**	**47,814**
	Forecast Source	BMI													
Basket Sales Price (USD/t, FOB ENA Port)	Premium	None					**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**
Concentrate Sales ($, FOB ENA Port)							106,480,711	114,572,876	114,299,038	114,879,461	114,412,570	114,732,043	113,696,655	114,162,653	114,133,884
Mine-Port Concentrate Transport Costs ($)	$/tonne	150.00					6,999,154	7,531,065	7,513,065	7,551,217	7,520,528	7,541,527	7,473,470	7,504,100	7,502,209
Total Sales – FOB Mine Site ($)							99,481,557	107,041,811	106,785,973	107,328,244	106,892,042	107,190,516	106,223,185	106,658,552	106,631,674
Total Revenue ($)	Base Case						99,481,557	107,041,811	106,785,973	107,328,244	106,892,042	107,190,516	106,223,185	106,658,552	106,631,674
Total Revenue ($)	Indexed for Sensitivity						**99,481,557**	**107,041,811**	**106,785,973**	**107,328,244**	**106,892,042**	**107,190,516**	**106,223,185**	**106,658,552**	**106,631,674**
Mining Costs ($)	$/year (see LoM Schedule)						5,052,587	5,023,610	5,308,938	5,423,346	5,633,863	5,744,898	6,412,337	6,111,103	5,978,748
Processing Costs ($)	$/t milled	43.38					11,895,343	14,007,421	13,250,106	15,056,923	14,900,343	15,636,659	15,069,190	14,157,603	14,194,933
Tailings Transport Costs ($)	$/year (see LoM Schedule)						210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000
Site Services Costs	$/year (see LoM Schedule)						0	0	0	0	0	0	0	0	0
G & A Costs	$/year	4,590,872					4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872
Municipal Taxes ($)	$/year	0					0	0	0	0	0	0	0	0	0
Interest on Letter of Credit & Purchase Financing ($)					0	0	0	0	0	0	0	0	0	0	0
Third-party Royalty / IBA Payments ($)		0.00%													
Total Operating Costs ($)	Base Case				0	0	21,748,802	23,831,903	23,359,915	25,281,141	25,335,078	26,182,430	26,282,399	25,069,578	24,974,553
Total Operating Costs ($)	Indexed for Sensitivity				**0**	**0**	**21,748,802**	**23,831,903**	**23,359,915**	**25,281,141**	**25,335,078**	**26,182,430**	**26,282,399**	**25,069,578**	**24,974,553**
Operating Profit ($)					**0**	**0**	**77,732,755**	**83,209,908**	**83,426,057**	**82,047,103**	**81,556,964**	**81,008,086**	**79,940,787**	**81,588,974**	**81,657,122**
Mine Pre-production Capital Expenditure ($)															
Mine Development – Pre-stripping					0	8,470,167	0								
Mining Equipment and Facilites					7,443,615	17,368,435	0								
Crushing and Concentrating					39,309,724	91,722,688	0								
Tailings Storage and Water Management					8,830,081	20,603,522	0								
Concentrate Storage and Handling					692,865	1,616,684	0								
Infrastructure					3,634,931	10,904,792	0								
Power and Communications					7,860,844	18,341,969	0								
PARTICIPATION IN THIRD-PARTY ASSETS															
ROYALTY BUY-OUT OPTION															
Total	Base Case				59,911,215	150,686,289	0								
Total	Indexed for Sensitivity				67,772,059	169,028,258	0								
Residual Value ($)	Processing Assets	0.0%													
Working Capital ($)	Months of Annual Operating Costs	3.00				7,186,989	653,753	-122,497	489,844	5,812	217,088	7,978	-295,547	-24,229	127,591
Sustaining Capital Expenditures ($)															
Mining Equipment							0	0	0	0	0	0	1,017,700	0	0
Mining Facilities							0	0	0	0	1,660,331	0	0	0	0
Processing Assets							0	0	0	0	500,000	0	0	0	0
Tailings & Water Management							0	0	0	0	0	14,141,158	0	0	0
Total Sustaining Capital Expenditure	Base Case						0	0	0	0	2,160,331	14,141,158	1,017,700	0	0
Total Sustaining Capital Expenditure	Indexed for Sensitivity						0	0	0	0	2,160,331	14,141,158	1,017,700	0	0
Total Capital Expenditure ($)			0	0	**67,772,059**	**176,215,247**	**653,753**	**-122,497**	**489,844**	**5,812**	**2,377,419**	**14,149,136**	**722,153**	**-24,229**	**127,591**
Mine Rehabilitation Trust Fund Payments ($)			**0**	**0**	**0**	**5,000,000**	**2,500,000**	**2,500,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Mine Closure Costs ($)			0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Corporate Income Tax	Proportions of Total	33.0%	0	0	0	0	1,641,422	5,678,995	7,057,523	7,653,514	8,201,310	8,467,013	8,414,448	8,956,146	9,238,689
Provincial Corporate Income Tax		25.3%	0	0	0	0	0	0	902,677	8,425,768	8,199,501	7,920,542	7,437,731	7,690,083	7,697,930
Quebec Mining Tax		41.7%	0	0	0	0	266,464	2,997,178	6,605,677	8,779,552	9,986,911	9,893,587	10,799,357	12,132,828	12,779,208
Total Corporate Income and Mining Taxes ($)	**Total**	100.0%	**0**	**0**	**0**	**0**	**1,907,886**	**8,676,173**	**14,565,877**	**24,858,834**	**26,387,722**	**26,281,143**	**26,651,536**	**28,779,058**	**29,715,827**
PRE-TAX CASH FLOW			**0**	**0**	**-67,772,059**	**-181,215,247**	**74,579,002**	**80,832,405**	**82,936,213**	**82,041,291**	**79,179,545**	**66,858,950**	**79,218,634**	**81,613,203**	**81,529,531**
Cumulative P-T CF				0	-67,772,059	-248,987,306	-174,408,304	-93,575,899	-10,639,687	71,401,605	150,581,150	217,440,100	296,658,734	378,271,938	459,801,469
Payback period work area						1.00	1.00	1.00	1.00	0.13	0.00	0.00	0.00	0.00	0.00
AFTER-TAX CASH FLOW			**0**	**0**	**-67,772,059**	**-181,215,247**	**72,671,116**	**72,156,231**	**68,370,336**	**57,182,457**	**52,791,824**	**40,577,807**	**52,567,098**	**52,834,146**	**51,813,703**
Cumulative A-T CF				0	-67,772,059	-248,987,306	-176,316,190	-104,159,959	-35,789,623	21,392,834	74,184,658	114,762,465	167,329,563	220,163,709	271,977,412
Payback period work area						1.00	1.00	1.00	1.00	0.63	0.00	0.00	0.00	0.00	0.00

