LOLA GRAPHITE PROJECT

NI 43-101 TECHNICAL REPORT – UPDATED FEASIBILITY STUDY

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IMPORTANT NOTICE

This Report, following National Instrument 43 101 rules and guidelines, was prepared for SRG Mining Inc. (SRG) by DRA Global Limited (DRA). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in DRA's services, based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this Report. This Report can be filed as a Technical Report with Canadian Securities Regulatory Authorities pursuant to National Instrument 43-101, Standards of Disclosure for Mineral Projects. Except for the purposes legislated under Canadian securities laws, any other uses of this Report by any third party are at that party's sole risk.

This Technical Report contains estimates, projections, and conclusions that are forward-looking information within the meaning of applicable laws. Forward-looking statements are based upon the responsible Qualified Person's (QP) opinion at the time they are made but, in most cases, involve significant risks and uncertainty. Although each of the responsible QPs has attempted to identify factors that could cause actual events or results to differ materially from those described in this Report, there may be other factors that could cause events or results not be as anticipated, estimated or projected. There can be no assurance that forward-looking information in this Report will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements or information, Accordingly, readers should not place undue reliance on forward-looking information. Forward-looking information is made as of the effective date of this Technical Report, and none of the QPs assume any obligation to update or revise it to reflect new events or circumstances, unless otherwise required by applicable laws.

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1 EXECUTIVE SUMMARY

The Lola Graphite Deposit is 100 % owned by SRG Guinée SARL, a wholly owned subsidiary of SRG Mining Inc. (SRG), formerly SRG Graphite Inc. SRG is a Canadian mineral resources company headquartered in Montreal, Canada.

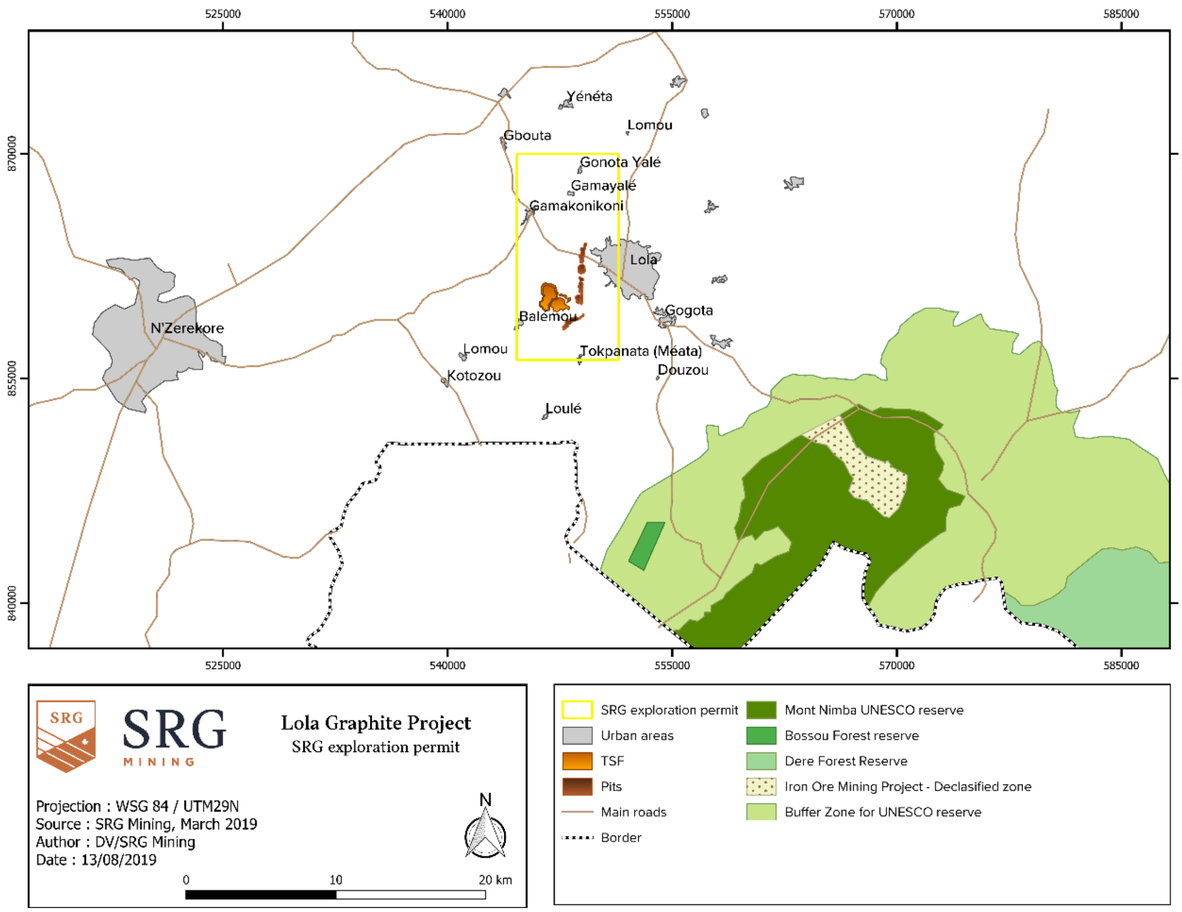
The Lola Graphite occurrence is located near the town of Lola in southeastern Guinea, 1,000 kilometres (km) from Conakry, the capital of the Republic of Guinea.

SRG has mandated DRA, a division of DRA Global Limited (DRA) to complete this Technical Report on the Feasibility Study (FS), following National Instruments 43-101 (NI 43-101) rules and guidelines, regarding the Lola Deposit to advance the Project.

1.1 Property Description, Location, and Ownership

The Lola Graphite occurrence is located 3.5 km west of the town of Lola in south-eastern Guinea, 1,000 km from the capital Conakry. The occurrence is 50 km east of the border with Côte d'Ivoire (Figure 1.1).

Figure 1.1 – Lola Graphite Location PR 5349



The original Lola Graphite Exploration license was granted to SRG in 2013 for an initial period of three (3) years, renewable for two (2) additional periods of two (2) years each. The Property was initially formed by four (4) explorations licenses (Permis de Recherche 4543) for a total of about 380 km2.

SRG applied for renewal of the Permit for two (2) years in 2016 and in 2018.

On August 10, 2018, the Government of Guinea awarded SRG Guinée, through ministerial order NoA2018/5349/MMG/SGG, the Lola Graphite research permit for a final two-year period, and, as per the legislation, the surface area was reduced from 187 km^2 to 94.38 km^2.

The above research permit was cancelled on November 6, 2019, when a 15-year renewable mining permit was issued through a presidential order NoD/2019/291/PRG/SGG, for the same surface area.

1.2 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

Guinea is divided into four (4) main regions: Maritime Guinea, also known as Lower Guinea or the Basse-Côte lowlands; the cooler, mountainous Fouta Djallon that runs roughly North-South through the middle of the country; the Sahelian Upper-Guinea to the Northeast; and the Forested Guinea, a forested jungle regions in the southeast where the Lola Project is located. Guinea's mountains are the sources for the Niger, Gambia, and Senegal rivers, as well as the numerous rivers flowing to the sea on the west side in Sierra Leone and Côte d'Ivoire.

The population of the Forested Guinea, where the Project take places, is composed of several ethnic groups.

Guinea's economy is largely dependent on agriculture and mineral production. It is the world's second largest producer of bauxite and has rich deposits of high-grade iron, diamonds, and gold.

The Property can be accessed from the town of Lola via a paved road and a network of bush tracks.

The terrain can be described as a gently undulating plain with one isolated topographic high reaching 75 m above the surrounding area. The elevation of the area varies from 485 m to 520 m above sea level.

The Project area falls within the Guineo-Soudanian climatic condition, which is a transition zone between equatorial and tropical climates. The area has distinct rainy and dry seasons and experiences an average of 1,600 mm of rain per annum.

1.3 History

The Lola Graphite occurrence was discovered during the construction of the Conakry-Lola Road in 1951. Between 1951 and 1955 the Bureau Minier de la France Outremer (BUMIFOM) excavated 309 shallow pits to further investigate its potential. At that time, BUMIFOM outlined a graphite rich occurrence 4 km long by 100 to 200 m wide.

Following the independence of Guinea, the Project was abandoned and subsequently forgotten until SRG Guinée "re-discovered" the occurrence in 2012 and initiated exploration and development work.

1.4 Geological Setting and Mineralization

The graphite-rich paragneiss is present at surface over 8.7 km with an average width of 370 m that can reach up to 1,000 m. The first 32 m or so of the deposit are well weathered (laterite), freeing graphite flakes from the silicate gangue and allowing for easy grinding with an optimal recovery of large and jumbo flakes. The graphite mineralization extends to depth into the non-weathered paragneiss.

Graphite mineralization is well exposed at surface on its entire strike length with visible mineralisation ranging from traces to 20% graphitic carbon (Cg) and often seen in higher concentration agglomerates.

1.5 Deposit Type

Graphite is one of the three (3) familiar, naturally occurring forms of the chemical element Carbon (C). The other two (2) varieties are amorphous carbon (distinct from amorphous graphite) and diamond. Graphite may be synthetically produced. Graphite is widely distributed throughout the world, occurring in many types of igneous, sedimentary, and metamorphic rocks.

Natural graphite generally occurs in one of three (3) forms:

- Microcrystalline or amorphous;
- Crystalline lump or vein; and
- Crystalline flake.

The Lola Graphite occurrence is a paragneiss-hosted, crystalline, flake-type occurrence.

1.6 Exploration Work and Drilling

1.6.1 Exploration

Since 2012, SRG Guinée has embarked in detailed prospecting programs aimed at delineating and characterizing the graphite occurrence. A grid with cutlines on 200 m spacing was established in the field for a total of 44-line km. A Max-Min electro-magnetic survey completed over the length of the occurrence was successful in outlining the boundaries with the surrounding country rock and identifying sectors with high graphite flakes concentration.

Several pits and trenches were excavated to characterize the short-scale variability of the graphite mineralization within the lateritic profile. The data from 10 (ten) of these trenches were used in the resource estimation.

A photogrammetric survey was performed over the deposit using a SenseFly's Ebee drone to produce a Digital Terrain Model (DTM). A detailed topographic survey completed by Effigis Geo-Solutions Inc. generated detailed maps from satellite data.

Mineralogical and petrological investigations were performed at the University of Franche-Comté, France, and several metallurgical tests were completed in 2014, 2015, and 2016.

Several mineralogical and petrological studies were also performed by Actlabs and through a graduate study at the University of Franche-Comté, France.

In 2017, ProGraphite GmbH and Dorfner/Anzaplan, both from Germany, performed additional detailed metallurgical investigations. A pre-feasibility study (PFS) was completed and additional testwork on the saprolite ore was developed in 2018-2019 by SGS Lakefield to build and optimise the metallurgical results.

1.6.2 Drilling

SRG's first drilling program started in October 2013 with 20 boreholes using their two (2) Jacro man-portable diamond drill rigs. An additional 16 boreholes were drilled in June and July 2014.

SRG's second drilling program started in April 2017 with a track mounted Coretech CSD 1300G drill rig contracted from Sama Nickel Côte d'Ivoire SARL (Sama Nickel).

Between March and mid-June 2018, drilling contractor Foraco Côte d'Ivoire (Foraco) completed 215 boreholes.

Between 2013 and 2018 a total of 22,590 m of core had been drilled in 648 holes. The resource estimate is based on 638 holes for a total of 22,239 m and 16,059 samples, the lengths of which add to 21,584 m (exclusive of the QC samples).

1.7 Mineral Processing and Metallurgical Testing

During the feasibility study work, the 2018-2019 process optimization program was completed on saprolite samples. Additionally, concept level testwork was completed by SGS to investigate hard rock and saprolite blends.

Incorporating hard rock ore has many benefits, such as:

- Increasing available ore for processing;
- Increased graphite recovery for blends as compared to a saprolite only feed;
- No desliming required when processing hard rock and saprolite blends;
- Better settling properties for tailings.

A semi-autogenous griding (SAG) mill will provide both scrubbing and size reduction. It will grind the ore to pass 0.8 mm on stack sizers.

Desliming of the rougher feed resulted in small graphite flakes losses but improved rougher flotation performance substantially when processing saprolite only. Desliming is not required for blends as per testwork.

Flotation of the domain composites displayed a considerable variation in terms of concentrate grades and graphite recovery, therefore a mill feed blending work is crucial step for the successful operation of the commercial plant.

A combination of intermediate concentrates polishing in a tumbling mill and polishing in the stirred mill is required to achieve the grade targets due to the presence of graphite interlayered with gangue minerals. A higher energy input is required to liberate the graphite from the interlayered gangue compared to gangue minerals that are attached to the outside of the graphite flakes.

Testing of the hard rock material demonstrated that the resource can be expanded with this type of rock when processed as purely hard rock as well as mixes with the saprolite.

As expected, the hard rock material is substantially harder than the saprolite, and preferentially to be processed as mixes with the soft rock. Mixing of hard and soft rock material has a positive effect on the metallurgical results via improved recovery, no reduction in concentrate grade, and coarser final concentrates as compared to saprolite feed processing.

A concentrate production campaign involved a pilot plant scale processing of 200 t of surface sample allowed generation of the concentrate for marketing purposes as well as generated several samples for the equipment supplier testing.