Year	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Total
Mineralisation (t)	336,528	333,334	364,971	364,999	356,170	350,790	354,982	354,982	354,982	354,982	354,982	364,758	364,758	364,758	364,758	364,758	325,198	325,198	**9,310,441**
Waste (t)	460,246	461,431	637,180	480,673	568,383	830,257	1,150,826	1,150,826	1,150,826	1,150,826	1,150,826	948,647	948,647	948,647	948,647	948,647	468,372	468,372	19,072,697
Overburden (t)	339,424	341,470	133,921	290,661	211,759	205,038	9,888	9,888	9,888	9,888	9,888	158	158	158	158	158	0	0	4,702,358
Total Material Mined (t)	1,136,198	1,136,234	1,136,072	1,136,334	1,136,312	1,386,086	1,515,695	1,515,695	1,515,695	1,515,695	1,515,695	1,313,563	1,313,563	1,313,563	1,313,563	1,313,563	793,571	793,571	**33,085,496**
Stripping Ratio (w : o)	2.376	2.409	2.113	2.113	2.190	2.951	3.270	3.270	3.270	3.270	3.270	2.601	2.601	2.601	2.601	2.601	1.440	1.440	**2.554**
Mineralisation Processed (t)	336,528	333,334	364,971	364,999	356,170	350,790	354,982	354,982	354,982	354,982	354,982	364,758	364,758	364,758	364,758	364,758	325,198	325,198	**9,310,441**
Grade (% Cg)	15.90	16.08	14.77	14.77	15.12	15.35	14.98	14.98	14.98	14.98	14.98	13.26	13.26	13.26	13.26	13.26	13.15	13.15	**14.97**
Process Recovery (%)	91.4	91.6	90.7	90.7	90.9	91.1	90.8	90.8	90.8	90.8	90.8	89.4	89.4	89.4	89.4	89.4	89.3	89.3	**90.74**
Concentrate Production (t)	50,045	50,195	49,987	49,984	50,045	50,156	49,377	49,377	49,377	49,377	49,377	44,242	44,242	44,242	44,242	44,242	39,059	39,059	**1,294,200**
Less Transport Losses (t)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concentrate for Sale (t)	50,045	50,195	49,987	49,984	50,045	50,156	49,377	49,377	49,377	49,377	49,377	44,242	44,242	44,242	44,242	44,242	39,059	39,059	1,294,200
Concentrate Inventory Level (t)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Concentrate Sold (t)	**50,045**	**50,195**	**49,987**	**49,984**	**50,045**	**50,156**	**49,377**	**49,377**	**49,377**	**49,377**	**49,377**	**44,242**	**44,242**	**44,242**	**44,242**	**44,242**	**39,059**	**39,059**	**1,294,200**
Basket Content (t) +48 mesh product	5,004	5,020	4,999	4,998	5,005	5,016	4,938	4,938	4,938	4,938	4,938	4,424	4,424	4,424	4,424	4,424	3,906	3,906	129,420
-48+80 mesh product	11,510	11,545	11,497	11,496	11,510	11,536	11,357	11,357	11,357	11,357	11,357	10,176	10,176	10,176	10,176	10,176	8,984	8,984	297,666
-80+150 mesh product	15,714	15,761	15,696	15,695	15,714	15,749	15,504	15,504	15,504	15,504	15,504	13,892	13,892	13,892	13,892	13,892	12,265	12,265	406,379
-150+400 mesh product	15,614	15,661	15,596	15,595	15,614	15,649	15,406	15,406	15,406	15,406	15,406	13,803	13,803	13,803	13,803	13,803	12,186	12,186	403,790
	47,843	**47,987**	**47,787**	**47,785**	**47,843**	**47,949**	**47,204**	**47,204**	**47,204**	**47,204**	**47,204**	**42,295**	**42,295**	**42,295**	**42,295**	**42,295**	**37,341**	**37,341**	**1,237,255**
Basket Sales Price (USD/t, FOB ENA Port)	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	**1,679.56**	
Concentrate Sales ($, FOB ENA Port)	114,202,953	114,546,221	114,070,434	114,064,149	114,204,033	114,456,717	112,677,905	112,677,905	112,677,905	112,677,905	112,677,905	100,960,049	100,960,049	100,960,049	100,960,049	100,960,049	89,133,278	89,133,278	**2,953,370,727**
Mine-Port Concentrate Transport Costs ($)	7,506,749	7,529,313	7,498,039	7,497,626	7,506,820	7,523,430	7,406,506	7,406,506	7,406,506	7,406,506	7,406,506	6,636,271	6,636,271	6,636,271	6,636,271	6,636,271	5,858,878	5,858,878	194,129,954
Total Sales – FOB Mine Site ($)	106,696,204	107,016,908	106,572,395	106,566,523	106,697,213	106,933,287	105,271,400	105,271,400	105,271,400	105,271,400	105,271,400	94,323,778	94,323,778	94,323,778	94,323,778	94,323,778	83,274,400	83,274,400	**2,759,240,773**
Total Revenue ($) Base Case	106,696,204	107,016,908	106,572,395	106,566,523	106,697,213	106,933,287	105,271,400	105,271,400	105,271,400	105,271,400	105,271,400	94,323,778	94,323,778	94,323,778	94,323,778	94,323,778	83,274,400	83,274,400	2,759,240,773
Total Revenue ($) Indexed for Sensitivity	**106,696,204**	**107,016,908**	**106,572,395**	**106,566,523**	**106,697,213**	**106,933,287**	**105,271,400**	**105,271,400**	**105,271,400**	**105,271,400**	**105,271,400**	**94,323,778**	**94,323,778**	**94,323,778**	**94,323,778**	**94,323,778**	**83,274,400**	**83,274,400**	**2,759,240,773**
Mining Costs ($)	6,080,910	6,067,922	6,231,418	6,042,845	6,076,099	6,729,560	7,011,544	7,011,544	7,011,544	7,011,544	7,011,544	6,775,711	6,775,711	6,775,711	6,775,711	6,775,711	5,544,021	5,544,021	167,942,503
Processing Costs ($)	14,598,595	14,460,022	15,832,437	15,833,670	15,450,657	15,217,281	15,399,103	15,399,103	15,399,103	15,399,103	15,399,103	15,823,200	15,823,200	15,823,200	15,823,200	15,823,200	14,107,108	14,107,108	403,886,913
Tailings Transport Costs ($)	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	5,670,000
Site Services Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G & A Costs	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	4,590,872	123,953,544
Municipal Taxes ($)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on Letter of Credit & Purchase Financing ($)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Third-party Royalty / IBA Payments ($)																			0
Total Operating Costs ($) Base Case	25,480,376	25,328,816	26,864,727	26,677,387	26,327,628	26,747,713	27,211,519	27,211,519	27,211,519	27,211,519	27,211,519	27,399,783	27,399,783	27,399,783	27,399,783	27,399,783	24,452,001	24,452,001	701,452,960
Total Operating Costs ($) Indexed for Sensitivity	**25,480,376**	**25,328,816**	**26,864,727**	**26,677,387**	**26,327,628**	**26,747,713**	**27,211,519**	**27,211,519**	**27,211,519**	**27,211,519**	**27,211,519**	**27,399,783**	**27,399,783**	**27,399,783**	**27,399,783**	**27,399,783**	**24,452,001**	**24,452,001**	**701,452,960**
Operating Profit ($)	**81,215,827**	**81,688,092**	**79,707,668**	**79,889,136**	**80,369,585**	**80,185,574**	**78,059,881**	**78,059,881**	**78,059,881**	**78,059,881**	**78,059,881**	**66,923,995**	**66,923,995**	**66,923,995**	**66,923,995**	**66,923,995**	**58,822,400**	**58,822,400**	**2,057,787,813**
Mine Pre-production Capital Expenditure ($)																			
Mine Development – Pre-stripping																			8,470,167
Mining Equipment and Facilites																			24,812,051
Crushing and Concentrating																			131,032,412
Tailings Storage and Water Management																			29,433,603
Concentrate Storage and Handling																			2,309,549
Infrastructure																			14,539,723
Power and Communications																			26,202,813
PARTICIPATION IN THIRD-PARTY ASSETS																			
ROYALTY BUY-OUT OPTION																			0
Total Base Case																			210,597,504
Total Indexed for Sensitivity																			236,800,317
Residual Value ($)																			0
Working Capital ($)	-32,249	376,159	-46,938	-85,141	109,174	86,720	0	0	0	0	-145,493	0	0	0	0	-931,294	0	-7,577,720	0
Sustaining Capital Expenditures ($)																			
Mining Equipment	780,000	0	2,035,400	0	0	1,980,330	300,000	0	0	0	0	0	0	0	0	0	0	0	6,113,430
Mining Facilities	0	1,660,331	0	0	0	0	4,247,810	0	0	0	0	4,150,827	0	0	0	1,017,700	0	0	12,736,999
Processing Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500,000
Tailings & Water Management	0	14,077,289	0	0	0	0	1,993,377	0	0	0	0	0	0	0	0	0	0	0	30,211,824
Total Sustaining Capital Expenditure Base Case	780,000	15,737,620	2,035,400	0	0	1,980,330	6,541,187	0	0	0	0	4,150,827	0	0	0	1,017,700	0	0	49,562,253
Total Sustaining Capital Expenditure Indexed for Sensitivity	780,000	15,737,620	2,035,400	0	0	1,980,330	6,541,187	0	0	0	0	4,150,827	0	0	0	1,017,700	0	0	49,562,253
Total Capital Expenditure ($)	**747,751**	**16,113,779**	**1,988,462**	**-85,141**	**109,174**	**2,067,050**	**6,541,187**	**0**	**0**	**0**	**-145,493**	**4,150,827**	**0**	**0**	**0**	**86,406**	**0**	**-7,577,720**	**286,362,570**
Mine Rehabilitation Trust Fund Payments ($)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-8,000,000**	**2,000,000**
Mine Closure Costs ($)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,000,000	**8,000,000**
Federal Corporate Income Tax	9,376,374	9,500,727	9,063,833	9,286,942	9,494,264	9,529,097	9,346,617	9,318,752	9,415,660	9,488,890	9,544,197	8,273,993	8,231,432	8,278,256	8,314,015	8,335,025	7,378,132	7,399,581	224,884,848
Provincial Corporate Income Tax	7,584,974	7,645,743	7,054,560	7,369,906	7,462,976	7,281,877	7,289,489	7,258,990	7,301,781	7,335,150	7,361,071	6,375,307	6,334,014	6,363,621	6,386,461	6,399,238	5,663,192	5,677,866	172,420,449
Quebec Mining Tax	13,024,984	12,145,263	12,067,481	12,607,412	13,077,447	13,087,058	12,244,730	12,561,867	12,783,863	12,939,260	13,048,038	10,215,793	10,373,695	10,484,227	10,561,599	10,530,272	8,888,902	8,933,393	283,816,048
Total Corporate Income and Mining Taxes ($)	**29,986,333**	**29,291,733**	**28,185,874**	**29,264,260**	**30,034,688**	**29,898,032**	**28,880,837**	**29,139,609**	**29,501,303**	**29,763,300**	**29,953,306**	**24,865,094**	**24,939,142**	**25,126,103**	**25,262,075**	**25,264,535**	**21,930,227**	**22,010,841**	**681,121,345**
PRE-TAX CASH FLOW	**80,468,076**	**65,574,312**	**77,719,206**	**79,974,277**	**80,260,411**	**78,118,523**	**71,518,694**	**78,059,881**	**78,059,881**	**78,059,881**	**78,205,373**	**62,773,168**	**66,923,995**	**66,923,995**	**66,923,995**	**66,837,589**	**58,822,400**	**66,400,119**	**1,761,425,243**
Cumulative P-T CF	540,269,545	605,843,857	683,563,064	763,537,341	843,797,752	921,916,275	993,434,969	1,071,494,850	1,149,554,730	1,227,614,611	1,305,819,984	1,368,593,152	1,435,517,146	1,502,441,141	1,569,365,136	1,636,202,724	1,695,025,124	1,761,425,243	
Payback period work area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
AFTER-TAX CASH FLOW	**50,481,743**	**36,282,580**	**49,533,332**	**50,710,017**	**50,225,724**	**48,220,491**	**42,637,857**	**48,920,272**	**48,558,577**	**48,296,581**	**48,252,068**	**37,908,074**	**41,984,853**	**41,797,891**	**41,661,920**	**41,573,054**	**36,892,173**	**44,389,279**	**1,080,303,898**
Cumulative A-T CF	322,459,156	358,741,735	408,275,068	458,985,085	509,210,809	557,431,300	600,069,157	648,989,429	697,548,006	745,844,586	794,096,654	832,004,728	873,989,581	915,787,472	957,449,392	999,022,446	1,035,914,619	1,080,303,898	
Payback period work area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

FINANCIAL INDICATORS	Lag from t=-4 to pre-prod. start (months	24.0		
Pre Tax	Lag from t=0 to com. prod. start (months	3.0		
Payback Period (years)			**2.88**	
Total Cash Flow ($)			1,761,425,243	
Net Present Value ($)	Discount Rate	6.0%	671,088,444	
Net Present Value ($)	Discount Rate	8.0%	500,648,841	
Net Present Value ($)	Discount Rate	10.0%	376,645,456	
Internal Rate of Return			**29.10%**	
After Tax				Effective
Payback Period (years)			**3.38**	Tax Rates
Total CashFlow ($)			1,080,303,898	38.7%
Net Present Value ($)	Discount Rate	6.0%	392,745,790	41.5%
Net Present Value ($)	Discount Rate	8.0%	284,777,551	43.1%
Net Present Value ($)	Discount Rate	10.0%	206,047,130	45.3%
Internal Rate of Return			**22.57%**	

A working capital equivalent to 3 months of total annual operating costs is maintained throughout the production period. A provision of $7.2 M is required at the start of production.

A provision of $10.0 M is required in the form of trust fund payments for mine closure and rehabilitation.

The financial results indicate a positive before-tax Net Present Values (NPV) of $500.6 M at a discount rate of 8%. The pre-tax Internal Rate of Return (IRR) is 29.10% and the payback period is 2.88 years.

The after-tax Net Present Value is $284.8 M at a discount rate of 8%. The after-tax Internal Rate of Return is 22.57% and the payback period is 3.38 years.

Table 22.4 – Project Evaluation Summary

Description	Total (Million CAD)
Total Revenue (LOM)	2,759.2
Total Concentrate Transport Cost (LOM)	194.1
Total Operating Costs (LOM)	701.5
Pre-production Capital Cost	236.8
Initial Working Capital	7.2
Total Sustaining Capital Cost (LOM)	50.5
Mine Closure and Rehabilitation	10.0

Table 22.5 – Financial Results Summary

Description	Pre-Tax	After Tax
BEFORE TAX		
Total Cash Flow ($ Million CAD)	1,761.4	1,080.3
NPV@ 8% ($ Million CAD)	500.6	284.8
NPV@ 6% ($ Million CAD)	671.1	392.7
NPV @ 10% ($ Million CAD)	376.6	206.0
IRR (%)	29.10	22.57
Payback Period (years)	2.88	3.38

22.4 Sensitivity Analysis

A sensitivity analysis has been carried out, with the base case described above as a starting point, to assess the impact of changes in graphite concentrate price (all four (4) price categories are varied together), total pre-production Capex and Opex on the Project's NPV @ 8% and IRR. Each variable is examined one-at-a-time. An interval of ±30% with increments of 10% was used for all three (3) variables. It is to be noted that the margin of error for cost estimates at the feasibility study level is typically ±15%. However, the uncertainty in price forecasts usually remains significantly higher, and is a function of price volatility.

The before-tax results of the sensitivity analysis, as shown in Figure 22.2 and Figure 22.3, indicate that, within the limits of accuracy of the cost estimates in this study, the Project's before-tax viability does not seem significantly vulnerable to the under-estimation of capital and operating costs, when taken one at-a-time. The vertical dashed lines show the typical 15% margin of error associated with the cost estimates. As seen in Figure 22.2, the net present value is marginally more sensitive to variations in operating costs than it is to capital costs, as evidenced by the steeper slope of the Opex curve. As expected, the net present value is most sensitive to variations in price. Nevertheless, the Project retains a positive net present value at the lower limit of the price interval.

Figure 22.2 – Before-Tax NPV8%: Sensitivity to Capital Expenditure, Operating Cost and Price

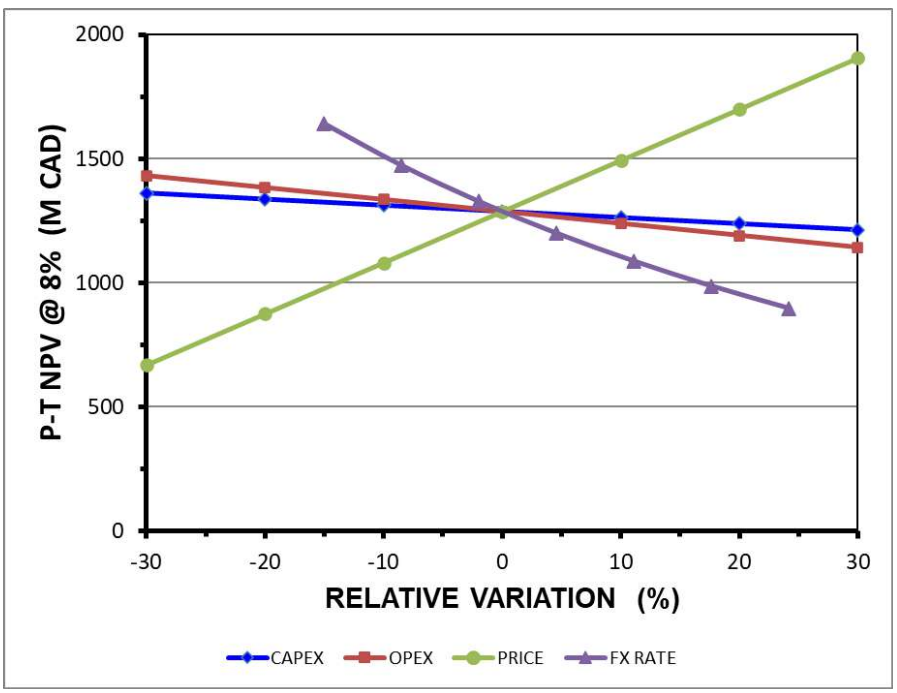
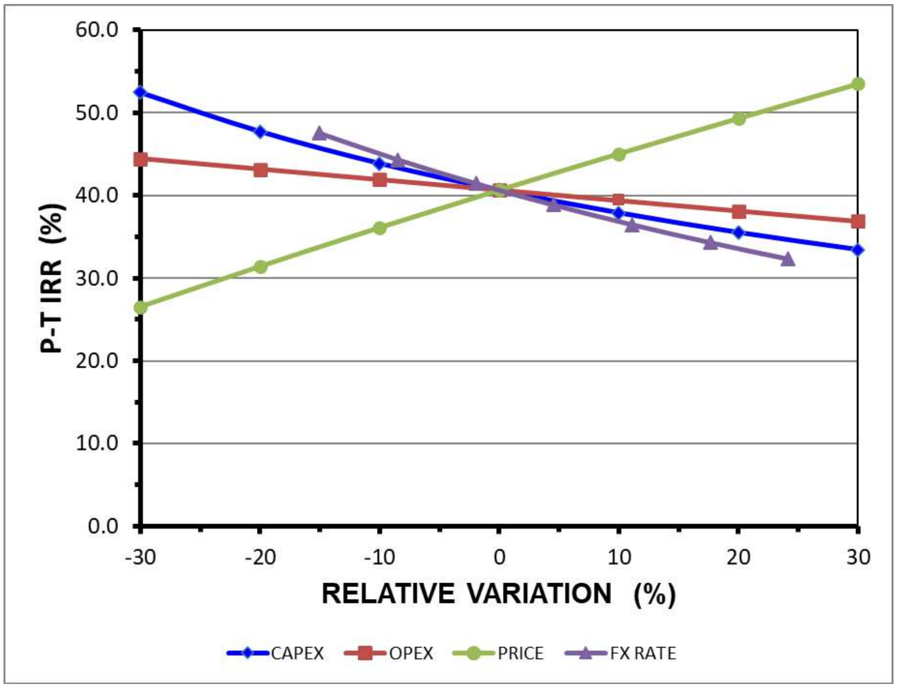


Figure 22.3, showing variations in internal rate of return, provides the same conclusions. The horizontal dashed line indicates the base case discount rate of 8%. In contrast with Figure 22.2,

which shows linear variations in net present value for the three (3) variables studied, variations associated with internal rate of return shown in Figure 22.3 are not linear. The internal rate of return is more sensitive to variations in capital costs than it is to operating costs, and as in the case of net present value, it is most sensitive to variations in price.

Figure 22.3 – Before-Tax IRR: Sensitivity to Capital Expenditure, Operating Cost and Price



The after-tax results of the sensitivity analysis are shown in Figure 22.4 and Figure 22.5. The same conclusions as those made for the before-tax case concerning the sensitivity of NPV and IRR to variations in capital costs, operating costs and price can be drawn.

Figure 22.4 – After-Tax NPV8%: Sensitivity to Capital Expenditure, Operating Cost and Price

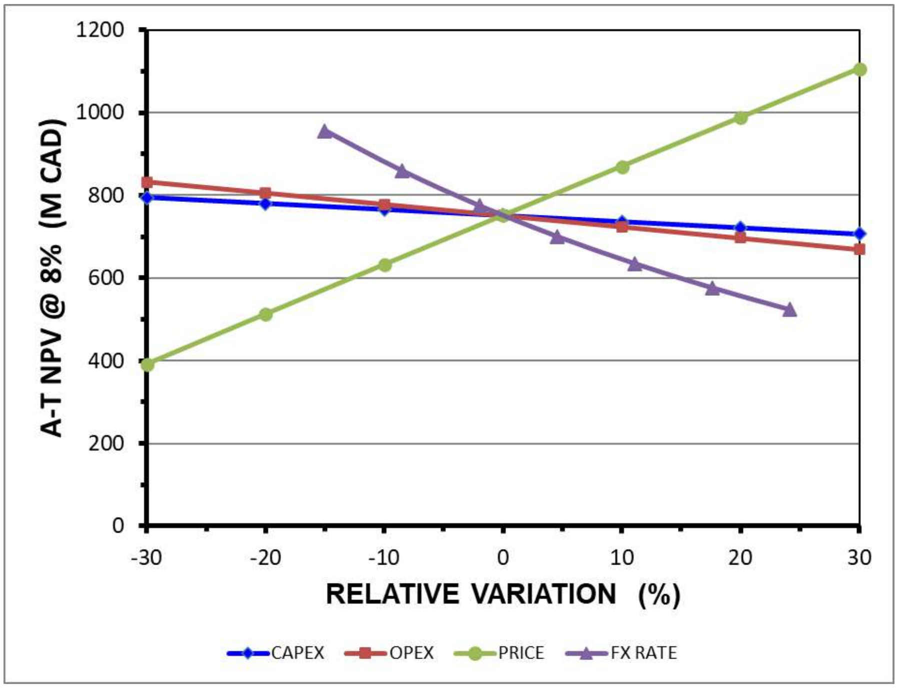
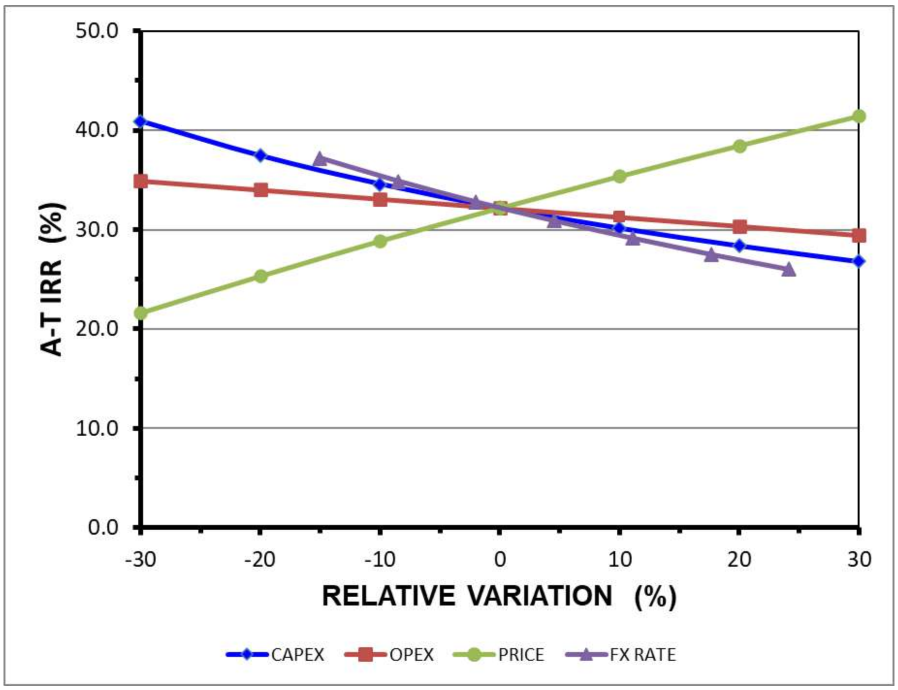


Figure 22.5 – After-Tax IRR: Sensitivity to Capital Expenditure, Operating Cost and Price



23 ADJACENT PROPERTIES

The Lac Knife claim block is bordered to the west and to the south by the proposed Moisie River aquatic reserve. The Moisie River is a spawning ground for the Atlantic salmon. Under the Minister's Order dated 18 March 2003 published in the *Gazette officielle du Québec* of 9 April 2003, the proposed Moisie river aquatic reserve was created to protect a large part of the river and adjacent watershed. The western part of the Lac Knife claim block is located in the Moisie river watershed but predates the proposed aquatic reserve area. Currently, mineral exploration activities are prohibited with the perimeter of the proposed Moisie River aquatic reserve.

ArcelorMittal Exploitation minière Canada S.E.N.C. holds 77 claims covering an area of 3,291 hato the north of Focus Graphite's Montagne-aux-Bouleaux claim block. The ArcelorMittal claims adjoin the Mont-Wright Iron Ore mine operations mining concessions and cover potential expansion areas. The Mont-Wright mine has been in operation since the mid 1970s.