Equipment supplier test work included scrubbing, scrubber discharge and intermediate concentrate screening, and concentrate dewatering via the centrifuge. The tests were conducted in laboratories of reputable equipment suppliers and allowed to confirm the applicability of the equipment proposed for the commercial flowsheet and set the preferences for the concentrate dewatering.

1.8 Mineral Resources Estimate

An updated Mineral Resource Estimate (MRE) was prepared by SRG Mining (QP Dr. Marc-Antoine Audet, P. Geo., Ph.D. Geology) with an effective date of February 27, 2023. The current MRE was prepared in accordance with CIM Definitions and Standards on Mineral Resources and Mineral Reserves, and with NI 43-101. The classified Mineral Resource Estimate is summarized in Table 1.1 at a Cut-Off Grade of 1.00% Cg for Oxide and 1.40% Cg for Fresh Rock.

Table 1.1 – Mineral Resource Estimate – Effective Date February 27,2023

Category	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Oxide	7.78	4.04	314.6
Fresh Rock	0.47	4.01	19.0
Total Measured	*8.26*	*4.04*	*333.6*

Category	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Oxide	25.40	3.83	972.6
Fresh Rock	20.29	4.14	839.3
Total Indicated	*45.70*	*3.97*	*1,812.0*
Total Measured and Indicated Resources	**53.96**	**3.98**	**2,145.6**
Oxide	10.97	3.52	386.4
Fresh Rock	1.33	4.23	56.1
Total Inferred	**12.30**	**3.60**	**442.5**

Notes:

1. Mineral Reserves have 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. Resources are constrained by a Pseudoflow optimized pit shell using HxGn MinePlan software.
4. Pit shell was developed using a 34-degree pit slope in oxide and 42-degree pit slope in fresh rock, concentrate sales price of US$1,389/t concentrate, mining costs of US$2.75/t oxide, US$3.25/t fresh rock, processing costs of US$10.25/t oxide and US$15.18/t fresh rock processed, General and Administration (G&A) cost of US$1.52/t processed and transportation costs of US$50/t concentrate, 84.2% process recovery and 95.4% concentrate grade and an assumed 100,000 tpa concentrate production.
5. Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The Mineral Resources estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political environment, marketing, or other relevant issues. There is no certainty that Mineral Resources will be converted to Mineral Reserves.
6. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and cannot 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.
7. Contained graphite without mining loss, dilution, and processing recovery (In-situ).
8. The effective date of the estimate is February 27, 2023.
9. The open pit Mineral Resources are estimated using a cut-off grade of 1.0% Cg oxide and 1.4% Cg fresh rock.
10. Totals may not add due to rounding.

Source: DRA, 2023

A comparison was made with the previous historical estimate (completed in 2019) and is summarized below in Table 1.2. A discussion of the key differences between the 2019 and 2023 estimates is detailed in Section 14

Table 1.2 – Comparison between the 2019 Historical Estimate and 2023 MRE

Category	2019 MRE			2023 MRE		
	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Oxide	6.84	4.39	300.3	7.78	4.04	314.6
Fresh Rock	-	-	-	0.47	4.01	19.0
Total Measured	*6.84*	*4.39*	*300.3*	*8.26*	*4.04*	*333.6*
Oxide	23.24	4.04	937.9	25.40	3.83	972.6

Category	2019 MRE			2023 MRE		
	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Fresh Rock	15.96	4.03	643.4	20.29	4.14	839.3
Total Indicated	*39.20*	*4.04*	*1,581.3*	*45.70*	*3.9*	*1,812.0*
Total Measured and Indicated	**46.03**	**4.09**	**1,881.6**	**53.96**	**3.98**	**2,145.6**
Oxide	1.20	3.81	45.6	10.97	3.52	386.4
Fresh Rock	3.05	3.73	113.8	1.33	4.23	56.1
Total Inferred	**4.25**	**3.75**	**159.36**	**12.30**	**3.60**	**442.5**

1.9 Mineral Reserve Estimate

The mine is planned as a conventional open pit operation with articulated haul trucks, hydraulic excavators, and loaders. The ore will be transported from the pit to either the mill or the appropriate ore stockpile, overburden will be transported to the overburden stockpiles, and the waste material will be transported to a waste stockpile. There will be separate ore stockpiles for oxide and fresh rock material to facilitate blending at the mill. The overburden and waste materials will be sent to the nearest stockpile available to reduce haulage times.

The Mineral Reserves for the Lola Graphite Project were prepared by Ghislain Prévost, P. Eng., Principal Mining Engineer with DRA; a Qualified Person as defined under NI 43-101.

The Mineral Reserves have been estimated based on a graphite concentrate selling price of US$1,289/t and a 17-year life of mine (LOM) plan.

Development of the LOM plan included pit optimization, pit design, mine scheduling, and the application of modifying factors to the Measured and Indicated Mineral Resources. The reference point for the Mineral Reserves is the feed to the primary crusher. The tonnages and grades reported are inclusive of mining dilution, geological losses, and operational mining losses.

The Mineral Reserves for the Project are estimated at 6.4 Mt of measured material at a Cg grade of 4.38% and 34.5 Mt of indicated material at a Cg grade of 4.09%, for a total of 40.9 Mt at a grade of 4.14%. This results in a stripping ratio of 0.88 to 1 (waste to ore). Table 1.3 presents the open pit Mineral Reserves for the Project.

Table 1.3 – Mineral Reserves Estimate – Effective Date February 27, 2023

Category	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Oxide	6.15	4.38	269.5
Fresh Rock	0.28	4.34	12.2
Total Proven	*6.43*	*4.38*	*281.8*
Oxide	20.38	4.10	835.5
Fresh Rock	14.12	4.08	576.2
Total Probable	*34.50*	*4.09*	*1,411.1*
Total Proven and Probable	**40.93**	**4.14**	**1,694.7**

Notes:

1. 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 February 27, 2023.
4. Mineral Reserves are included in Mineral Resources.
5. Pit shell was developed using a 34-degree pit slope in oxide and 42-degree pit slope in fresh rock, concentrate sales price of US$1,289/t concentrate, average mining costs of US$3.25 /t ore oxide, US$3.75 /t ore fresh rock, US$2.75 /t waste oxide and US$3.25 /t waste fresh rock, processing costs of US$12.71 /t processed, G&A cost of US$1.52 /t processed and transportation costs of US$50/t concentrate, 84.2% process recovery and 95.4% concentrate grade and an assumed 100,000 t/a concentrate production.
6. The Mineral Reserves are inclusive of mining dilution and ore loss.
7. Contained graphite before processing recovery. Mining loss and dilution applied.
8. The open pit Mineral Reserves are estimated using a cut-off grade of 1.9% Cg.
9. The stripping ratio for the open pits is 0.88 to 1.
10. The Mineral Reserves are stated as dry tonnes delivered at the crusher.
11. Totals may not add due to rounding.

Source: DRA, 2023

1.10 Mining Method

The Project consists in three (3) separated mineralized areas: North, Central, and South. North and Central areas have been separated by two (2) areas each one to avoid flooding zones.

SRG will develop the mine using a contractor operated fleet rather than operating the mine themselves. DRA received quotes from six (6) contractors. SRG elected to continue discussions with one of the contractors, whose quote was used to determine the mining Capex and Opex.

The mine will be operated year-round, seven (7) days per week, twenty-four (24) hours per day with three (3) 8-hour shifts per day. Fifteen days of weather delays are considered in the mine plan.

A mine plan was prepared to estimate a probable production scenario for the Project and assess the mine equipment fleet requirements, as well as the mine Capex and Opex for the financial model. The mine plan was based on feeding the mill a maximum of 2,565 kt of ore per year to produce 100 kt of concentrate per year. The mill is designed for a 45% fresh rock – 55% oxide blended feed. However, the deposit has only 35% fresh rock overall. Therefore, the design blend was maintained for as many years as possible, and the proportion of oxide in the feed was not allowed to exceed 75%. The only exception is the first year of production, where there will be a 100% oxide feed at the mill since the fresh rock material is located more at depth and the oxide material is easier to access earlier. During this period, the mill recovery is lowered to 73%. A three-month pre-production is planned prior to feeding the mill.

The mine plan was developed using HxGN MinePlan Schedule Optimizer (MPSO) based on the final pit design and the intermediate phases, and the 3D block model. Constraints were placed on the number of pits being mined in a single period to optimize the number of equipment necessary and reduce unnecessary equipment movement. Additionally, pits located closer to the mill were favoured in earlier periods to reduced haulage times and costs.

1.11 Recovery Methods

The mineral processing plant consists of a crushing area and a concentrator where material beneficiation and concentrate dewatering, screening, and packaging takes place.

The process flowsheet includes crushing, grinding, rougher flotation, polishing, and cleaner flotation. The back end of the concentrator includes tailings thickening, concentrate filtration and drying, dry screening and bagging of graphite products, and material handling.

All the tailings from the concentrator will be thickened and pumped to the tailings ponds. Reclaiming water from the tailings ponds has been considered in the process design to minimize freshwater makeup to the concentrator.

The graphite concentrate will be recovered by a conventional flotation process. Saprolite ore beneficiation process has an overall graphite recovery of 73.1%, producing a graphite concentrate grade of 95.4% Cg. The addition of up to 45% of fresh rock in the feed blend improves the overall graphite recovery to 84.2%. A suitable process flowsheet able to handle saprolite as well as a feed blend with fresh rocks has been developed for the Report. The overall LOM recovery is estimated at 83.6%.

Over the life of the mine, the plant will produce graphite concentrate divided into four (4) standard-size fractions: + 48 mesh, -48 + 80 mesh, -80 +100 mesh and -100 mesh.

1.12 Project Infrastructure

The Project includes infrastructure on-site and off-site.

On-site infrastructure includes a power plant, main access road and site roads, general site works, site electrical distribution and communication, site fire protection, fresh water, potable water and sewage treatment, auxiliary buildings, fuel storage and distribution, water treatment, and tailings and water management facilities.

At full production, the power demand of the Lola Project will be 10.8 MW. Electrical power will be provided by an on-site power plant supplying power at 11 kV, 3 phases, 50 Hz. Power shall be generated using five (5) medium-speed generator sets for a total installed power of 12.5 MW with four (4) units in operation and one (1) unit in stand-by. The gensets will run on Heavy Fuel Oil (HFO), but will be capable of running on diesel fuel if required. In addition, the plant will include two (2) "black-start" gensets of 1500 kVA each, running at 1,500 revolutions per minute (rpm) on diesel fuel, providing additional power in case two (2) main gensets, out of the five, are down.

The reticulation network is composed of a medium-voltage (MV) 11kV system and a low-voltage (LV) 400V system. When possible, electrical lines will be above-ground, either supported on poles or installed in cable trays. When above-ground distribution is not possible, cables will be buried in underground duct banks.

Off-site infrastructure includes improvement of roads and the construction of a frontier post at Bossou to allow shipping graphite concentrate through the port of Monrovia, in Liberia.

1.13 Market Studies and Contracts

Lola's graphite concentrate selling price was determined based on pricing information from Benchmark Minerals Intelligence (BMI), discussions SRG is currently having with potential clients as well as comparable concentrates pricing. The LOM average sale price used in this Report was established at $1,400 USD/tonne. This average price was estimated by factoring in the purity of the expected graphite concentrate and size fractions obtained during the metallurgical test work campaign detailed in Section 13 of this Report. The concentrate price was calculated as the weighted average of the sale price of each size fraction for a given purity.

No contracts have been established to date by SRG Mining at the time this Report was published, but discussions are ongoing with potential clients worldwide with a strong focus on the Chinese manufacturing market. The Company has not hedged, nor committed any of its production pursuant to an off-take agreement.

1.14 Environmental Studies, Permitting and Social or Community Impact

The information presented in this Section is, for the most part, translated and summarized from the report entitled "Étude d'impact environnemental et social Projet de Graphite Lola" by EEM

Environmental & Social Impact Ltd. (EEM), issued on February 8, 2019, and referred to as the Environmental and Social Impact Assessment (ESIA) in this Report.

The ESIA study included: stakeholder consultations, public consultations, landscape, soil and water resource studies, air and noise assessment, biological study, social study, and environmental and social management plan.

The Air Quality, Noise & Vibration Study (AQNV) done in 2019 by Independent Environmental Consultants (IEC) was updated to reflect the doubling of the capacity of the Project as summarized in Section 20. The updated AQNV Study evaluated the effects of increased emissions and noise by the power plant, process plant equipment, and mine equipment.

1.14.1 Geochemistry

A geochemical characterization program has been carried out at SGS Laboratories on representative soft waste, fresh rock waste, soft ore, fresh rock ore and tailings samples. All samples have been subjected to metals contents measurements, Acid Rock Drainage (ARD) tests and static leaching tests. Some samples have also been subjected to mineralogical analysis and kinetic leaching test.

Except for soft waste, all materials showed ARD potential. However, metals contents are generally low and low metals concentrations could be expected for waste rock dumps runoff, fresh rock ore stockpile runoff and all dewatering waters. However, those waters will require pH adjustment.

If manganese concentration is not a concern for authorities, no treatment will be required for the tailings effluent.

Soft ore stockpile runoff will require treatment for pH and probably for some metals concentrations (copper and iron). Mitigation measures should also be put in place under soft ore stockpiles in order to protect groundwaters.

1.14.2 Water Management

Process water for the mill will be pumped from a collection pond to the plant. Water will be reclaimed from three (3) sources:

- The tailings storage facilities (33%).
- The tailings thickener overflow (60% ; and
- The filters filtrate (7%).