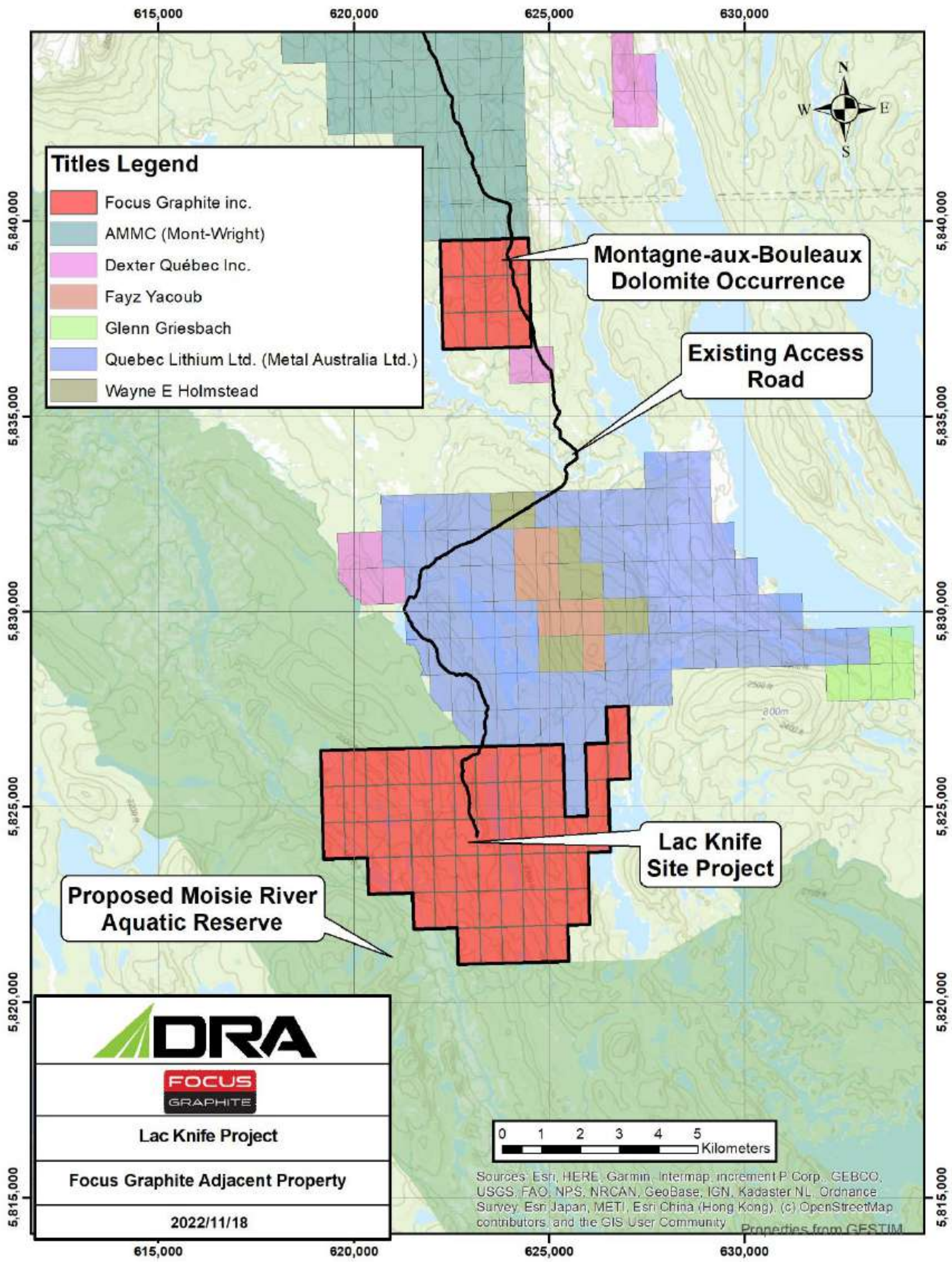
Dexter Québec Inc., a construction and mining contractor and a subsidiary of Municipal Group of Compagnies., holds 12 claims covering an area of 608.9 ha. These claims were apparently acquired for quarrying material for the Highway 389 relocation project.

There are 23 claims (total of 1,203.9 ha) held by three (3) separate individuals, active in claim trading. Fayez Yacoub with 8 claims (418.6 ha), Glenn Griesbach with 6 claims (314.4 ha) and Wayne E. Holmstead with 9 claims (470.9 ha). The claims are mostly located in the vicinity of the Québec Lithium Ltd. claims and do not immediately touch the Focus claims.

Québec Lithium Ltd., a wholly owned subsidiary of Metals Australia Ltd., holds 92 claims covering an area of 4,763.6 ha, referred to as the Lac Rainy Project, sited adjacent to the northeast quadrant of the Lac Knife Project. A JORC maiden mineral resource estimate was published on June 15, 2020, for their Carheil South-East and North-West graphite deposits, for a total of 13.3 Mt of indicated and inferred resources grading 11.5% total graphitic carbon (TGC) for 1.529 Mt of contained graphite using a 5% TGC cut-off and (not NI-43-101 compliant).

There are no other claim holders in the area surrounding the Project. The adjacent claim blocks and the proposed Moisie River aquatic reserve are shown in Figure 23.1. The information has been extracted from the Québec Government online claim management system GESTIM Plus (October 7, 2022).

Figure 23.1 – Adjacent Properties



Source: DRA, 2022

24 OTHER RELEVANT INFORMATION

24.1 Project Implementation Schedule

The project implementation schedule includes the main engineering, procurement and construction activities as indicated. The information contained in this schedule is derived from information taken from supplier's quotes or in-house database. The schedule presents the total duration of the Project considering Project Financing is available and environmental authorizations for construction are available.

Long lead delivery process equipment and manufacturing capacity for specific type of equipment such as grinding mills, mining equipment and others, need to be considered in order to foresee the duration of a project.

Emphasis should be made on:

- Advanced procurement of long lead process equipment items.
- Infrastructure and site preparation engineering to satisfy the pre-stripping and construction phases.
- Detailed mine planning to develop information for the mining contractor tender process and selection.
- Contracting the new power line to provide power during construction.
- Contracting the new main access road to provide access early in the Project for delivery and equipment and materials.

24.1.1 EPCM

The main tasks to be accomplished during this phase are:

- Engineering for the main access road, open pit mine, tailings management facilities, site preparation, site infrastructure, process buildings, offices.
- Procurement for the above including bid preparation and evaluation, organisation of site visits, contract preparation and contract administration.
- Mobilize the construction management team to site, provide site assistance when needed and supervise dry and wet commissioning and ramp-up.

24.1.2 Project Implementation Schedule

The project implementation schedule, presented in Figure 24.1 has been prepared for the Project with the information available to date.

Figure 24.1 – Project Implementation Schedule

Source: DRA, 2023

24.2 Project Execution Plan

The Lac Knife Project will be managed by an Engineering, Procurement, Construction Management (EPCM) Team to perform the direction of the site activities. Various engineering and contractors will be appointed to assist the EPCM team in the performance of their work.

The procurement of equipment and site works will be integrated with the design and fabrication planning to ensure an executable construction supply chain is accurate and established.

The Project commissioning plan will be developed by the EPCM team and Focus with support from the contractors. The Focus operational personnel will take gradual ownership of the Project facilities as they are completed and commissioned. An Operational Readiness Plan shall be developed by the EPCM team assisted by Focus.

It is critical to commence some design work before the official go-ahead with the Project to provide activities to start the long-term delivery procurement activities, and the design of the main access road and the incoming power line. This will ensure that the Project advances quickly when the go-ahead is given.

24.3 Opportunities

24.3.1 Zone North

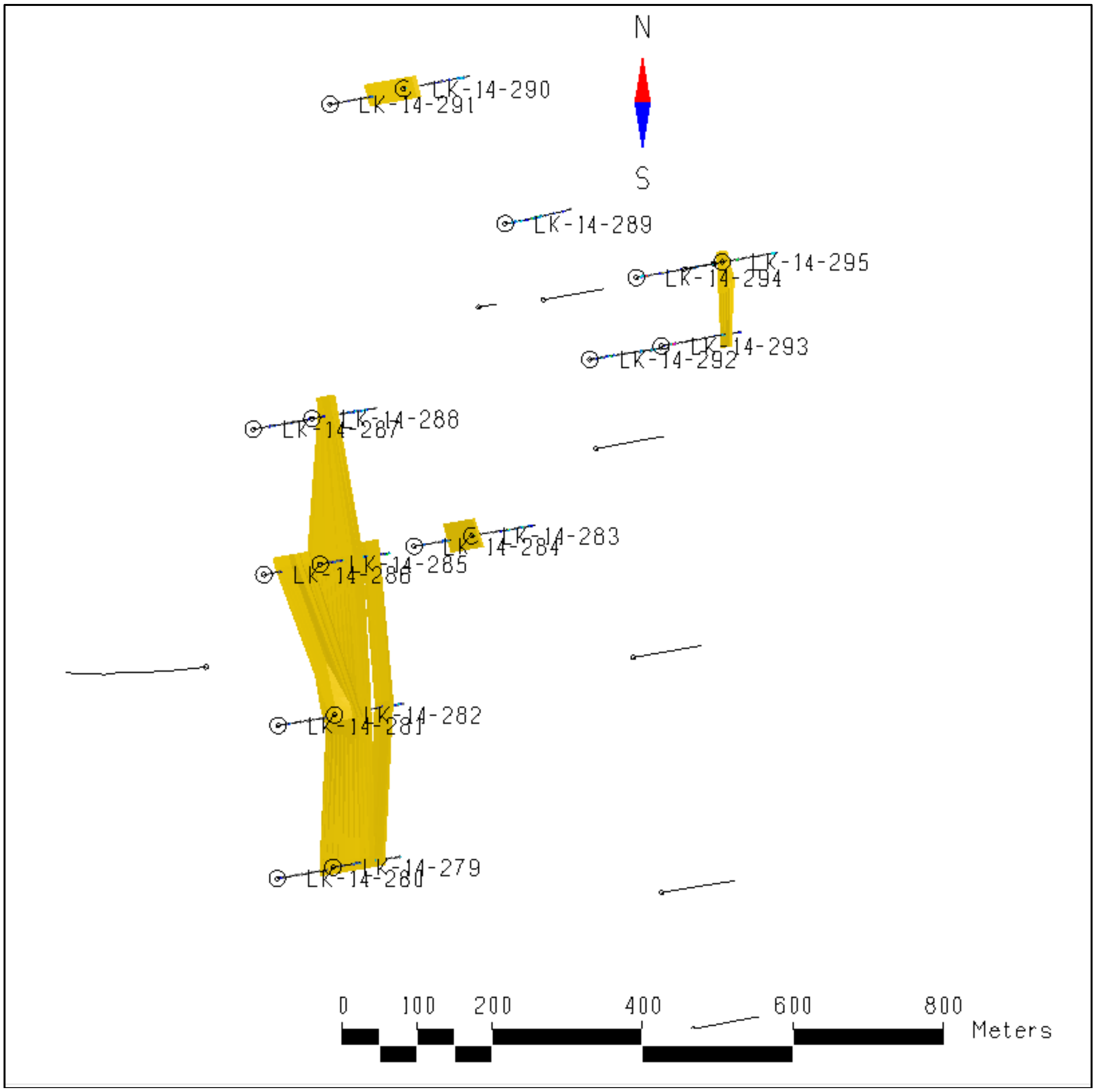
The Zone North is located outside the area of the FSU pit shell, in a new area explored by drilling performed in 2014 and 2018. The Zone North presents an opportunity to be included in an MRE but was excluded from the current MRE since there was no density measurements performed.

With a volume of the mineralised solids totalling 829,000 m^3, the Zone North would be the third highest volume and would significantly improve the MRE.

Table 24.1 –Statistics of Grades Constrained within the Zone North

Description	***Value*** *(Cg_pct)*
Arith. Mean	9.83
W.Mean	9.95
Median	7.26
Mode	11.40
Std Dev	7.53
COV	0.76
Minimum	0.1
Maximum	30.8
Count	244

Figure 24.2 –Zone North



Source: DRA, 2022

25 INTERPRETATIONS AND CONCLUSIONS

25.1 Mineral Resource Estimate

The Mineral Resource Estimation performed in 2022 is an update of the MRE performed in 2014 following additional drilling on the project since this date. Drilling added was targeted to better explore the area of the open pit footprint defined during the FSU, explore an area located on the west of the open pit footprint and test an area located in the north and called "Zone North". In 2014, a total of seventeen (17) exploration holes were drilled in the Zone North. Drilling was widely drilled and the more interesting area, for a MRE perspective, was drilled at a drill spacing of about 200 m. Despite this wide drilling spacing an attempt was made to estimate the volumetric potential of the area. It accounts to approximately 829,000 m^3 and, with an assumed average density of 2.81, there is a potential tonnage of 2.33 Mt.

The length weighted grade average of samples constrained within the modelled solid for Zone North is about 10% Cg. Although, this area offers a grade average less than what was defined in the 2014 FS open pit shell, it remains a potential opportunity for future exploration with the intent to better define the Mineral Resources once, grades and geological continuity.

In the next phase of the Project, DRA recommends further exploration to gather additional data for a better understanding of the Zone North.

25.2 Mineral Reserve Estimate

Proven and probable mineral reserves were developed from the open pit mine design for the Lac Knife deposit. These mineral reserves which account for dilution and ore loss formed the basis of the life of mine plan that was prepared.

The open pit design includes 9,310 kt of Probable Mineral Reserves a grade of 14.97% Cg. To access these reserves, 4,702 kt of overburden, and 19,073 kt of waste must be mined. This total waste quantity of 23,775 kt results in a stripping ratio of 2.6 to 1. At the planned production rate of 345 kt of ore per year, the pit contains roughly 27 years of mineral reserves.

25.3 Process

The objective of achieving a graphite concentrate with grade of 97.8% C and recovery 90.7% was achieved during a pilot plant testing program conducted at SGS Minerals in Lakefield, Ontario, in 2013-2014.

The process plant is designed based on the production of 50,000 dry t/y of graphite concentrate containing 47,781 dry t/y of high-grade of 97.8% C(t) salable graphite concentrate from a feed grade of 14.8% C(t). The total graphite recovery of 90.7% and the salable graphite concentrate recovery of 86.7% (excluding ultrafine) are average figures based on the pilot plant test work results and may change depending on the ore composition.

A suitable process flow sheet includes crushing, grinding, polishing, flotation, concentrate dewatering and drying, concentrate screening and bagging, and tailings filtration and loadout. Mining equipment, tailings storage facility, concentrate transportation as well as infrastructure and services have been added to complete the investment cost estimate of the Project.

25.4 Environment

The consultation and information process, initiated in 2013 with First Nation communities and stakeholders concerned by the Project, highlighted several issues regarding water quality, especially that of the Rivière-aux-Pékans salmon population, recreational activities, and noise levels for some of the local tenants due to access road traffic and mining operations. As the Project is located on Innu Takuaikan Uashat mak (ITUM) ancestral territory, First Nation representatives have required that a communication and consultation strategy being put in place to be kept informed of the project development and assessment of environmental impact. Moreover, the Innu community has expressed that it expects to participe in potential economic fallout opportunities related to the Project. These intentions led to draft a pre-project development agreement signed in 2014 between Focus and ITUM.

Even if the Lac Knife area is characterised by a clean environment, several studies carried out to set environmental baselines highlighted metal concentrations exceeding the quality criteria recommend by regulations. Since no industrial activity is present in the Lac Knife area, the acidic pH of water and metal contents exceeding references threshold are interpreted to be natural and mainly related to geological processes for soils, bottom lake sediments and groundwater.

Woodland caribou were not observed during field studies, but the little brown bat and bald eagles, which are designated as threatened or vulnerable species, have been confirmed to inhabit near the Project site. Mitigation measures should be considered to preserved bats such as installation of bat boxes or maintain a riparian strip along most water bodies in the mining site area.

Acid mine drainage has been identified as a key environmental issue with the presence of up to 30%reactive sulphides (pyrrhotite, pyrite) associated with graphitic ore and locally in waste rocks, which are susceptible to generate acid mining drainage through their oxidation. Leaching and kinetic testing carried out since 2012 showed that ore and tailings are potentially acid generating (PAG) while waste rock ranged from non-PAG to PAG. Ore, tailings, and waste rock are also considered as leachable for several metals and sulphate while some ore samples showed potential for self-heating mainly due to abundance of pyrrhotite. Mitigation measures must be implemented to prevent such drainage that could contaminate and damage the Lac Knife and Rivière-aux-Pékans ecosystems.

The seriousness of the acid generation potential is enhanced by the proximity of the Pékans River which is a sensitive ecosystem and a tributary of the Moisie River, well-known for its salmon habitats and fishing activities. To mitigate acid mine drainage generation and/or contamination of groundwater, tailings will be filtered and stored as dry stack amended with dolomitic marble layers. Tailings will be progressively rehabilitated during the operations.

A geosynthetic liner and a draining system will be installed underneath the tailings, waste rocks and ore facilities to collect any runoff or seepage water and divert it to a water storage pond. Water will be pumped toward a treatment plant before recycling or discharge in the final effluent.

Closure activities will include capping the tailings stack with sand and a geosynthetic liner followed by overburden material and topsoil to provide a growth medium for vegetation. A revegetation monitoring program will be maintained until recolonization has been achieved. Periodic monitoring and sampling of surface water and groundwater will continue after closure until their qualities reach background levels requested by regulatory agencies. The water treatment plant will be maintained in operation until stable water quality is achieved in final effluent. The water storage pond will be drained and reclaimed.

The main source of greenhouse gas (GHG) emissions directly related to the mining operation relates to internal combustion from mobile equipment which should emit 1970 tonnes of CO_2 per year over more than 27 years. Focus is committed to developing a carbon free mining operation using zero-emission mining equipment as these become more readily available and competitively priced . Similarly, shipping of the graphite concentrate to Baie-Comeau is to be conducted by electric trucks as soon as these are commercially available. Finally, CO_2 is to be released through the sulphatation process in the tailings, the magnitude of which is to be documented.

Focus will evaluate potential options to optimize the recovery and market pyrrhotite and ultrafine grained graphite concentrates not contemplated in the current study. Partial or total recovery of these minerals should help promote the social acceptability of the Project and could significantly reduce acid generation from the tailings. A scoping and market study for the transformation of graphite concentrate into a value-added product will be launched in 2023.

26 RECOMMENDATIONS

26.1 Process

Based on the work performed and the test results, additional work can be performed to both optimise and de-risk the process design and equipment selection. It is recommended to perform certain work for the next stage of the Project:

- It is recommended to perform dynamic thickening test work on representative tailings material to provide additional confidence in the thickener design and selection.
- Due to the high quantity of graphite in the feed, the use of a jaw crusher as primary crusher should be re-evaluated as part of the next phase. Some reference projects have experienced difficulty with material slipping in the crushing zone of a jaw crusher. The use of a primary impactor, mineral sizer, or ore pusher should be evaluated and potentially tested.
- It is recommended to evaluate direct filtration of flotation concentrates. Several graphite operations have noted difficulty with graphite thickening. Direct filtration of flotation concentrate should be tested to determine the feasibility of elimination of the concentrate thickener.
- Material characteristics for storage and handling of run of mine ore, crushed ore, filter cake, and dried products should be determined. These tests should be carried out at a specialized laboratory to determine parameters for proper bin, pile, hopper, and chute design.
- Case studies of graphite sifting have shown it to be effective, however the sifters used in the FSU have not been tested with Lac Knife graphite. It is recommended to test the sifting characteristics of Lac Knife graphite concentrate. This may require producing new flake graphite depending on remaining quantities from the 2014 pilot plant run.
- Due to the importance of material humidity for dry stack tailings, vendor testing of tailings filtration is recommended prior to purchase of the tailings filters.
- Comprehensive variability flotation testing is recommended to determine the range of expected flake size distribution. This may require resizing of the secondary cleaning circuits to allow for larger fluctuations in flake size distribution.
- Following the variability testing, it is recommended to perform screening testing on a rotary screen to confirm the rotary sizing screen requirement.
- The current design considers modified ball-mills as polishing mills. It is recommended to investigate the use of heavy-duty drum scrubbers as polishing mills during detailed engineering and confirm the feed percent solids for each mill.
- The current design rejects the -400-mesh graphite to tailings as there is limited market for the low purity fine material. An investigation into the possible upgrading of fines during micronisation should be investigated and economics of this scenario are recommended to be evaluated in detailed engineering.

- It is recommended to perform deliming trials to confirm desliming requirements during detailed engineering. The current design considers a single stage of cycloning; however, to achieve good separation efficiency, two-stage cycloning may be required.
- It is recommended to perform materials handling trials on the graphite concentrate to confirm the dense phase conveyance requirements.
- Based on the marketing strategy of the graphite concentrate, it is recommended to confirm product bagging requirements.
- Recommend examining the use of geothermal for the heating of the concentrator and partial heating of the dryers

26.2 Environment

Based on work carried out on the Project, the following tasks and studies are recommended.

- Focus must resume the community consultation process initiated with the First Nations, the Caniapiscau MRC and other local stakeholders. These consultations shall provide an update on recent developments related to the Project, answer questions and document the concerns and expectations about the Project from the various stakeholders. The informative website dedicated to the Project (https://www.lacknife.com/) should be updated and upgraded with the latest developments on the project including FSU highlights and provide an interactive space for communities and stakeholders to ask questions and obtains answers about their various concerns.
- Focus must complete work and studies related to the second set of MELCCFP questions from MELCCFP, including ground water quality modeling and dust dispersion modeling, and update the EIAS study for the Project. Once the ESIA study is approved by MELCCFP, Focus must set a community liaison, information, and consultation strategy before initiating the public information and consultation process.
- Once the filtered tailings storage facility concept is approved by MELCCFP, Focus must initiate a tailings dam break study and evaluate the risks associated with the frequencies and rates of precipitation related to climate changes or the failure of the dam in case of earthquake.
- A noise reduction and vibration study should also be carried out to evaluate the effects of the operations such as blasting, trucking.
- A scoping and market study on transformation of Lac Knife graphite concentrates into value added product is to be initiated as requirement for the certificate of authorization.
- A feasibility study related to the cost-benefits of backfilling the pit is to be initiated as requirement for the certificate of authorization.
- A mine closure and rehabilitation plan must be provided to MELCCFP as a requirement for the Certificate of Authorization.