Raw water will be collected in a fresh water settling pond and pumped into a raw water tank. If needed, the water can be pumped from the fresh water settling pond to the process water pond. In normal operation, the raw water will be used for some specific needs such as reactants preparation, gland seal, fire protection, etc. or utilized as domestic water.

Some effluents (fresh rock dump, tailings, dewatering waters) will require pH adjustment to respect IFC/World Bank recommendation.

1.14.3 Closure and Rehabilitation

At the end of the life-of-mine, SRG will either sell the project to another mining company or offer to hand it over to governmental authorities with first right of refusal. In case the project is sold, the transaction will ensure all environmental liabilities and closure responsibilities are transferred to the Buyer. If the mine is handed over to the local authorities, SRG will transfer to them the ownership of project installations, buildings, equipment, and inventory.

1.15 Capital and Operating Costs

1.15.1 Capital Cost Estimate (Capex)

The initial Capex estimate includes all the Projects' direct and indirect costs to be expended during the implementation of the Project, inclusive of an upcoming basic engineering as well as the execution phase, complete with detailed engineering. The Capex is deemed to cover the period starting at the approval by SRG of this Report and finishing after commissioning is achieved. It should hence be understood that this Capex excludes transfer to SRG's operations, performance test, start-up, ramp up, and operations.

All capital costs are expressed in United States Dollars (USD). Currency exchange rates are dated Q4 2022. Inflation and risk are not included in the estimate.

The initial Capex is presented in Table 1.4.

Table 1.4 – Initial Capex Summary

Description	Total ($ USD)
Mining	8,221,664
Process Plant	61,694,960
Tailings	3,560,996
Site Infrastructure	10,761,494
Power Plant and Distribution	35,675,737
Preliminary & General	16,096,695
Total Direct Costs	**136,011,546**

Description	Total ($ USD)
Indirect Costs	25,369,273
Owner's Costs	6,363,845
Contingency	16,933,883
Total Costs[1]	**184,678,547**

1. The totals may not add up due to rounding.

Source: DRA, 2023

1.15.2 Sustaining Capex

The Sustaining Capex over the LOM of 17 years is presented in Table 1.5.

Table 1.5 – Sustaining Capex

Item	Total over LoM ($ USD??)
Mining mobile equipment, Contractor Demob	601,943
Haulage roads	6,652,823
Power Plant	7,386,837
Tailings	54,621,759
On-site infrastructure (Concentrate transportation equipment)	10,322,400
Off-site infrastructure (Road Improvement and Customs Building)	4,634,122
Land acquisition	1,010,020
Contingency	8,522,990
Total Sustaining Capex	**93,752,895**

Source: DRA, 2023

It should be noted that the project assumes a Contractor-mining strategy. Hence no mining equipment replacement is included in the Sustaining Capex. Mining Contractor mobilization costs are included in the initial Capex.

1.15.3 Operating Cost Estimate (OPEX)

The Opex is presented in United States Dollars (USD) and uses prices obtained in Q4 2022. DRA developed these operating costs in conjunction with SRG, with specific inputs provided by external consultants for tailings disposal costs and concentrate transportation. Value Added Tax (VAT) and project financing and interest charges are not included in the Opex. Table 1.6 presents the operating costs summary by major Project area over the LOM.

Table 1.6 – Operating Costs Summary

Description	Average Annual Costs ($)[1]	Cost/tonne of concentrate ($/t)	Total Cost (%)
Mining	15,577,900	170.75	29.1
Process	30,065,524	325.26	55.4
General & Administration	4,791,723	51.84	8.8
Sub-Total[2]	*50,435,147*	*547.90*	*93.2*
Concentrate Transport	3,673,161	39.74	6.8
Total[2]	**54,108,308**	**587.60**	**100.0**

1. Excludes first and last year
2. Figures may not add due to rounding

Source: DRA, 2023

1.16 Economic Analysis

The Project has been evaluated using discounted cash flow analysis (DCF). Cash inflows were estimated based on annual revenue projections. Cash outflows consist of operating costs, capital expenditures, royalties, and taxes. In addition, the economic assessment assumed the project was financed entirely through equity.

The Net Present Value (NPV) of the project was calculated by discounting back cash flow projections throughout the LOM to the Project's valuation date using three (3) different discount rates, 6%, 8%, and 10%. The base case used a discount rate of 8%. The internal rate of return (IRR) and the payback period were also calculated.

Table 1.7 summarizes the economic/financial results of the Project for the base case. All figures are in USD currency.

Table 1.7 – Base Case Financial Results

Financial Results	Unit	Pre-tax	After-tax
NPV @ 8%	M USD	389	218
IRR	%	33	25
Payback Period	Year	2.7	3.2

Source: DRA, 2023

1.17 Interpretation and Conclusions

1.17.1 Conclusions

The 2023 Mineral Resource Estimate includes a pit-constrained measured and indicated resource in of 53.96 Mt grading 3.98% Cg and an inferred resource of 12.30 Mt grading 3.60% Cg, using a cut-off grade of 1.00% Cg in oxide and 1.40% Cg in fresh rock.

This Report for the Lola mineral resources is based on a 17-year Life of Mine open pit which includes 40.93 Mt of proved and provable mineral reserves at an average grade of 4.14% Cg with a stripping ratio of 0.88:1. Over 17-year Life of Mine, an average of 2.6 M tonnes per year of ore will be mined from the open pit to the process plant.

The graphite concentrate will be recovered by a conventional flotation process. Saprolite ore beneficiation process has an overall graphite recovery of 73.1%, producing a graphite concentrate grade of 95.4% Cg. The addition of up to 45% of fresh rock in the feed blend improves the overall graphite recovery to 84.2%. A suitable process flowsheet able to handle saprolite as well as a feed blend with fresh rocks has been developed for the Report. The overall LOM recovery is estimated at 83.6%.Based on market demand, it is anticipated that over the life of the mine, the plant will produce graphite concentrate divided into four (4) standard-size fractions: + 48 mesh, -48 + 80 mesh, -80 +100 mesh and -100 mesh.

The initial capital cost is evaluated at $185 M USD with sustaining capital costs of $94 M USD. The life of mine average operating cost is evaluated at $548/t and $40/t for concentrate transport.

At an average sale price of graphite concentrate of $1,400/tonne, the financial results indicate a before-tax Net Present Values (NPV) of 389 M USD at discount rates of 8%. The before-tax Internal Rate of Return (IRR) is 33 % with a payback period of 2.7 years. The after-tax NPV are 218 M USD at discount rates of 8 %. The after-tax IRR is 25 % and the payback period is 3.2 years.

1.17.2 Risk Evaluation

The following risks have been identified at this stage:

- Currently available comminution results lack information on variability which poses a limited risk on the sizing of the SAG mill. The currently planned metallurgical testing should be prioritized to confirm the sizing of the mill.
- Vendor test-work for the concentrate filtration is required to confirm current sizing of the filter-presses.
- Additional flotation testing of soft-hard rock blends is required to improve confidence on expected recovery and concentrate quality.

- There is a risk of equipment blockage when handling ROM ore as the ore a high moisture content and is exposed to open-air. There is a need to ensure mill front-end robustness of design for mill feed.
- There is a risk of graphite blockage in chutes and silos. Testing is required for the dried graphite concentrate to support the detailed design of silos.
- There is a risk of slippage in the project schedule caused by the metallurgical testwork. The laboratory quoted eight (8) months to complete the testwork. The risk is that the testwork takes more than eight (8) months to complete.
- There is an additional schedule risk related to the metallurgical testwork: Available hard rock core for testwork is being assessed, but should there be insufficient representative material, additional drilling will be required, causing a slippage in the testwork program.
- There is a risk that current geotechnical parameters for the laterite and saprolite are overestimated. Consequently, downgraded parameters may affect slightly the slope angle. Additional drilling, testing, and monitoring is required to confirm the initial parameters.
- Blasting in the North Pits, which are close to the milling plant, may represent a safety risk. The planning of blasting operations must be coordinated with plant operations.
- There is a risk that hydrogeological parameters are overestimated. Consequently, drilling dewatering wells and installing pumps may be needed. Additional drilling, testing, and monitoring are required to confirm the initial parameters.
- There is a risk that during an unusually wet rainy season, water rises above the flood-line, flooding the pits, posing risk to personnel resulting in disruption of the mine operations. Mitigation is by implementing proper preventative measures to monitor expected precipitations.

To continue to mitigate project risks, it is recommended that sufficient risk management effort be done in the next phase of the project. A formal risk review should be held at the onset of the next phase to identify and detail any special scope required early-on. Emphasis should be placed on conducting a full HAZOP review as per standard engineering practices.

1.17.3 Opportunities

The following elements have been identified as the main opportunities to improve the economics of the project:

- Include marginal ore as reserves in the LoM.
- Convert resources under the flood-line to reserves, if justifiable based on the Modifying Factors and confirmed by a hydrogeological and geotechnical study.
- Evaluate the possibility of including the TSF development in the mining contractor scope of work (to reduce haulage distances).

- Evaluate the possibility of co-disposal of mine waste and tailings.
- Evaluate the possibility of including the haulage and access roads in the mining contractor scope of work.
- Consider a “Schedule of rates” type of contract with the mining contractor based on an open book integrated set-up.
- Based on the results of the currently planned metallurgical test-work at SGS, re-evaluate the current comminution energy requirements.
- Based on the results of the currently planned metallurgical test-work at SGS, re-evaluate the mesh size distribution of the concentrate.
- Evaluate the option of a Build, Operate & Maintain (BOM) strategy for power generation.
- Evaluate the option of hiring a contractor to transport the concentrate to the port of Monrovia.
- Evaluate the possibility of eliminating the camp and housing employees in Lola.
- Group the equipment into large procurement packages to be able to negotiate lower prices.
- Investigate the possibility of equipment financing via export-support governmental agencies.
- Engage competent contractors early in the next phase of the project and consider alternative contract management strategies such as Guaranteed Maximum Price.

1.18 Recommendations

Considering the positive outcome of this Report, it is recommended to pursue the next phase of the Project through various aspects need to be monitored or done are listed below.

1.18.1 Mineral Resources

It is recommended to continue with additional work to further define the deposit as outlined below:

- The mineral resources remain open along strike and dip. Further exploration along the strike may extend the open pit life of mine operations.
- CCIC MinRes recommends infill drilling to upgrade all inferred resources within the resource pit shell to be converted to reserves and extend the life of mine operations.
- It is recommended that an advanced “grade control” model be prepared prior to mining, where a drill spacing study will be required to determine the optimum spacing for “grade control” drilling.

1.18.2 Mining

DRA recommends:

- A pit slope analysis in the fresh rock area.
- A detailed hydrogeological study be carried out. This study will provide an estimate of the quantity of water that is expected to be encountered during the mining operation.
- Complete hydrogeological and geotechnical study to determine if 1–100-year flood lines surface used has hard constraint for reserve pit shell generation can be removed.
- In-pit dumping may be a preferred option both operationally and from a geotechnical perspective. Detailed planning and design should include this option in future development plan.

1.18.3 Process

DRA recommends certain work for the next stage of the Project:

- Locked cycle flotation testing for hard and soft rock mixes is required to produce metallurgical results that closely replicate the commercial plant conditions and evaluate the produced recovery numbers and concentrate grade and particle size.
- Comprehensive variability testing should be conducted on samples of the soft and hard rock to develop an understanding of the full extent of metallurgical variation that may be encountered in the Lola deposit. Once the degree of variation is better understood, blending strategies can be developed for the commercial operation.
- Some variability comminution testing is recommended for the hard rock material to determine a hardness variation within this type of rock to reduce the process risks for the comminution equipment design.

1.18.4 Environmental and Social Management Plan

It is recommended to perform the following work in connection with the environmental and social management plan:

- Develop an Air Quality, Noise and Vibration Management Plan (AQNV-MP) should be developed to address ongoing monitoring programs and mitigative measures.
- Re-visit the AQNV impact assessment, particularly if there are substantive changes to the mining plan and/or process that would affect spatial or temporal extents of the analysis.
- To reduce SO_2 and NO_2 emissions consider installing generators which meet the emissions limits or increasing the stack high or exhaust velocity.
- Consider implementing noise controls around the Crusher and SAG mill and/or relocate the Camp to reduce the impact of noise on its occupants.
- Recover the stripped soil to be used at closure.

- Vegetate bare soil quickly; build drainage ditches, containment dikes around tank and fuel stations and settling pond to avoid runoff water.
- Reforest the surrounding of the pits and waste dumps with the ten (10) trees species identified as VU in priority.
- Drill additional piezometers around site infrastructure to establish water management plan and underground water quality and level monitoring procedures.
- Develop and implement air quality and noise management plan; Resettlement and compensation of affected communities.
- Develop and implement Influx Management Plan.
- Establish necessary monitoring measures with key performance indicators to measure the project's impact and the effectiveness of ongoing management measures.
- Develop and implement Community Health and Safety Management Plan, including dedicated Traffic Management Plan to cover communities along the export route and communicable diseases and sanitation & hygiene awareness campaigns.
- Develop, Implement and communicate local hiring policy with transparency.
- Use the Resettlement Action Plan (RAP) Framework to guide the resettlement and livelihood restoration program.