- Upon granting of the Certificate of Authorization, Focus will be allowed to apply for a mining lease from the MERN and start the construction of infrastructure related to the mining Project including the tailings, waste, ore, and mining water storage areas.
- Once the mining lease is obtained, a monitoring committee must be organized and maintained until all the work indicated in the rehabilitation and restoration plan has been completed.
- Although not a requirement, it is recommended to undertake a mine-scale geo-environmental characterization study of tailings and waste rocks. Such type of study is more exhaustive than those carried out for the EISA since its purpose is to characterize the acidification and metal leaching potentials for several sections of the pit. As the geo-environmental study should be carried out before the beginning of operations, it must help to optimize the tailings and waste rock management process and to reduce the operating costs.
- The geo-environmental study must include kinetic testing such as column tests and field test pads (or barrels) should be carried out on waste rocks and tailings. Waste rocks selected for tests must be those characterised as PAG and tailings should be amended with dolomitic marble interlayers in the columns and field pads to replicate the expected profiles in the FTSF. Results are required to design the water treatment plant.
- CO_2 generation through the sulphuration of dolomite must be evaluated, simultaneously with kinetic testing of tails for acid generation.
- Since streams, lakes or ponds in the vicinity of the Project are to be considered as potential fish and benthic organism habitats or spawning ground, a monitoring program shall be implemented to monitor quality of groundwater, surface water and sediments in these habitats.
- A weather station shall be installed on the Project site as well as atmospheric sampling stations to monitor dust and atmospheric contaminants. Such stations shall be installed prior to beginning of the construction phase.
- As the mine site is in the distribution range of woodland caribou, occurrences and displacements of woodland caribous shall be monitored.
- The current study plans to use diesel mining equipment and road carrier trucks. It is recommended that the Company as part of its commitment to developing a carbon free mining operation progressively replace its fleet of diesel-powered mobile equipment with zero-emission vehicles as these become more readily available and competitively priced.
- Complete additional drilling to better define the potentially acid generating rock (PAG) and non-acid generating rock (NAG) inside the pit.

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28 ABBREVIATIONS

The following abbreviations may be used in this Report.

Abbreviation	Meaning or Units
'	Feet
"	Inch
$	Dollar Sign
$/m²	Dollar per Square Metre
$/m³	Dollar per Cubic Metre
$/t	Dollar per Metric Tonne
%	Percent Sign
% w/w	Percent Solid by Weight
¢/kWh	Cent per Kilowatt hour
°	Degree
°C	Degree Celsius
2D	Two Dimensions
3D	Three Dimensions
µm	Microns, Micrometre
µg	Microgram(s)
µg/m³	Micrograms per cubic meter
µPa	Pressure in micro-pascal
µg/m³	Microgram per Cubic Metre
µm	Microns, Micrometre
'	Feet
"	Inch
$	Dollar Sign
$/m²	Dollar per Square Metre
$/m³	Dollar per Cubic Metre
$/t	Dollar per Metric Tonne
%	Percent Sign
% w/w	Percent Solid by Weight
¢/kWh	Cent per Kilowatt hour
°	Degree
°C	Degree Celsius

Abbreviation	Meaning or Units
AARQ	*Atlas des amphibiens et des reptiles du Québec*
ABA	Acid-Base Accounting
Ag	Silver
Ai	Abrasion Index
ALS	ALS Minerals Laboratories
AMD	Acid Mine Drainage
AMSL	Above Mean Sea Level
AP	Acid Potential
APRM	Moisie River Fishing Association
ARD	Acid Rock Drainage
As	Arsenic
ASL	Above Sea Level
ATV	All-Terrain Vehicle
Au	Gold
AWG	American Wire Gauge
az	Azimuth
Ba	Barium
bank	Bank Cubic Metre (Volume of material in situ)
BAPE	*Bureau d'Audience Publique sur l'Environnement*
Be	Beryllium
BFA	Bench Face Angle
BIF	Banded Iron Formation
BOF	Basic Oxygen Furnace
BQ	Drill Core Size (3.65 cm diameter)
BSG	Bulk Specify Gravity
BTEX	Benzene, toluene, ethylbenzene and xylene
BTU	British Thermal Unit
BWi	Bond Ball Mill Work Index
C(g)	Carbon Graphite
C(t)	Total Carbon

Abbreviation	Meaning or Units
$C_{10}C_{50}$	Petroleum Hydrocarbons
C_{org}	Organic Carbon
Ca	Calcium
CA	Certificate of Authorization
CAD	Canadian Dollar
CAGR	Compound Annual Growth Rate
CAPEX	Capital Expenditures
CBA	Community Benefit Agreement
CCBE	Cover with Capillary Barrier Effect
CCME	Canadian Council of Ministers of the Environment
Cd	Cadmium
CDC	*Claim désigné sur carte*
CDE	Canadian Development Expenses
CDP	Closure and Decommissioning Plan
CDPNQ	*Centre de données sur le patrimoine naturel du Québec*
Ce	Cesium
CEAA	Canadian Environmental Assessment Agency
CEE	Canadian Exploration Expenses
CEEAQ	*Centre d'expertise en analyse environnementale du Québec*
CEPA	Canadian Environmental Protection Act
cfm	Cubic Feet per Minute
CFR	Cost and Freight
CFU	Colony-Forming Unit
CIF	Cost Insurance and Freight
CIL	Carbon in Leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CIP	Carbon in Pulp
CIS	Commonwealth Independent States
Cl	Clay
CL	Concentrate Leach
cm	Centimetre
CND	Contaminated Neutral Drainage
Co	Cobalt

Abbreviation	Meaning or Units
CofA	Certificate of Authorization
COG	Cut Off Grade
COV	Coefficient of Variation
Cr III	Chromium Oxide
Cr VI	Hexavalent Chromium
CRM	Certified Reference Materials
CSF	Co-Disposal Storage Facilities
Cu	Copper
$CuSO_4$	Copper Sulphate
CWi	Crusher Work Index
d	Day
d/w	Days per Week
d/y	Days per Year
D2	Second Generation of Deformation
D3	Third Generation of Deformation
D4	Fourth Generation of Deformation
dB	Decibel
dBA	Decibel with an A Filter
DDH	Diamond Drill Hole
deg	Angular Degree
DFO	Department of Fisheries and Oceans
DGPS	Differential Global Positioning System
DMS	Dense Media Separator
DO	Dissolved Oxygen
DRI	Direct Reduced Iron
DT	Davis Tube
DWI	Drop Weight Index
DWT	Drop Weight Test
DXF	Drawing Interchange Format
E	East
EA	Environmental Assessment

Abbreviation	Meaning or Units
EAB	Environmental Assessment Board
EAF	Electric Arc Furnace
EBS	Environmental Baseline Study
EHS	Environment Health and Safety
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plant
EOH	End of Hole
EP	Environmental Permit
EPA	Environmental Protection Agency
EPCM	Engineering, Procurement and Construction Management
EPS	Expandable Polystyrene
EQA	Environmental Quality Act
ER	Electrical Room
ESBS	Environmental and Social Baseline Study
ESIA	Environmental and Social Impact Assessment
FAG	Fully Autogenous Grinding
FDS	Fused Disconnect Switch
Fe	Iron
FOB	Free on Board
Focus	Focus Graphite Inc.
FS	Feasibility Study
FSU	Feasibility Study Update
FVNR	Full Voltage Non-Reversible
g	Grams
G&A	General and Administration
g/l	Grams per Litre
g/t	Grams per Tonne
gal	Gallons
GDP	Gross Domestic Product
GEMS	Global Earth-System Monitoring Using Space

Abbreviation	Meaning or Units
GHG	Greenhouse Gas
GPS	Global Positioning System
GQ	Government of Québec
Gr	Granular
GCW	Gross Combined Weight
GOH	Gross Operating Hours
H	Horizontal
h	Hour
h/d	Hours per Day
h/y	Hour per Year
H_2	Hydrogen
ha	Hectare
HBI	Hot Briquetted Iron
HCO_3	Bicarbonate
HCT	Humidity Cell Test
HDPE	High Density Polyethylene
HF	Hydrofluoric Acid
HFO	Heavy Fuel Oil
Hg	Mercury
HG	High Grade
HL	Heavy Liquid
HmFe	Hematitic Iron
hp	Horsepower
HPEV	Hybrid Plug-in Electric Vehicle
HQ	Drill Core Size (6.4 cm Diameter)
HVAC	Heating Ventilation and Air Conditioning
I/O	Input / Output
IBAs	Impact Benefit Agreements
ICP-AES	Inductively Coupled Plasma – Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma – Mass Spectroscopy
ICP-OES	Inductively Coupled Plasma – Optical Emission Spectroscopy

Abbreviation	Meaning or Units
ID	Identification
IDW	Inverse Distance Method
IDW2	Inverse Distance Squared Method
In	Inches
IRA	Inter-Ramp Angle
IRR	Internal Rate of Return
IT	Information Technology
ITUM	Innu Takuaikan Uashat mak Mani-utenam
J/g	Joule per grams
KE	Kriging Efficiency
kg	Kilogram
kg/l	Kilogram per Litre
$kg/m^2/h$	Kilogram per Square Metre per Hour
Kg/t	Kilogram per Metric Tonne
kl	Kilolitre
km	Kilometre
km^2	Square Kilometre
km/h	Kilometre per Hour
kPa	Kilopascal
KSR	Kriging Slope Regression
kt	Kilotonne
kV	Kilovolt
kVA	Kilovolt Ampere
kW	Kilowatt
kWh	Kilowatt-hour
kWh/t	Kilowatt-hour per Metric Tonne
Hz	Hertz
L	Line
l	Litre
l/h	Litre per hour

Abbreviation	Meaning or Units
lbs	Pounds
LCT	Locked Cycle Tests
LFO	Light Fuel Oil
LG	Low Grade
LG-3D	Lerchs-Grossman – 3D Algorithm
Li	Lithium
LIMS	Low Intensity Magnetic Separator
LLDPE	Linear Low-Density Polyethylene
LOI	Loss on Ignition
LOM	Life of Mine
LV	Low Voltage
m	Metre
m/h	Metre per Hour
m/s	Metre per Second
m^2	Square Metre
m^3	Cubic Metre
m^3/d	Cubic Metre per Day
m^3/h	Cubic Metre per Hour
m^3/y	Cubic Metre per Year
mA	MilliAmpère
MABA	Modified Acid Base Accounting
Mag	Magnetic
MagFe	Magnetic Iron
Mm^3	Million Cubic Metres
MCC	Motor Control Center
MDDELCC	*Ministère du Développement durable, de l'environnement et de la Lutte contre les changements climatiques*
MDDEP	*Ministère du Développement Durable, Environnement, Faune et Parcs*
MELCC	*Ministère de l'Environnement, et de la Lutte contre les Changements Climatiques*
MELCCFP	*Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs*
MENA	Middle East and North Africa