1.18.5 Tailings Storage Facility (TSF)

The following recommendations are proposed for consideration and evaluation during the detailed design of the TSFs:

- Update the water balance of the TSF for the new LOM of 17 years.
- Re-assess the freeboard of each phase of the TSF development according to the updated water balance.
- Re-assess the phasing of the construction of TSF1 and TSF2 and optimize for fewer phased wall lifts to produce a discontinuous construction period between the phases.

1.18.6 Hydrogeology

The following activities are recommended to acquire additional hydrogeological information, conduct a hydrogeological numerical modelling, and update the pits dewatering design:

- Acquire aerial photographs of the project area and conduct a detailed lineament analysis.
- Perform a ground geophysical investigation using electric methods to locate major faults around the pits.

- Drill selected points to assess productivity of deep aquifers and determine their hydrodynamical parameters.
- Update the hydrogeological and pits dewatering model and update the hydrogeological report.

1.18.7 GEOCHEMICAL

Geochemical leaching and ARD static tests must be carried on more waste and ore samples to obtain more information on variability and allow calculation of statistics (average, median, etc.).

Geochemical kinetic tests carried out on tailings, fresh rock ore, and soft ore must be continued to clearly predict medium and long terms behaviour of those materials. A new kinetic test must be carried out on a representative composite tailings sample produced at the pilot plant from soft ore and fresh rock ore in proportion similar to the proportion expected in the mining plan.

To have the volume of topsoil available for revegetation at closure of the different infrastructure, various topsoil stockpiles must be planned and located on the lay-out. Ideally, topsoil must be cleared and saved at industrial site, TSFs, waste dumps and pits location. Topsoil management plan must be developed in order to maintain agronomical characteristics and control wind and water erosion.

Water management plan must be optimized to reduce the number of sedimentation ponds. Considering the location of the various infrastructures, water with similar characteristics should be sent to the same pond for treatment before discharge. This strategy will limit the cost of ponds construction and pH adjustment installations. However, piping, and pumping costs could be higher. Following water management optimisation carried out during detailed engineering, the Capex and Opex will have to be updated.

The Capex and Opex associated with the water management plan are estimated at ±40% accuracy as they are not based on any level of design. It is recommended that both optimization of the current concept and a feasibility level design be undertaken so that a better level of accuracy can be attained with respect to project costs for this item.

It is strongly recommended that the Capex associated with surface water management be re-evaluated based on actual FS level design for the required infrastructure, rather than the current conceptual approach. This re-evaluation can also include an optimization phase.

2 INTRODUCTION

The purpose of this Report is to provide scientific and technical information concerning the mineral potential of the Lola Graphite Project in eastern Guinea.

The Republic of Guinea (*République de Guinée*), formerly known as French Guinea (*Guinée française*) is a country in West Africa bordered by Liberia and Sierra Leone to the South, Côte d'Ivoire and Mali to the East, and Senegal and Guinea-Bissau to the North and West (Figure 4.1).

The country is sometimes referred to as Guinea-Conakry to distinguish it from other parts of the wider region of the same name, such as Guinea-Bissau and Equatorial Guinea. Guinea has a population of 13.5 million and an area of 245,860 km2. Guinea was colonised by France during the XIXth century and established as a French colony in 1891. The country gained its independence in 1958.

2.1 Terms of Reference Scope of Study

The following Technical Report (herein after the Report) is a review and compilation of the exploration and metallurgical works performed by SRG on the Lola Graphite Property. It follows a similar report issued in August 2019 by SRG reflecting a production of 50,000 metric tons of graphite concentrate over a life-of-mine of 28 years. The current report is based on an average yearly production of graphite concentrate of approximately 94,000 metric tons over a life-of-mine of 17 years.

DRA Global Limited (DRA) has provided engineering and integration services for all aspects of the NI 43-101 Technical Report Updated Feasibility Study on the Lola Graphite Project. The geology sections of the Report were prepared by Marc-Antoine Audet, P. Geo., Ph.D., an independent geologist. Independent Environmental Consultants (IEC) updated the Air Quality, Noise & Vibration (AQNV) Study. Section 18.3 of the Report was reviewed by Guy Wiid (EPOCH) and Section 20.9 was updated by Luciano Piciacchia (BBA).

2.2 Qualified Persons

Table 2.1 provides the list of qualified persons as defined in Section 1.5 of NI 43-101 and their respective sections of responsibility.

Table 2.1 – Qualified Persons and their Respective Sections of Responsibilities

Section	Title of Section	Qualified Persons
1	Summary	Elie Accad and related QPs

Section	Title of Section	Qualified Persons
2	Introduction	Elie Accad
3	Reliance on Other Experts	Elie Accad
4	Property Description and Location	Elie Accad
5	Accessibility, Climate, Local Resources, Infrastructure and Physiography	Elie Accad
6	History	Marc-Antoine Audet
7	Geological Setting and Mineralization	Marc-Antoine Audet
8	Deposit Types	Marc-Antoine Audet
9	Exploration	Marc-Antoine Audet
10	Drilling	Marc-Antoine Audet
11	Sample Preparation, Analysis and Security	Marc-Antoine Audet
12	Data Verification	Marc-Antoine Audet
13	Mineral Processing and Metallurgical Testing	Volodymyr Liskovych
14	Mineral Resources Estimates	Marc-Antoine Audet
15	Mineral Reserve Estimates	Ghislain Prevost
16	Mining Methods	Ghislain Prevost
16.2	Mine Geotechnical Design	Claude Bisaillon
17	Recovery Methods	Volodymyr Liskovych
18	Project Infrastructure	Elie Accad and related QPs
18.3	Tailing Storage Facility	Guy Wiid (Epoch)
19	Market Studies and Contracts	Elie Accad
20 except for 20.8 and 20.9	Environmental Studies, Permitting and Social or Community Impact	Elie Accad
20.8	Hydrogeology	Schadrac Ibrango
20.9	Geochemical Characterization	Luciano Piciacchia (BBA)
21	Capital and Operating Costs	Alex Duggan and related QPs
22	Economic Analysis	Elie Accad
23	Adjacent Properties	Marc-Antoine Audet
24	Other Relevant Data and Information	Elie Accad
25	Interpretation and Conclusions	Elie Accad and related QPs
26	Recommendations	Elie Accad and related QPs
27	References	Elie Accad and related QPs

2.3 Effective Date and Declaration

This Report is considered effective as of February 27, 2023, and is in support of the SRG's press release, dated February 27, 2023, entitled "SRG Announces Positive Economic Results of Updated Feasibility Study for Lola Graphite Project".

DRA and collaborators in the current report are not insiders, associates, or affiliates of SRG and neither DRA nor any affiliate has acted as advisor to SRG, its subsidiaries or its affiliates, in connection with this Project.

The current Report provides an independent Technical Report for the estimate to complete for the Lola Graphite Project, in conformance with the standards required by NI 43-101 and Form 43-101F1.

The Mineral Reserves presented in this Report are estimates of the size and grade of the deposits based on several drillings and samplings and on assumptions and parameters currently available. The level of confidence in the estimates depends upon several uncertainties. These uncertainties include, but are not limited to, future changes in product prices and/or production costs, differences in size and grade and recovery rates from those expected, and changes in Project parameters.

2.4 Site Visit

In the context of the current FS, Mr. Schadrac Ibrango, a qualified person under the terms of NI 43-101, conducted a site visit to the Lola site on Jan 13-14, 2023.

In the context of the previous 2019 FS, the following qualified persons under the terms of NI 43-101, conducted a site visit to the Lola site as follows:

- Mr. Yves A. Buro on April 8-11, 2018.
- Ms. Silvia Del Carpio on May 13-15, 2019.
- Mr. Patrick Perez, on May 13-15, 2019.

2.5 Units and Currency

In this Report, all currency amounts are US Dollars (USD or $) unless otherwise stated. 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 used in this Report are listed in Section 27.

3 RELIANCE ON OTHER EXPERTS

The QPs prepared this Report using reports and documents as noted in Section 27. The Authors wish to make clear that they are qualified persons only in respect to the areas in this Report identified in their “Certificates of Qualified Persons”, submitted with this Report to the Canadian Securities Administrators.

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

The Qualified Persons (QP) who prepared this Report relied on information provided by experts who are not QPs. The QPs who authored the sections in this Report believe that it is reasonable to rely on these experts, based on the assumption that the experts have the necessary education, professional designations, and relevant experience on matters relevant to the Technical Report.

The QPs used their experience to determine if the information from previous reports was suitable for inclusion in this Technical Report and adjusted information that required amending. This Report includes technical information, which required subsequent calculations to derive subtotals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the QPs do not consider them to be material.

DRA has relied on reports and opinions previously provided by SRG and their Consultants (EEM) for information in Section 20 pertaining to Environment Studies, Permitting and Social or Community Impact. DRA has reviewed the content of this Section, except for Sections 20.8, and believes that it provides current and reliable information on environmental, permitting, and social or community factors related to the Project.

DRA is relying on the previous NI 43-101 reports and its referenced documents in relation to all pertinent aspects of the Property. The Reader is referred to these data sources, which are outlined in the “References”, Section 27 of this Report, for further details.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Location

The Lola Graphite occurrence is located 3.5 km west of the town of Lola in south-eastern Guinea, 1,000 km from Conakry. The occurrence is 50 km east of the border with Côte d'Ivoire (Figure 4.1).

The Property is centered on UTM WGS 84 zone 29N latitude 7° 48' 00" N (UTM 863,000 N) and longitude 8° 32' 00' W (UTM 551,000 E) (Figure 4.1). The area includes the communities of Lola and several small villages.

Figure 4.1 – Republic of Guinea, West Africa, Location of Lola Graphite Project

Source: DRA, 2019

4.2 Exploration Permit, Rights and Obligations

The land in Guinea is under federal jurisdiction and, as such, application to the government, through the Mine and Energy Department in Conakry, is required to obtain an Exploration Permit. The Exploration Permits are granted based on the proposed work program. The Permits are issued for an initial three-year (3) period, with two (2) renewal periods of two (2) years each. Each renewal will occur automatically if the holder has met all the obligations contained in the granting order and in the Mining Code.

If the Owner applies for renewal, a minimum work program adapted to the results of the preceding period and representing a financial outlay at least equal to that set out in the granting order must be proposed. At each renewal, 50% of the area must be relinquished.

An Exploration Permit confers on its holder the exclusive right to prospect for the type of mineral substance(s) for which the Permit is issued, within the limits of its area and without limitation as to depth. It does not give surface rights or access rights, and these rights must be negotiated with the landowners.

4.3 Property Ownership and Agreements

The Lola Graphite Deposit is 100% owned by SRG Guinée SARL, a wholly owned subsidiary of SRG Mining Inc. (SRG), formerly SRG Graphite Inc.

The original Lola Graphite Exploration licenses was granted to SRG in 2013 for a first period of three (3) years, renewable for two (2) additional periods of two (2) years each. The Property was initially formed by four (4) explorations licenses (Permis de Recherche 4543) for a total of about 380 km^2.

SRG applied for renewal of the Permit for two (2) years in 2016 and in 2018.

On August 10, 2018, the Government of Guinea awarded SRG Guinée, through ministerial order NoA2018/5349/MMG/SGG, the Lola Graphite research permit for a final two-year period, and, as per the legislation, the surface area was reduced from 187 km^2 to 94.38 km^2 upon renewal.

Above permit was cancelled on November 6, 2019, when a fifteen (15) year renewable mining permit was issued through presidential order NoD/2019/291/PRG/SGG, for the same surface area of 94.38 km^2; as depicted in Figure 4.2.

The property boundaries have not been surveyed in the field, but they are expressed by latitude and longitude coordinates.

4.4 Royalties Obligations

The grant by the State of a Mining Operation Title immediately gives the State a free-carried interest of up to a maximum of 15% in the capital of the company holding the Title. The State has the right to acquire a supplementary participation, in cash, according to the terms agreed upon with each relevant mining company within the scope of the Mining Agreement. This acquisition option may be scheduled over time, but may be exercised only once. The total participation held by the State may not exceed 35%.

A Mineral Royalty of three percent (3%) is applied to iron and base metals, but the current Code is silent on royalties applicable to graphite. However, the Code stipulates that royalties for any mineral substance not specified in the Code will be determined by regulation.

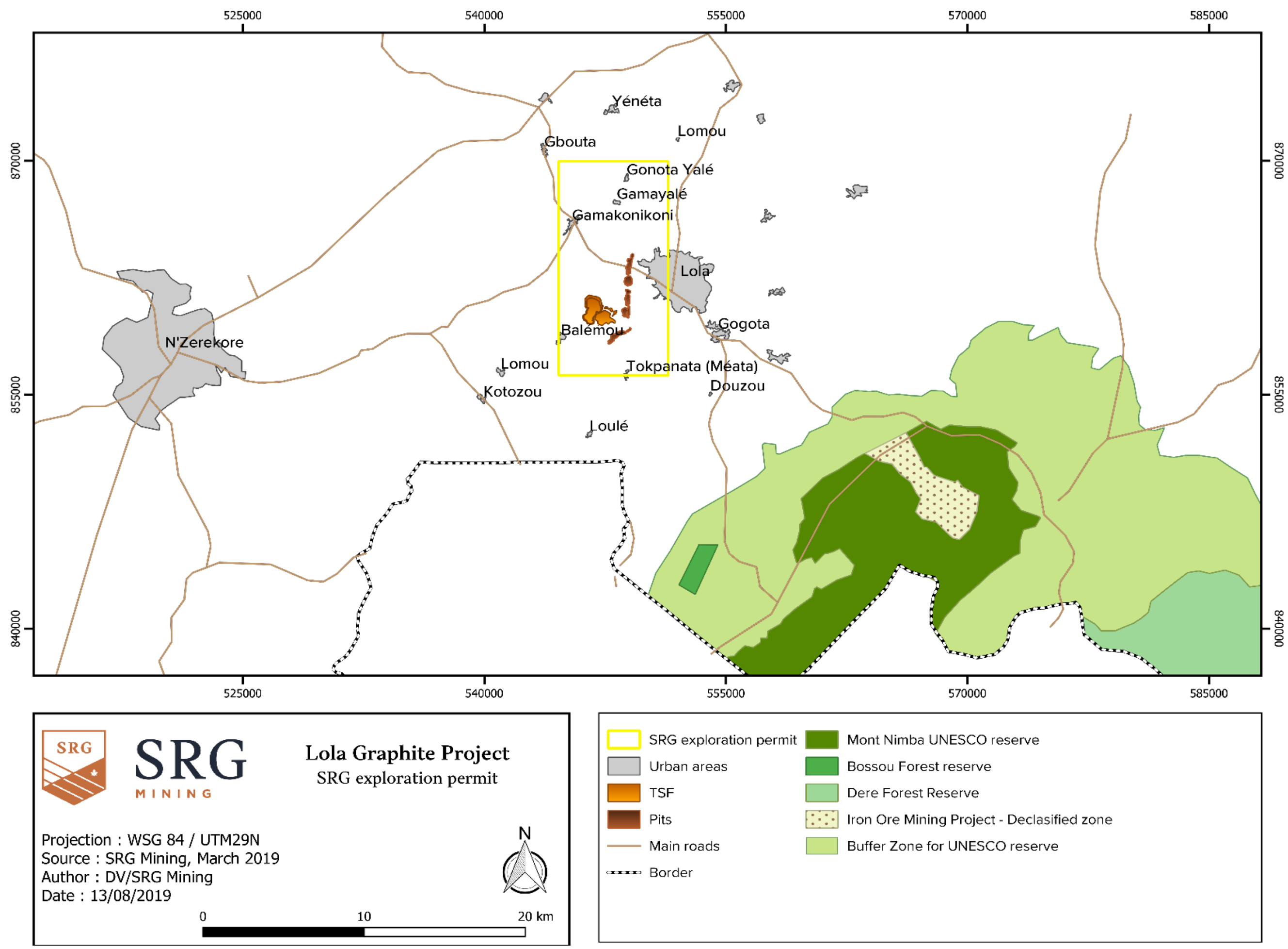
4.5 Permits, Environmental Liabilities and Risks

To the extent known by the Authors and SRG's team, there are no environmental liabilities associated with the Exploration Permit, and no surface right agreements are in place or are being negotiated.

No additional permits are required to perform exploration work on the Property. Drilling has been carried out on the Property and additional drilling can be completed under the same permits.

To the extent known by the Authors and SRG's team, there are no significant factors or risks that may affect access, title or the right or ability to perform exploration work on the Property.

Figure 4.2 – Lola Graphite Location Permis 22709



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

5.1 Accessibility

The terrain within the license area and in the immediate vicinity of the Lola Graphite occurrence is gently undulating, providing relatively easy access to any part of the Property. Access is provided from Lola via paved highway and on along a network of gravel roads, many of them built by SRG.

5.2 Climate, Vegetation

The Project area falls within the Guineo-Soudanian climatic condition, which is a transition zone between equatorial and tropical climates. The area has distinct rainy and dry seasons and receives an average annual rainfall of 1,600 mm. The rainy season extends from March to October. Temperatures range from a minimum of 10.8° in January to 34.7° in February (WMO data, 1961-1990).

The Project area is located at the transition zone between the tropical forest area and the northern savannah, where grassy woodland and occasional dry scrub are predominant.

The vegetation communities observed in the Project area are of the grassland type, with scattered trees and shrubs and moderate to open canopy.

5.3 Local Resources and Infrastructure

The population of Guinea is estimated at 10.5 million. Conakry, the capital and largest city, is the hub of Guinea's economy, commerce, education, and culture. Muslims represent 85% of the population in Guinea but the dominant religion in the Project area is Christianism. Guinea's people belong to 24 ethnic groups using their own vernacular languages. However, French is the official language of Guinea and the main language of communication.

The economy of the study area is largely dependent on agriculture, and much of it is on a subsistence basis. Small family-run plots of land are cultivated on a shifting agriculture basis. A cash economy also exists in the region and is fuelled by cash crops, logging, ranching, and roadside vendors servicing vehicular traffic.

Mineral production constitutes a large part of the Guinean economy. Guinea possesses one of the world's largest resources of bauxite and high-grade iron resources together with significant diamond and gold deposits, and undetermined quantities of uranium.

Bauxite mining and alumina operations in northwest Guinea historically provide about 80% of Guinea's foreign exchange. The Compagnie des Bauxites de Guinée (CBG) annually exports about 14 Mt of high-grade bauxite.

The Compagnie des Bauxites de Kindia (CBK), a joint venture between the Government of Guinea and United Company RUSAL (RUSAL), produces some 2.5 Mt annually. Dian, a Guinean/Ukrainian joint bauxite venture, has a projected production rate of 1 Mt per year, but is not expected to begin operations for several more years. The Alumina Compagnie de Guinée (ACG), formerly Friguia Consortium, produced about 2.4 Mt in 2004 as raw material for its alumina refinery. Both Global Alumina and Alcoa-Alcan have signed conventions with the Government of Guinea to build large alumina refineries with a combined capacity of about 4 Mt per year.

AREDOR, a mining joint venture between the Guinean Government (50%) and an Australian, British, and Swiss consortium began diamond production in 1984, mining stones that are 90% gem quality. Production stopped from 1993 to 1996 with First City Mining of Canada and finally the licence was cancelled by the Government in 2008. The bulk of diamonds currently derives from artisanal production.

The largest gold mining operation in Guinea is the Lefa mine in Lero, near the Malian border, that produced about 187.8 koz of gold in 2018. The mine is operated by Société Minière de Dinguiraye (SMD), a subsidiary of Nord Gold SE of London, UK.

Guinea has large reserves of high-grade iron ore, notably the Simandou iron ore project located approximately 700 km east of Conakry and roughly 300 km west of Lola. Simandou is one of the largest untapped high-grade iron resources estimated at 2,757 Mt at 65.5% Fe (Rio Tinto, March 2, 2018, Press Release).

The Lola municipality is the head of the prefecture of Lola, located in the Nzérékoré region. Despite its importance, with a population of 130,000 inhabitants, the municipality is not electrified.

SRG opened roads to provide access to the project area, as itis in a remote sector with poor infrastructure.

5.4 Physiography

Guinea is divided into four (4) geographic regions: Maritime Guinea (Lower Guinea or the Basse-Côte lowlands), the central Fouta Djallon mountains, the Sahelian Haute-Guinea to the northeast and the Forested Guinea, the jungle region in the southeast where the Project is located.

Guinea's mountains are the source for the Niger, the Gambia, and Senegal Rivers, as well as the numerous rivers flowing to the sea on the west side of the range in Sierra Leone and Côte d'Ivoire.

The terrain within the license area and in the immediate vicinity of the Lola Graphite occurrence, is gently undulating plain with one isolated topographic high reaching 75 m above the surrounding area. The elevation of the area varies from 485 m to 520 m above sea level.

5.5 Surface Rights

To the extent known by the Authors and the SRG's team, no surface right agreements are in place or under negotiation. SRG has confirmed that surface rights are independent of Mineral Rights and will be acquired on time when they will be required.

6 HISTORY

6.1 Prior Ownership and Ownership Changes

The Lola Graphite Deposit is 100% owned by SRG Guinée SARL, a wholly owned subsidiary of SRG Mining Inc. (SRG), formerly SRG Graphite Inc.

In 2012, the Republic of Guinea awarded the Lola Graphite Exploration licenses to SRG, through Arrêté No A2013/4543/MMG/SGG dated September 2, 2013, for a first period of three (3) years, renewable for two (2) additional periods of two (2) years each. The Property was initially formed by four (4) exploration licenses, (Permis de Recherche) globally named Permis de Recherche 4543, forming a rectangle of 27.9 km by 13.7 km for a total of about 380 km^2.

The application for renewal of the original Permit for two (2) years was filed with the Department of Mines and Energy on June 20, 2016, and was issued to SRG on August 29, 2016 by Arrêté A2016/4059/MMG/SGG. According to legislation, the surface area was reduced by approximately 50% from 380 km^2 to 187 km^2.

SRG filed the documentation for the second renewal for two (2) years on May 29, 2018, with the Department of Mines. The exploration permit was granted by Arrêté A/2018/5349/MMG/SGG dated August 10, 2018 (Figure 4.2). The surface area was further reduced by 50% to 94.38 km^2.

The property boundaries have not been surveyed in the field, but they are officially expressed by latitude and longitude coordinates.

6.2 Historical Exploration and Development – Lola Deposit

The Lola Graphite occurrence was discovered by the Bureau Minier de la France d'Outre-Mer (BUMIFOM) during the construction of the Conakry-Lola Road in 1951. Between 1951 and 1955 BUMIFOM excavated 309 shallow pits and outlined a graphite-rich occurrence four (4) km long and 100 to 200 m wide. BUMIFOM used 19 of the pits to estimate a historical resource. BUMIFOM abandoned the project that laid dormant until "re-discovered" by SRG in 2012.

In 1998, an inventory of the mineral resources of Guinea by BGR, a German federal agency, referred to the BUMIFOM note concerning the Lola Graphite occurrence.

In 1999, BRGM published a set of geological maps at a scale of 1:200,000 that include mention of the Lola Graphite occurrence (Description notice; map 34-33 N'Zérékoré-Tinsou).

Following the re-discovery in 2012, SRG's team had access at the Department of Mines in Conakry to BUMIFOM's historical documents pertaining to prospecting, deposit description, flotation test on graphitic schists (1951, 1953), and various metallurgical tests performed in 1953 and 1955.

In 2012, SRG initiated detailed prospecting programs aimed at delineating and characterizing the graphite occurrence.

6.3 Historical Resources and Reserves, Production

6.3.1 Introduction

An initial resource estimate for the Lola Graphite Deposit was completed in September 2016 by SRG and was updated as additional data were collected from diamond drilling and further independent validation was performed.

The criteria used for classifying all the historical estimated resources were based on confidence and continuity of geology and grades. All the historical resources were classified following the definitions and guidance established by the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 10, 2014).

The bulk density for all the historical resources was interpolated from measurements taken from core samples using the immersion method.

The Mineral Resource estimates were prepared using a block model constrained with 3D wireframes of the principal mineralized domains. Values for graphitic carbon were interpolated using the Ordinary Kriging (OK) interpolation methodology. A preliminary open pit optimization algorithm was run on the estimated grade block model to constrain the resources and support the CIM's requirement that mineral resources have "reasonable prospects for eventual economic extraction". An optimized pit shell was determined using the Lerchs-Grossman (LG) algorithm in the MineSight® software. Only mineralization contained within the pit shell has been included in the resource estimate.

6.3.2 Previous Resources Estimates

An initial resource estimate for the Lola Graphite Deposit was completed in September 2016 with a subsequent mineral update in February 2018. The later is documented in a Report available on SEDAR entitled: "*NI 43-101 Technical Report – Mineral Resource Estimate for Lola Graphite Project, Prepared by DRA/Met-Chem for SRG Graphite Inc.; Effective Date: September 30th, 2017; Issue Date: February 5th, 2018*".

The February 2018 Mineral Resource estimate is based on 172 boreholes for a total of 4,936 m and ten (10) trenches adding up to 1,326 m, for a total of 3,932 samples.

The resource includes the weathered portion of the deposit, the underlying graphite rich paragneiss bedrock remaining essentially untouched. The Mineral Resource roughly accounts for 18% of the 3.22 km^2 surface area of the entire deposit.

The February 2018 Mineral Resources estimate was performed by Marc-Antoine Audet, P.Geo., Ph.D. Mr. Audet is a Qualified Person (QP) for SRG.

A validation of the drill hole database, geological surfaces, and geological solids used to perform the Mineral Resource Estimate was realized by Ghislain Deschênes, P. Geo., QP from DRA, and independent from SRG. Mr. Deschênes agreed with the method and the results produced by SRG.

The results from the February 2018 Mineral Resource Estimate at a Cut-Off Grade of 3.0% Cg per tonne are presented in Table 6.1.

Table 6.1 – Lola Deposit - February 2018 Mineral Resource Estimate at a Cut-Off Grade of 3.0% Cg per Tonne

	Mineral Resources			
Cut-off Grade	Classification	Tonne	Cg	In-situ Cg
Cg %		(x1,000 t)	(%)	(t)
3.0%	Indicated	3,961	5.66	224,100
	Inferred	4,617	6.45	297,800

Source: DRA/SRG, 2018

6.3.3 Resources Estimate for a Preliminary Economic Assessment Study

A second resource estimate for the Lola graphite deposit was completed in June 2018 and is documented in a Report available on SEDAR entitled: "Lola Graphite Project, Technical Report – Preliminary Economic Assessment; Effective Date: June 14, 2018; Issue Date: August 2, 2018", and prepared by DRA/Met-Chem for SRG.