Abbreviation	Meaning or Units
MEND	Mining Environment Neutral Drainage Program
MERN	*Ministère de l'Énergie et des Ressources naturelles*
MFFP	*Ministère des Forêts, de la Faune et des Parcs*
Mg	Magnesium
mg/L	Milligram per Litre
MI	Mineralized Intervals
MIBC	Methyl Isobutyl Carbinol
MIBK	Methyl Isobutyl Ketone
min	Minute
min/h	Minute per Hour
Min/shift	Minute per Shift
ml	Millilitre
ML	Metal Leaching
mm	Millimetre
mm/d	Millimetre per Day
Mm^3	Million Cubic Metres
MMER	Metal Mining Effluent Regulation
MMU	Mobile Manufacturing Units
Mn	Manganese
MNDM	Ministry of Northern Development and Mines
MNRW	Ministry of Natural Resources and Wildlife
MOE	Ministry of Environment
MOU	Memorandum of Understanding
MARA	Moisie River Aquatic Reserve
MRC	*Municipalité régionale de comté*
MRN	*Ministère des Ressources Naturelles*
MRNF	*Ministère des Ressources Naturelles et de la Faune*
MSDEP	Ministry of Sustainable Development, Environment and Parks
Mt	Million Metric Tonnes
Mt/y	Millions of Metric Tonnes per year
MV	Medium Voltage
MVA	Mega Volt-Ampere
MW	Megawatts

Abbreviation	Meaning or Units
MWh/d	Megawatt Hour per Day
My	Million Years
N	North
N/A	Not Available
NAG	Non-Acid Generating
Nb	Number
NE	Northeast
NFPA	National Fire Protection Association
NGR	Neutral Grounding Resistor
NI	National Instrument
Nm^3/h	Normal Cubic Metre per Hour
NORM	Naturally Occurring Radioactive Materials
NP	Neutralization Potential
NPV	Net Present Value
NQ	Drill Core Size (4.8 cm diameter)
NRCAN	Natural Resources Canada
NSR	Net Smelter Return
NTP	Normal Temperature and Pressure
NTS	National Topographic System
NW	North West
O/F	Overflow
OB	Overburden
OK	Ordinary Kriging
OEM	Original Equipment Manufacturer
OPEX	Operating Expenditures
ORF	Ontario Research Foundation
oz	Ounce (troy)
oz/t	Ounce per Short Ton
P&ID	Piping and Instrumentation Diagram
Pa	Pascal

Abbreviation	Meaning or Units
PAG	Potentially Acid Rock Drainage Generating
PAH	Polycyclic Aromatic Hydrocarbons
PALCE	Protection of aquatic life – chronic effects
PAX	Potassium Amyl Xanthate
Pb	Lead
PCAO	Preventing Contamination of Aquatic Organisms
PDA	Pre-Development Agreement
PEA	Preliminary Economic Assessment
PEV	Plug-in Electric Vehicle
PF	Power Factor
PFS	Pre-Feasibility Study
PGGS	Permit for Geological and Geophysical Survey
ph	Phase (electrical)
pH	Potential Hydrogen
PIR	Primary Impurity Removal
PLC	Programmable Logic Controllers
PP	Preproduction
ppb	Part per Billion
ppm	Part per Million
psi	Pounds per Square Inch
PSRTC	Politique des sols et rehabilitation des terrains contaminés
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance / Quality Control
QCR	Québec Central Railway
QKNA	Quantitative Kriging Neighbourhood Analysis
QMA	Québec Mining Act
QNS&L	Québec North Shore and Labrador Railroad
QP	Qualified Person
RCM	Regional County Municipality
RCMS	Remote Control and Monitoring System
REC	Rare Effect Concentration

Abbreviation	Meaning or Units
RER	Rare Earth Magnetic Separator
RES	*Résurgences des eaux souterraines dans les eaux de surface*
RESES	Critères de qualité des eaux souterraines de résurgences dans les eaux de surface
RMME	Regulation in Regard to Metal Mining Effluen
RMR	Rock Mass Rating
ROM	Run of Mine
rpm	Revolutions per Minute
RQD	Rock Quality Designation
RREIARP	Regulation in Regard of the Environmental Impact Assessment and Review of certain Projects
RWI	Bond Rod Mill Work Index
S	South
S	Sulphur
S/R	Stripping Ratio
SAG	Semi-Autogenous Grinding
Sb	Antimony
SCC	Standards Council of Canada
scfm	Standard Cubic Feet per Minute
SCIM	Squirrel Cage Induction Motors
SCSE	SAG Circuit Specific Energy
SE	South East
sec	Second
Set/y/unit	Set per Year per Unit
SFE	Shake Flask Extraction
SFP	State Forest Permit
SG	Specific Gravity
SGS Geostat	SGS Canada Inc. – Geostat office in Blainville, Québec, Canada
SGS Lakefield	SGS Lakefield Research Limited of Canada
SHC	Self-Heating Capacities
SIR	Secondary Impurity Removal
SLO	Social Licence to Operate
SMC	SAG Mill Comminution

Abbreviation	Meaning or Units
SNRC	*Système National de Référence Cartographique*
SO_4	Sulphate
SolFe	Sulphate Ferrous
SPI	SAG Power Index
SPLP	Synthetic Precipitation Leaching Procedure
SPT	Standard Penetration Tests
SR	Stripping Ratio
S_{tot}	Total Sulphur
SW	Southwest
SW	Switchgear
SWOT	Analysis in Wood 2018
t	Metric Tonne
t/d	Metric Tonne per Day
t/h	Metric Tonne per Hour
t/h/m	Metric Tonne per Hour per Metre
t/h/m^2	Metric Tonne per Hour per Square Metre
t/m	Metric Tonne per Month
t/m^2	Metric Tonne per Square Metre
t/m^3	Metric Tonne per Cubic Metre
t/y	Metric Tonne per Year
Ta	Tantalum
TCLP	Toxicity Characteristic Leaching Procedure
TDEM	Time Domain Electromagnetic
TDS	Total Dissolved Solids
TEL	Threshold Effect Level
Ti	Titanium
TIN	Triangulated Irregular Network
Tl	Thallium
TMF	Tailings Management Facilities
ton	Short Ton
tonne	Metric Tonne
TOR	Terms of Reference

Abbreviation	Meaning or Units
TotFe	Total Iron
FTSF	Filtered Tailings Storage Facility
TSS	Total Suspended Solids
U	Uranium
U/F	Under Flow
UGAF	Furbearer Management Units
ULC	Underwriters Laboratories of Canada
UQAT	University of Québec in Abitibi-Témiscamingue
URSTM	Unité de Recherche et de Service en Technologie Minérale
USA	United States of America
USD	United States Dollar
USGPM	Us Gallons per Minute
UTM	Universal Transverse Mercator
V	Vanadium
V	Vertical
V	Volt
VAC	Ventilation and Air Conditioning
VFD	Variable Frequency Drive
VLF	Very Low Frequency
W	Watt
W	West
WHIMS	Wet High Intensity Magnetic Separation
WHO	World Health Organization
WRA	Whole Rock Analysis Method
WSD	World Steel Dynamics
wt	Wet Metric Tonne
X	X Coordinate (E-W)
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence

Abbreviation	Meaning or Units
y	Year
Y	Y coordinate (N-S)
Z	Z coordinate (depth or elevation)
ZEC	*Zone d'exploitation contrôlée*
Zn	Zinc
Zr	Zirconium

29 CERTIFICATE OF QUALIFIED PERSON

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CERTIFICATE OF QUALIFIED PERSON

To accompany the Report entitled "*NI 43-101 Technical Report – Feasibility Study Update – Lac Knife Graphite Project, Québec*" filed on April 14, 2023, with an effective date of March 6, 2023 (the "Technical Report"), prepared for Focus Graphite Inc. ("Focus" or the "Company").

I, *Claude Bisaillon, P. Eng.,* Quebec, do hereby certify that:

1. I am Senior Geological Engineer with DRA Global Limited located at 555 Blvd René-Lévesque West, 6th Floor, Montreal, Quebec, Canada H2Z 1B1;
2. I am a graduate from Concordia University in Montreal, Quebec in 1991 with a B.Sc. in geology and from the Université Laval in Quebec City, Quebec in 1996 with a B.Ing. in geological engineering;
3. I am a registered member of "*Ordre des Ingénieurs du Québec*" (#116407). I am a Member of the Canadian Institute of Mining, Metallurgy and Petroleum;
4. I have worked as a geological engineer continuously since graduation from university in 1996. My relevant experience for the purpose of the Technical Report is:
   - Over 26 years of consulting in the field of Mineral Resource estimation, orebody modelling, mineral resource auditing and geotechnical engineering in Canada, the USA, Asia and South America.
   - Participated and/or supervised several Mineral Resource Estimates;
   - Lac Tétépisca NI 43-101 Technical Report with Mineral Resource Estimate, Focus Graphite Inc., April 2022;
   - Desk top Due Diligence of two Graphite projects in Northern Europe, Confidential client, August 2022.
   - Participation in the preparation of several NI 43-101 Technical Reports QP Review, audits, due diligence, interpretation of geoscientific data for several projects.
5. 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;

6. I am independent of the issuer applying all the tests in section 1.5 of NI 43-101.
7. I have participated in the preparation of this Technical Report and am responsible for Sections 4 to 12 and 23. I am also responsible for the relevant portions of Sections 1, and 25 to 27 of the Technical Report.
8. I have visited the property site on July 15 to 16, 2021.
9. I have had no prior involvement with the property that is the subject of the Technical Report.
10. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in this Report;
11. 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 the 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.

Dated this 14 day of April 2023

"Original Signed and Sealed on file"
Claude Bisaillon, P. Eng.
Senior Geological Engineer
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CERTIFICATE OF QUALIFIED PERSON

To accompany the Report entitled "*NI 43-101 Technical Report – Feasibility Study Update – Lac Knife Graphite Project, Québec*" filed on April 14, 2023, with an effective date of March 6, 2023 (the "Technical Report"), prepared for Focus Graphite Inc. ("Focus" or the "Company").

I, *Schadrac Ibrango, P.Geo., Ph.D., MBA,* do hereby certify that:

1. I am a Lead Geology and Hydrogeology Consultant with DRA Global Limited located at 555 Blvd René-Lévesque West, 6th Floor, Montreal, Quebec Canada H2Z 1B1.
2. I am a graduate from University of Ouagadougou (Burkina-Faso) with a Master's Degree in Geology in 1998, a Ph.D. in Engineering of Darmstadt University of Technology (Germany) in 2005 and an executive MBA from Université du Québec à Montréal (Canada) in 2016.
3. I am a registered member of the Ordre des Géologues du Québec (OGQ), membership # 1102 and Professional Engineers & Geoscientists of Newfoundland and Labrador, membership # 07633.
4. I have worked continuously as a geologist for more than 25 years in the mining industry since my graduation from university.
5. I have worked on similar projects to the Lac Knife Graphite Project in Canada and in Africa; My experience for the purpose of the Technical Report includes:
   - Hands-on experience in generation and exploration of magmatic, hydrothermal, and metamorphic deposits.
   - Design, implementation and supervision and implementation of drilling programs.
   - Participation in the preparation of parts of several other NI 43-101 compliant Technical Reports related to different commodities including graphite.
6. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43- 101) and certify that by reason of my education, affiliation with a professional association (as defined by NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
7. I am independent of the issuer applying all of the tests in section 1.5 of the NI 43-101.