The Mineral Resource estimate is based on 395 boreholes, for a total of 12,086 m and ten (10) trenches for 1,326 m. The area accounted for this Mineral Resource represents roughly 33% of the 3.22 km^2 surface area of the entire deposit.

The mineral resources estimate was performed by Dr. Marc-Antoine Audet, P. Geo., Ph.D. Geology. Dr. Audet is a non-independent QP within the meaning of NI 43-101 Standards. However, under subsection 5.3(1) paragraph (c), an independent QP is not required for the filing of a mineral resource update if the mineral resource has changed by less than 100% from the previous filing. The Mineral Resource estimate is summarized in Table 6.2.

Table 6.2 – Lola Deposit – June 2018 - Mineral Resource Estimate at a Cut-Off Grade of 3.0% Cg per Tonne

	Mineral Resources			
Cut-off Grade	Classification	Tonne	Cg	In-situ Cg
Cg %		(Mt)	(%)	(t)
3.0%	Measured	1.40	5.32	74,700
	Indicated	10.79	5.58	602,200
	Total M&I	**12.20**	**5.55**	**676,900**
	Inferred	2.06	6.07	125,200

Note:
1. CIM definitions (May 10, 2014) observed for classification of mineral resources.
2. Block bulk density interpolated from specific gravity measurements taken from core samples.
3. Resources are constrained by a Lerchs-Grossman (LG) optimized pit shell using MineSight software.
4. Pit shell defined using 30-degree pit slope, $1,300/t of concentrate (94.6% Cg grade, 79.25% Cg plant recovery), $2.00/t mining costs, $10.00/t processing costs, and $3.50/t G&A and $175/t of concentrate for transportation costs.
5. Mineral resources are not mineral reserves and have no demonstrated economic viability. The estimate of mineral resources may be materially affected by mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors (Modifying Factors).
6. Numbers may not add due to rounding.
7. Effective Date of Resource Estimate is June 14th, 2018.

Source: DRA, 2018

6.3.4 Resources Estimate for an Amended Preliminary Economic Assessment Study

An amended resource estimate was completed on the resources used in the previous Preliminary Economic Assessment (PEA) Report and is presented in a report available on SEDAR entitled: *"Lola Graphite Project, Amended Technical Report – Preliminary Economic Assessment; Effective Date: June 14, 2018; Original Report Date: August 2, 2018; Amended Report Date: September 7, 2018".*

The Mineral Resource Estimate is based on the same 395 boreholes and ten (10) trenches used in the previous estimate.

The Mineral Resources estimate of June 14, 2018 was performed by Dr. Marc-Antoine Audet, P. Geo., Ph.D. Geology. The resource estimate was rigorously verified and validated to ensure compliance to NI 43-101 – Standards of Disclosure for Mineral Projects. Validation by independent QP, Mr. Sivanesan (Desmond) Subramani, HBSc., a geologist and graphite expert with Caracle Creek International Consulting (Pty) Ltd.

The Amended Mineral Resource Estimate is summarized in Table 6.3.

Table 6.3 – Lola Deposit – June 2018 – Amended Mineral Resources Estimate at a Cut-off Grade of 1.64% Cg per Tonne

	Mineral Resources			
Cut-off Grade Cg %	Classification	Tonnes (Mt)	Cg (%)	In-situ Cg (t)
1.64%	Measured	2.13	4.31	91,900
	Indicated	17.00	4.39	746,400
	Total M&I	**19.14**	**4.38**	**838,400**
	Inferred	2.82	5.07	143,000

Note:
1.CIM definitions (May 10, 2014) observed for classification of mineral resources.
2. Block bulk density interpolated from specific gravity measurements taken from core samples.
3. Resources are constrained by a Lerchs-Grossman (LG) optimized pit shell using MineSight software.
4. Pit shell defined using 30-degree pit slope, $1,300/t of concentrate (94.6% Cg grade, 79.25% Cg plant recovery), $2.00/t mining costs, $10.00/t processing costs, and $3.50/t G&A and $175/t of concentrate for transportation costs.
5. Mineral resources are not mineral reserves and have no demonstrated economic viability. The estimate of mineral resources may be materially affected by mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors (“Modifying Factors”).
6. Numbers may not add due to rounding.
7. Effective Date of Resource Estimate is June 14th, 2018.

Source: DRA, 2018

resource estimate for feasibility study 2019A revised Mineral Resources estimate effective June 18, 2019 was performed by Dr. Marc-Antoine Audet, P. Geo., Ph.D. Geology base case classified Mineral Resource Estimate is summarized in Table 6.4 below at a Cut-Off Grade of 1.65%.

Table 6.4 – Lola Deposit – June 2019 – Mineral Resources Estimate at a Cut-off Grade of 1.65% Cg per Tonne

Base Case Mineral Resources					
Cut-off-Grade	Classification	Volume	Tonnes	Cg	In-situ Cg
Cg %		(M m^3)	(Mt)	(%)	(t)
1.65%	Saprolite				
	Measured	4.22	6.84	4.39	300,300
	Indicated	14.30	23.24	4.04	937,857
	Sub-total Ind & Meas.	*18.52*	*30.08*	*4.12*	*1,238,157*
	Inferred Saprolite	0.75	1.20	3.81	45,578
	Hard Rock				
	Indicated	8.33	15.96	4.03	643,430
	Sub-total Ind & Meas.	*8.33*	*15.96*	*4.03*	*643,430*
	Inferred Hard Rock	1.51	3.05	3.73	113,785
	Total Ind & Meas.	**26.85**	**46.03**	**4.09**	**1,881,587**
	Total Inferred	**2.26**	**4.25**	**3.75**	**159,364**

Note:
1. CIM definitions (May 10, 2014) observed for classification of mineral resources.
2. Block bulk density interpolated from specific gravity measurements taken from core samples.
3. Resources are constrained by a Lerchs-Grossman (LG) optimized pit shell using MineSight software.
4. Pit shell defined using 30-degree pit slope, $1,400/t of concentrate (96% Cg grade, 75% Cg plant recovery), $1.80/t mining costs, $8.00/t processing costs, and $3.50/t G&A and $100/t of concentrate for transportation costs.
5. Mineral resources are not mineral reserves and have no demonstrated economic viability. The estimate of mineral resources may be materially affected by mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors (Modifying Factors).
6. Numbers may not add due to rounding.
7. Effective Date of Resource Estimate is June 18, 2019.

Source: DRA, 2019

6.3.5 Cautionary Note

Although the historical resources estimates were prepared in accordance with the current CIM guidelines, they have become obsolete and superseded by the resource presented in this updated Feasibility Report that relies on additional drill data and further independent validation.

Mineral resources that are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors (Modifying Factors).

The reader is cautioned that a "qualified person" (as defined in NI 43-101) has not done sufficient work to classify these historical estimates as current mineral resources or mineral reserve in accordance with NI 43-101.

The historical mineral resources are only relevant in that they provide a broad indication of the evolution of estimated tonnes and grade as more information was gathered on the deposit. The historical resources presented in this section should not be relied upon, and both DRA and SRG are not treating these historical estimates as current mineral resources or mineral reserves.

6.3.6 PRODUCTION

There was no historical graphite production for the Property.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Project is located in the eastern limit of the West African Craton (WAC), in the Kénéma-Man domain of Archean granulitic and migmatitic gneiss with subordinate granitoids and relic supracrustal belts (Figure 7.1).

The Archean rocks were affected by the earlier Leonian orogeny (3.5-2.9 Ga), the Liberian orogeny (2.9-2.5 Ga) and the Eburnean orogeny (2.5 and 1.8 Ga), following which the WAC stabilized.

The Archean succession in the Project area was first mapped by Obermüller (1941), revised in 1998 under the BGR compilation (Bering and al. 1998) and re-mapped by the *Bureau de Recherches Géologiques et Minières* (BRGM) at a scale of 1:200,000 (Thiéblemont et al., 1999).

The N'Zérékoré-Lola area contains the Archean gneissic field of N'Zérékoré, which includes the Simandou ridge and Mont Nimba, and the granitic domain («Pays de Manahan»), toward the east and extending into Côte d'Ivoire.

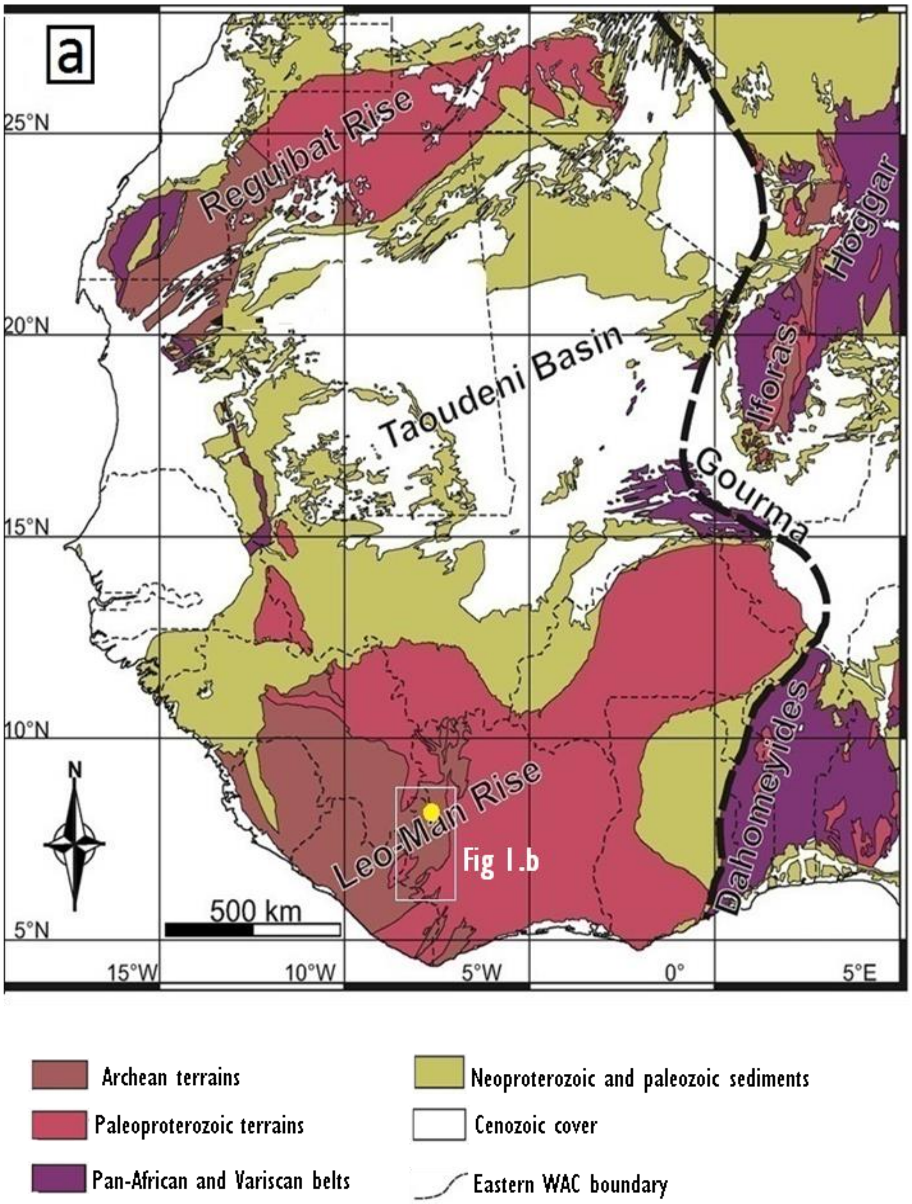
The Lola region's rock assemblage is of mid-Archean age (3.5-2.8 Ga). Work by Obermüller (1941), Bering and al., (1998), and Thieblemont et al. (1999, 2001, and 2004) helped to differentiate between various geological sequences:

- Early-Archean (3.55 to 3.50 Ga) gneiss, granitoid and amphibolite centred near the town of Lola (Thieblemont et al, 2001, Figure 7.2);
- Mid-Archean biotite-sillimanite paragneiss, orthogneiss and amphibolite in the NE and SW of Lola (3.2 and 3.0 Ga);
- Archean Tounkarata (2.9 to 2.8 Ga) granitoid and charnockite batholith east of Mount Nimba and extending into Côte d'Ivoire (Thieblemont and al. 1999, 2001; Figure 7.2);
- Paleo-Proterozoic volcano-sedimentary Mount Nimba Series (2.6 Ga), including conglomerate, quartzite, meta-volcanic rocks, and Banded Iron Formation (BIF);
- Paleoproterozoic (Birimian) granitoid and granitic gneiss, NW of Lola;
- Dolerite Mesozoic dykes cross cutting the above series.

Younger Paleoprotozoic (Birimian) intrusive bodies, biotite-rich granite and gneiss were observed. Mesozoic gabbro and dolerite dykes crosscut the entire sequence (Figure 4.1). Detailed studies by Mr. Sow (2014) and Professor Picard (2017) at the University of Franche-Comté, France, further enhance the knowledge of the regional geology.

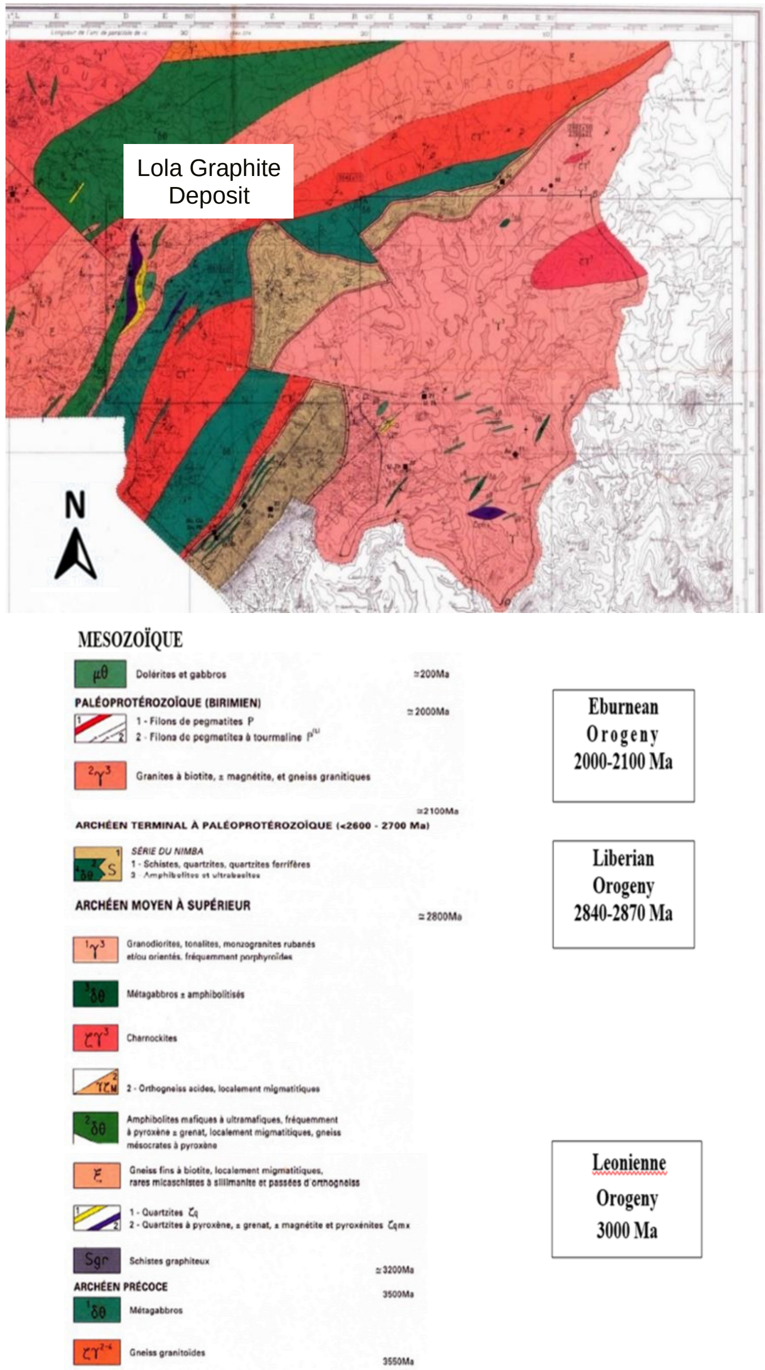
The Lola Graphite occurrence is located within an early-Archean paragneiss sequence (Figure 7.2).

Figure 7.1 – West African Shield – Schematic Geological Map



Source: Berger et al., 2013

Figure 7.2 – Geological Map of the Area of Interest



Source: Berger et al., 2013

7.2 Property Geology

The graphite-rich paragneiss is present at surface over 8.7 km with an average width of 370 m locally reaching 1,000 m. The graphite mineralization is hosted in the strongly sheared paragneiss. Graphite mineralization is well-exposed at surface on its entire strike length, with grades ranging from traces to as much as 20% of large flakes.

The upper 32 m or so of the deposit are well-weathered (laterite), freeing graphite flakes from the silicate gangue and allowing for easy grinding with an optimal recovery of large and jumbo flakes. The graphite mineralization extends to depth into the non-weathered paragneiss.

7.2.1 Academic Studies on Lola Graphite

In 2013, SRG supported Mr. Sékou Oumar Sow, a Guinean geological student at the University of Franche-Comté, France, with his undergraduate study on the mineralogical and petrological characterization of the mineralization and of the host rocks. The study was under the supervision of Professor Christian Picard.

Several investigations have been completed subsequently at the University Grenoble-Alpes, France on the mineralogical characteristics and dating of the graphite mineralization:

1. Multiple Objective Linear Programming (MOLP) to characterize the rocks assemblage and the graphite mineralization.
2. Scanning Electron Microscope (SEM) to establish the morphology and relationships between the graphite flakes and other minerals and the pressure - temperature of crystallization conditions.
3. Microprobe analysis to establish the chemical composition of various mineral phases and to determine the age of the rocks assemblage (method being tested at the Grenoble ISTerre based on the U-Th-Ce-Y and Pb composition).

A high-resolution morphological study on two (2) graphite concentrates supplied by SRG was done using a Field Emission Gun Scanning Emission Microscopy (FEGSEM) at the University of Grenoble in 2017.

7.2.2 Paragneiss Petrography and Graphite Mineralogy

Observations under MOLP and SEM show that the main paragneiss is an assemblage dominated by quartz, andesine, orthoclase, and biotite with some sulphides (mainly pyrite ± chalcopyrite - galena - sphalerite). The accessory minerals visible in the fresh rocks are represented by zircon, apatite, rutile, monazite, and rare garnet crystals.

This paragenesis is typical of an aluminous rich metasedimentary rock, suggesting that the protolith for the paragneiss was a pelite, i.e., a fine-grained sedimentary rock.

Graphite flakes are aligned parallel to foliation and are elongated, somewhat stocky, and sometimes flexuous, varying in size between 10 x 100 µm and 0.3 x 2.3 mm. Over 70% of the flakes have a length greater than 300 µm. They are often shoddy at their ends and made up of slats (1 to 5 µm of thickness by 100 to 500 µm). Biotite and graphite intergrowth is often observed. Investigations by Energy Dispersive X-ray Spectroscopy and microprobe show that graphite flakes are made of pure carbon with no trace of other chemical elements.

Details as well as images on petrology and mineralogy discussed in this section can be found in the previously filed NI 43-101 report dated September 7, 2018. Electron scans and photomicrographs of thin sections, Energy Dispersive X-ray Spectroscopy (X-Ray spectra) for Cg and microprobe images presented in this report illustrate the mineral association, as well as the distribution of the chemical elements in the Cg and in the other minerals.

7.3 Structure

The rocks in the area were affected by an S1 foliation with subparallel primary stratification S0 still recognizable. General orientation S0 - S1 is N03° with a subvertical dip. The presence of syn-schistose folds indicates that the rocks were affected by at least two (2) phases of folding isoclinal P1 and P2 folds that deform S0 and S1.

Sigmoid structures observed in quartz and quartzite association suggest that the area was affected by a dextral shear oriented N10°. The metamorphic paragneiss and other rocks appear to be the product of at least three (3) phases of metamorphism and deformation between 3.2 and 2.1 Ga. Details on the metamorphic assemblages and pressure-temperature conditions are provided in the NI 43-101 report dated September 7, 2018.

7.4 Conclusions

The bulk of the geoscientific information suggests that the Lola paragneiss is the result of the recrystallization of Archean quartz-rich pelites and greywackes of at least 3.2 Ga in age, in a sedimentary basin proximal to volcanic activities. These sediments were deformed and metamorphosed during the Leonian (3.2 Ga), Liberian (2.8 Ga), and Birimian (2.1 Ga) orogenies. The primary crystallization of graphite appears to be contemporaneous with the first phase of metamorphism at 3.2 Ga.

Graphite flakes can be found from one (1) to up to 20% within the paragneiss. The flakes range from 10 x 100 µm to 0.3 x 2.3 mm. More than 70% of the flakes are greater than 300 µm and they are often made up of bundles. In many cases, biotite crystals and sulphides (mainly pyrite) are interbedded with the graphite flakes.

8 DEPOSIT TYPES

8.1 Graphite Mineralization Models

Graphite is one of the three (3) naturally occurring forms of the chemical element Carbon (C). The other two (2) varieties are amorphous carbon (distinct from amorphous graphite) and diamond. Graphite may be synthetically produced or derived from natural sources. Graphite is widely distributed throughout the world, occurring in many types of igneous, sedimentary, and meta-morphic rocks.

Natural graphite generally occurs in one of three (3) forms:

- Microcrystalline or amorphous: finer than 40-(70) µm in diameter; aggregates of fine graphite crystals, with a soft, black, earthy appearance; usually hosted in quartzite, phyllite, metagreywacke and conglomerate;
- Crystalline lump or vein-type: interlocking aggregates of coarse and/or microcrystalline platy or, less commonly, acicular graphite; commonly hosted in anorthosite, gneiss, schist, quartzite, and marble;
- Crystalline flake-type: flat, plate-like crystals, with angular, rounded, or irregular edges; flakes are disseminated throughout the paragneiss derived from carbon-rich sediments; flake size can vary considerably; classified in four (4) or five (5) categories for commercial purposes:
  - Small: <150 mesh or <0.1 mm;
  - Medium: 80 to 150 mesh or 0.177 to 0.1 mm;
  - Large: 48 to 80 mesh or 0.30 to 0.177 mm;
  - Jumbo: >48 mesh or >0.30 mm;
  - (Super-jumbo +1 mm).

Flake size has a strong impact on the value of an occurrence as the larger flakes are more valuable than the smaller ones. From an economic viewpoint, the most significant deposit types are the crystalline flake type and the lump/vein type. The Lola Graphite occurrence is a paragneiss-hosted, crystalline, flake-type occurrence.

9 EXPLORATION

9.1 Line-Cutting, Mapping

In 2012, SRG embarked on detailed exploration programs aimed at delineating and characterizing the graphite occurrence.

A total of 44 lines for 39 line-km were cut in 2013-2014 and maintained over the entire length of the occurrence. The NW-SE oriented lines were set at a distance of 200 m with stations on 50 m spacing (Figure 9.1).

SRG's geologists and technicians have mapped the geology of the entire occurrence with emphasis on defining the contact between the graphite-bearing paragneiss and the surrounding country gneiss (Figure 9.1).

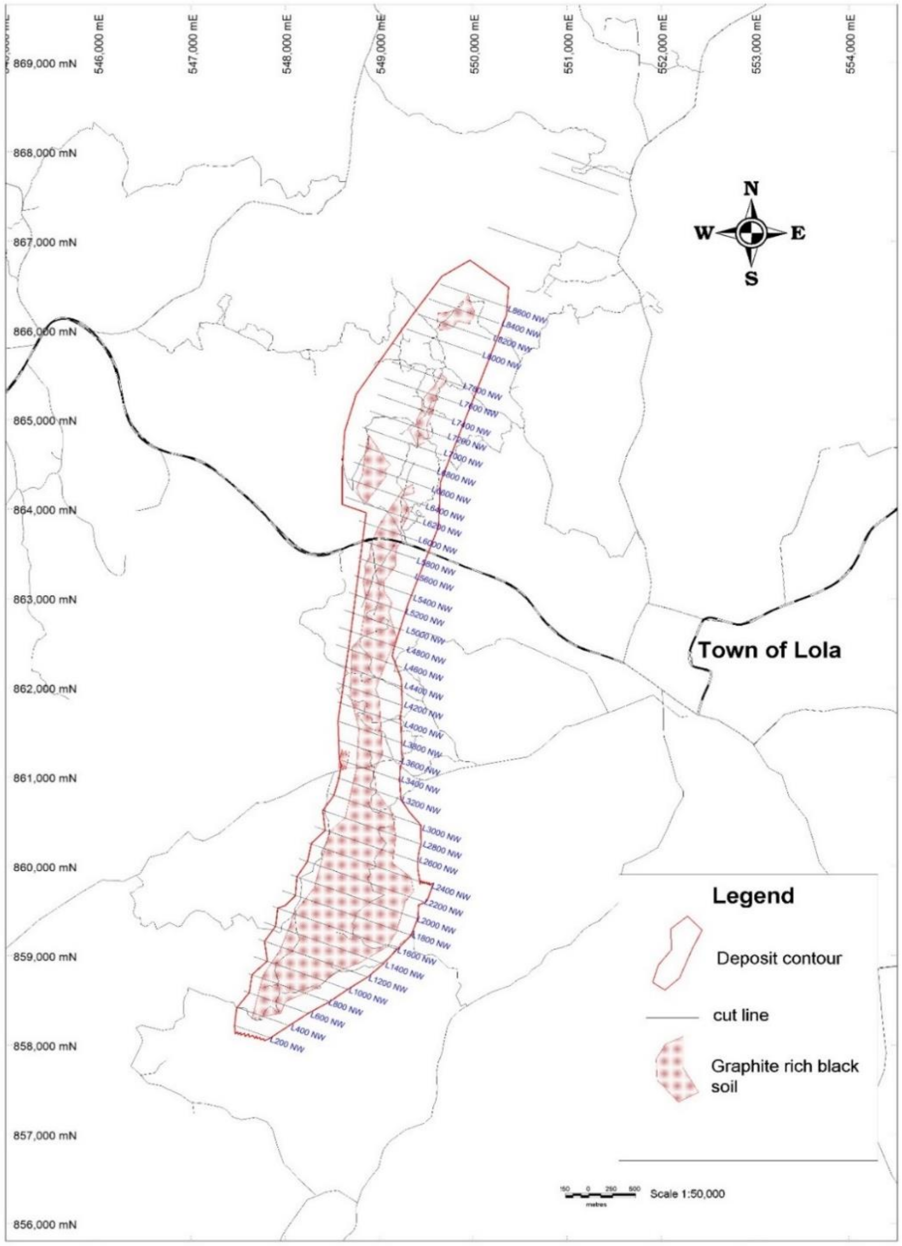
Mapping was facilitated using the soil color, since the intense weathering affecting the region produced soils with specific colors and textures depending on the original rock (protore). Granitoid and gneiss show a residual soil with beige to light orange colour, ultramafic rocks are expressed as a dark red laterite and the graphite-rich paragneiss will develop a dark grey to pitch black oxide material, with graphite flakes concentrated within the oxide material.