8. I have participated in the preparation of this Technical Report and am responsible for Section 14. I am also responsible for the relevant portions of Sections 1, and 25 to 27 of the Technical Report.

9. I have not visited the property that is the subject to this Technical Report.

10. I have not had prior involvement with the property that is the subject of the Technical Report.

11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.

12. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated this 14th day of April 2023

"Original Signed and Sealed on file"
Schadrac Ibrango, P.Geo., Ph.D., MBA
Lead Geology and Hydrogeology Consultant
DRA Global Limited

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I, *Ghislain Prévost, P. Eng., B. Mining Eng, M.Sc. A.,* Montreal, Quebec, do hereby certify that:

1. I am Principal Mining Engineer with DRA Global Limited with an office at suite 600, 555 René-Lévesque Blvd. West, Montreal, Quebec, Canada;
2. I am a graduate from "*École Polytechnique de Montréal*" with Bachelor of Mining Engineer in 1996 and a Master degree Applied Science in Mineral Engineering in 1999.
3. I am a registered member of "*Ordre des Ingénieurs du Québec*" (# 119054).
4. I have practiced my profession continuously since 1999 with over 24 years of experience in mining exploration in industrial minerals, bauxite, gold, silver, and base metals projects across Canada and worldwide.
5. I have worked on similar projects to the Lac Knife Graphite Project in North America and Africa; my experience for the purpose of the Technical Report includes:
    - Design, scheduling, cost estimation and Mineral Reserve Estimate for several underground and open pit studies.
    - Participation and author of several NI 43-101 Technical Reports.
6. I have read the definition of "qualified person" set out in the NI 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI 43 101.
7. I am independent of the Company applying all the tests in Section 1.5 of NI 43-101.
8. I have participated in the preparation of this Technical Report and am responsible for Sections 15 and 16. I am also responsible for the relevant portions of Sections 1, 21.2, and 25 to 27 of the Technical Report.

9. I did not visit the property that is the subject to the Technical Report.

10. I have had no prior involvement with the property that is the subject of the Technical Report.

11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.

12. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated this 14th day of April 2023

"Original Signed and Sealed on file"

Ghislain Prévost, P. Eng., B. Mining Eng, M.Sc.A.
Principal Mining Engineer
DRA Global Limited

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I, *Jordan Zampini, P. Eng.,* Quebec, do hereby certify that:

1. I am a Senior Process Engineer with DRA Global Limited located at 555 Blvd René-Lévesque West, 6th Floor, Montreal, Quebec Canada H2Z 1B1;
2. I am a graduate from McGill University, Montreal, Quebec with a Bachelor of Materials Engineering (Metallurgy) in 2012;
3. I am a registered member of Ordre des ingénieurs du Québec (OIQ # 5028661);
4. I have worked as an Engineer in mining, mineral processing, and metallurgy continuously since my graduation from university. I have 10 years of experience as a metallurgical or process engineer.
5. I have worked on similar projects to the Lac Knife Graphite Project in North America; my experience for the purpose of the Technical Report includes:
   - Process deliverable including flow sheets, design criteria, material balances, equipment lists, equipment sizing / selection, and cost estimates for many process plants;
   - Engineering study (PEA/Scoping, PFS, FS, and Detailed Engineering) project work on many minerals processing projects;
   - Analysis and reporting on metallurgical test work programs for many mineral processing projects, as well as test supervision, data analysis, modelling, and process simulation;
   - Participation and author of several NI 43-101 Technical Reports.
6. I have read the definition of "qualified person" set out in the NI 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI 43-101.
7. I am independent of the Issuer applying all the tests in Section 1.5 of NI 43-101.

8. I have participated in the preparation of this Technical Report and am responsible for Sections 13 and 17. I am also responsible for the relevant portions of Sections 1, 21.2, and 25 to 27 of the Technical Report.

9. I did not visit the property that is the subject to the Technical Report.

10. I have had no prior involvement with the property that is the subject of the Technical Report.

11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.

12. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated this 14th day of April 2023

"Original Signed and Sealed on file"
Jordan Zampini, P. Eng.
Senior Process Engineer
DRA Global Limited

NewFields
Perspective. Vision. Solutions.

CERTIFICATE OF QUALIFIED PERSON

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I, *Leon Botham, MSCE, P.Eng.*, do hereby certify:

1. I am a Principal Engineer with NewFields Canada Mining & Environment ULC located at 640 Broadway Avenue, Suite 204. Saskatoon, SK S7N 1A9 Canada.
2. am a graduate of the University of Saskatchewan in Saskatoon, Canada (B.E. Civil Engineering in 1988) and Purdue University in Indiana, United States (MSCE Civil/Geotechnical Engineering in 1991).
3. I am a registered member in good standing of the Association of Professional Engineers and Geoscientists of Saskatchewan (License #06604), the Engineers and Geoscientists British Columbia (License #35852), the Professional Engineers of Ontario (License #90325408), the Engineers Yukon (License #1482), the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (License #L1194) and a Member of the Canadian Institute of Mining, Metallurgy and Petroleum.
4. I have worked in the field of Mine Waste Management, Mine Water Management and Geotechnical Engineering for a total of 33 years since my graduation from University. I have relevant experience in tailings facility design, construction, feasibility studies and technical report preparation for projects in Canada and internationally.
5. I have worked on similar projects to the Lac Knife Graphite Project in North and South America; my experience for the purpose of the Technical Report includes:
   - New Pacific Metals Corp., Silver Sand Deposit Preliminary Economic Assessment.
   - UEX Corporation, West Bear Deposit Feasibility Study
   - Barrick Gold Corporation, Williams Mine Expansion Feasibility Study
   - Participation and author of several NI 43-101 Technical Reports.
6. I have read the definition of "qualified person" set out in the NI 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI 43 101.
7. I am independent of the issuer applying all the tests in Section 1.5 of NI 43-101.
8. I am responsible for the preparation of Sections 18.6 to 18.8 of the Technical Report. I am also responsible for the relevant portions of Sections 1, 25 to 27 of the Technical Report.
9. I personally visited the property that is the subject to the Technical Report (on September 9 to 12, 2021).

10. I have had no prior involvement with the property that is the subject of the Technical Report.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
12. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated this 14 day of April 2023

""*Original Signed and Sealed on file*""
Leon C. Botham, MSCE, P.Eng.
Principal Engineer
NewFields Canada Mining & Environment ULC

CERTIFICATE OF QUALIFIED PERSON

To accompany the Report entitled "*NI 43-101 Technical Report – Feasibility Study Update – Lac Knife Graphite Project, Québec*" filed on April 14, 2023, with an effective date of March 6, 2023 (the "Technical Report"), prepared for Focus Graphite Inc. ("Focus" or the "Company").

I, *Denys Vermette, P. Geo., M. Sc, M. Sc. A.,* do hereby certify:

1. I am a Senior Geologist, Mining Environment with IOS Services Géoscientifiques inc., located at 1740, chemin Sullivan, Val-d'Or, Québec, Canada, J9P 7H1.
2. I am a graduate from Université Laval (Quebec City, Quebec) with a Bachelor of Science (Geology) in 1986. In addition, I obtained a master's degree in Geology from Université Laval (Quebec City, Quebec) in 1989 and a master's degree in Mineral Engineering (mining environmental specialty) from Université de Montréal, École Polytechnique de Montréal (Montréal, Québec) in 2018.
3. I am a registered member of *Ordre des Géologues du Québec* (OGQ No. 564).
4. I have worked continuously as a geologist for a total of thirty-seven (37) years since graduating in 1986. I acquired my expertise in mineral exploration with SOQUEM, Agnico-Eagle, Noranda, Noranda-Falconbridge, Alexis Minerals Corporation, QMX Gold and Alexandria Minerals.
5. I have worked on similar projects to the Lac Knife Graphite Project in North America; my experience for the purpose of the Technical Report includes:
    - Managing and supervising exploration work on several projects in Quebec for gold, base metals, and high technology minerals.
    - Field mapping, soil surveys and core logging including supervision and implementation of several drilling programs.
    - Managing environmental works including contractors, consultants, and communications with the Quebec Environmental Agency.
    - Selection of representative core samples for environmental characterization.
    - Carried out and interpreted results from lixiviation, static and kinetic environmental tests.
    - Mineralogical studies for economic and environmental characterizations.
    - Compile, review and interpreted geoscientific data.

6. I have read the definition of “qualified person” set out in the NI 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI 43 101.
7. I am independent of the issuer applying all the tests in Section 1.5 of NI 43-101.
8. I am responsible for the preparation of Section 20. I am also responsible for the relevant portions of Sections 1, 25 to 27 of the Technical Report.
9. I personally visited the property that is the subject to the Technical Report on September 9 to 12, 2021.
10. I have been involved with the property that is the subject of the Technical Report since 2018 as Senior Geologist, Mining Environment responsible for updating the Environmental and Social Impact Assessment (ESIA) study.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
12. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated this 14 day of April 2023

“Original Signed and Sealed on file”
Denys Vermette, P. Geo., OGQ #564
Senior Geologist, Mining Environment
IOS Services Géoscientifiques

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I, *Daniel M. Gagnon, P. Eng.,* do hereby certify:

1. I am Vice President Mining, Geology and Met-Chem Operations, with DRA Global Limited located at 555 René Lévesque West, 6th Floor, Montreal, Quebec Canada H2Z 1B1.
2. I am a graduate of École Polytechnique de Montréal, Montreal, Quebec, Canada in 1995 with a bachelor degree in Mining Engineering.
3. I am registered as a Professional Engineer in the Province of Quebec (Reg. #118521).
4. I have worked as a Mining Engineer for a total of 27 years continuously since my graduation.
5. I have worked on similar projects to the Lac Knife Graphite Project in North and South America; my experience for the purpose of the Technical Report includes:
   - Design, scheduling, cost estimation and Mineral Reserve estimation for several open pit studies similar to Lac Knife in Canada, the USA, South America, West Africa, and Morocco.
   - Technical assistance in mine design and scheduling for mine operations in Canada, the USS, and Morocco.
   - Participation and author of several NI 43-101 Technical Reports.
6. I have read the definition of "qualified person" set out in the NI 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI 43 101.
7. I am independent of the Company applying all the tests in Section 1.5 of NI 43-101.

8. I have participated in the preparation of this Technical Report and am responsible for Sections 1 to 3, 18 to 19, 21, 22, and 24, with the exception for Sections 18.6 to 18.8. I am also responsible for the relevant portions of Sections 25 to 27 of the Technical Report.

9. I did not visit the property that is the subject to the Technical Report.

10. I have had no prior involvement with the property that is the subject of the Technical Report.

11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.

12. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated this 14th day of April 2023

"Original Signed and sealed on file"
Daniel M. Gagnon, P. Eng.
VP Mining, Geology and Montreal Operations
DRA Global Limited