Furthermore, the absence of thick organic layer allows for the observation of the graphite-rich paragneiss at surface as mapped by SRG's team.

9.2 Trenching and Pitting

Between 2012 and 2016, SRG dug 34 vertical pits, for a total of 396 m in all Sectors, but Sector 4, to characterize the short-scale variability of the graphite mineralization within the lateritic profile. In 2016-2017, 11 shallow trenches, for a total length of 1,452 m were excavated in Sectors 4, 6, and 7 to complement near-surface information. The data from 10 (ten) of these trenches with a cumulative length of 1,326 m were used in the resource estimation.

Figure 9.1 – Lola Graphite – Cut Grid



Source: DRA, 2019

9.3 Max-Min Geophysical Survey

In 2014, a total of 32.5 line-km of frequency domain Max-Min electro-magnetic (EM) survey was completed by SRG's team, totalling 1,300 readings taken every 25 m on 36 cut lines. Mr. Jean Laforest, P.Eng., trained SRG's team in February 2014 with the use of the Max-Min apparatus.

The survey as successful in outlining the boundaries with the surrounding country rocks and identifying sectors with high graphite flakes concentration.

Numerous nearly continuous Max-Min conductor axes are present over 8.4 km, between Lines 200 and 8600, with a gap between lines 3600 and 4200 that was not surveyed.

9.4 Detailed Aerial Photos and Topographic Survey

In April 2017, a photogrammetric drone survey was performed over the deposit. The survey was performed using a SenseFly's Ebee drone with a 10 cm/pixel resolution. The resulting Digital Elevation Model (DEM) was filtered to remove vegetation and buildings from the data and produce a Digital Terrain Model (DTM) representing bare earth elevations.

The model was calibrated using nine (9) surveyed Ground Control Points (GCP) visible from the air. The expected horizontal and vertical precisions are sub-metric. Figure 14.1 illustrates the topo contours generated using the SenseFly's Ebee data.

A detailed topographic survey completed in May 2018 by Effigis Geo-Solutions Inc. generated maps from satellite data with a contour interval of 250 cm.

9.5 Mineralogical and Petrological Studies

Mineralogical and petrological investigations were performed at the University of Franche-Comté, France, and several metallurgical tests were completed in 2014, 2015 and 2016.

Metallurgical tests were also performed by Actlabs on surface oxide material. Metallurgical testing indicates excellent recovery of super-jumbo, jumbo, and large flake sizes.

Several mineralogical and petrological studies were performed by Actlabs and through a graduate study at the University of Franche-Comté, France (Section 7).

ProGraphite GmbH and Dorfner/Anzaplan both from Germany performed additional detailed metallurgical investigations in 2017.

The testwork completed by SGS and reported in May 2018 formed the basis of the PEA study, and considered grindability, scrubbing, flotation, and solid/liquid separation testwork.

Following the PEA study, a test work campaign on the saprolite ore was developed to build and optimise the metallurgical results. The test work campaign was planned in 2018 and executed in 2018-2019 by SGS Lakefield.

Details of metallurgical tests can be found in Section 13.

9.6 Results

The exploration work performed by SRG Guinée's team confirmed the extent and continuity of the graphite-rich paragneiss from near-surface to a vertical depth of about 200 m, in the Pit #2 area, within Zone 5. The drill holes in the Pit #2 area show that the graphite-rich paragneiss is still open down-dip.

10 DRILLING

10.1 Pionjar Drilling

SRG's team used a portable, gas-powered Pionjar jackhammer/drill to test the lateritic profile for nickel and cobalt content and to collect samples at various depths for graphite investigation.

The technique uses a set of steel rods equipped with a 15 cm long sampling tube that was used by SRG to collect samples at every metre drilled. This technique is qualitative but is suitable for regional target definition.

A total of 21 Pionjar holes totalling 176 m were drilled by SRG to depths of 2.0 m to 15.0 m.

10.2 Diamond Drilling

SRG's first drilling program started in October 2013 with 20 vertical boreholes using their two (2) own Jacro diamond drill rigs. An additional 16 boreholes were drilled at -60 degrees in June and July 2014. Jacro drill rigs are made to be man-portable and are designed to reach a depth of approximately 30 to 40 m in the weathered rock (Table 10.1).

SRG's second drilling program started in April 2017 with the mobilization of a track mounted Coretech CSD 1300G drill rig contracted from Sama Nickel Côte d'Ivoire SARL (Sama Nickel).

In March 2018, drilling contractor Foraco Côte d'Ivoire (Foraco) mobilised two (2) drill rigs and by June 14, 2018, completed 215 boreholes for 8,430 m.

Between 2013 and 2018, a total of 22,590 m of core had been drilled in 648 holes (Table 10.1). Figure 13.1 presents all the boreholes drilled to date, per sector. The resource estimate is based on 638 holes for a total of 22,239 m and 16,059 samples, the lengths of which add to 21,584 m (exclusive of Quality Control (QC) samples).

Table 10.1 – Summary Drilling on the Property

Year	Number Of Drill Holes	Cumulative Length (m)
2013-2014	36	799
2017	231	6,295
2018	381	15,496
Total	**648**	**22,590**

10.2.1 METHODOLOGY - DRILLING

For every hole, the drill rigs were positioned using a hand-held GPS (± 5 m accuracy). In addition to drill pad preparation, unlined sumps were hand-dug to capture and store return waters.

The rigs were equipped to retrieve HQ sized core (63.5 mm in diameter) through the entire length of the boreholes. The core was extracted in runs of a maximum of 1.5 m. The depth of weathering typically reaches 15 m to 35 m below surface. Upon completion of the holes, all rods and casings were extracted.

Once completed, the drill holes were marked with a PVC casing bearing the hole number set in a permanent concrete monument. Upon completion of the drilling, the drill site was reclaimed, and all water sumps were filled in and the site was leveled. The site was then inspected by a geologist/technician and the drill foreman. A detailed environmental inspection checklist was filled, and a photo was taken to provide a record of the reclamation of the site.

The holes are drilled at a spacing of 20 m along lines at distances varying between 50 m, 100 m and occasionally 200 m. Most of the holes are inclined at -50° or -60° toward azimuth 110°. A few holes are vertical or with a plunge toward 290°.

10.2.2 BOREHOLE NAMING CONVENTION

The adopted system for naming the drill holes primarily consists of a subdivision of the entire area in blocks of 800 m x 800 m, based on UTM coordinates. The borehole names are formed using a sequence of ten (10) digits, as follows: LLWW XXXYYY. The first two (2) digits, 'LL', represent the Lola prospect area; 'WW' represents the block number; and 'XXX' and 'YYY' represent the distance going east from the specific block's top left corner and the measure going south from the block's top left corner.

This system links the hole name to its exact position in the field to the closest metre. For instance, Hole LL42 156287 is located in Block 42, 156 m east and 287 m south of the upper left corner (Figure 10.1).

10.2.3 COLLAR SURVEY

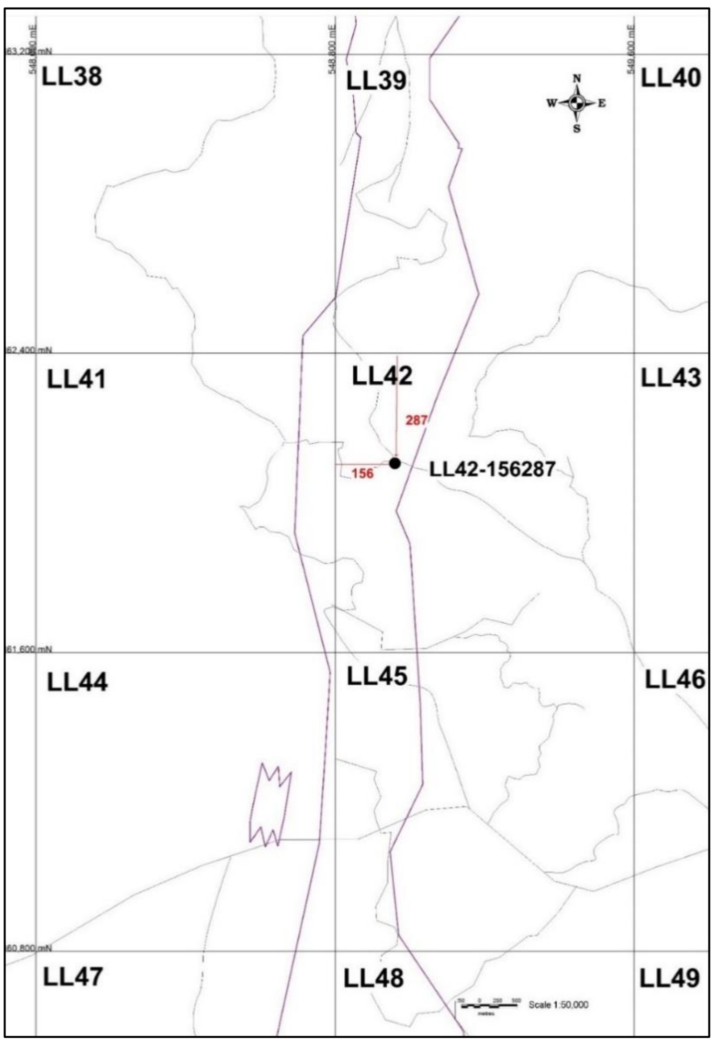
On April 5, 2018, 188 drill hole collars and trenches were surveyed by Société Géodésique-Topographie et de Travaux publics of Abidjan, Côte d'Ivoire.

The independent surveyor used a dual-frequencies LEICA 1230 differential GPS with a precision of five (5) mm on the X and Y coordinates and between one (1) and five (5) cm for the elevation (Z coordinates).

SRG compared the coordinates of these 188 holes with the recent EBEE topographic survey done on site, using a “snapping” tool in GEMS to “drape” the points on the topo surface. An average difference of approximately 58 cm was observed between the elevations (Z direction) of the surveyed collars and the DTM surface. This difference is acceptable and is well within the accuracy to be expected for a resource estimate. Consequently, the same adjustment was done on the elevation of the remaining 450 holes drilled in 2017-2018.

As a check, the same technique was applied to another DTM surface derived from satellite images by Effigis Geosolutions. This test showed that the surveyed collar elevations were on average 50 cm below the DTM from the satellite images.

Figure 10.1 – Borehole Naming Convention



Source: SRG Mining Inc., 2018

10.3 Summary

DRA believes that the drilling programs were successful in defining the graphite mineralization in sufficient detail to support the present resource estimation. The survey of the first 188 hole collars provides accurate location of the holes in the deposits. The elevation of these holes collars fitted well with the elevations obtained from the EBEE and satellite DTM. The resources are based on relatively closely spaced holes, essentially 20 m by 50 m or 100 m. Consequently, the possible variations in the X and Y coordinates for the un-surveyed holes cannot reasonably be expected to have a significant impact on the resource grade or tonnage. The hole deviation path was not measured, considering 90% of the holes are shorter than 50 m.

It is the opinion of DRA that the previous drilling campaigns were conducted according to current industry best practices. No drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results were observed by DRA in the drilling programs. The data provided by the drilling and interpretation therefore are adequate for the purposes of the resource estimate presented in this Report.

11 SAMPLE PREPARATION, ANALYSIS AND SECURITY

11.1 Sample Procedure and Sample Security

11.1.1 Logging and Sampling Procedure

Preliminary core logging was performed by the geologists at the drill site and detailed logging and sampling were completed at SRG Guinea's facility at Lola. The observations were recorded manually on a paper form and transferred onto Excel sheets. This method is open to possible transcription errors but leaves a better trail of the logging activities and a dual record of the data.

Core handling and processing involved taking a digital photographic record of the core, measurement of the bulk density, logging, sampling, and storage of the core.

Sampling by SRG Guinea's geologists followed standard, internationally accepted procedures. The sample intervals were of a nominal 1.0 m length but ranged from less than 1.0 m to a maximum of 1.5 m to respect natural contacts. The entire holes were sampled without leaving any gap. Wider sample intervals were taken in zones with low core recoveries, but without straddling contacts.

In the non-weathered material, the geologists marked a reference line on the drill core prior to sampling. The soft core was cut with a knife, while the hard core was cut with a diamond blade rock saw. One half of the core was placed into a polyethylene bag with a sample tag to be sent for analysis, the other half was replaced into the boxes and stored for future reference.

Most bulk density samples consisted of 10 cm to 15 cm stubs of whole core. Upon completion of the density measurements, the samples were cut in two and one half was replaced to the original position into the core boxes and the other one was returned into the corresponding sample bag.

By October 29, 2018, a total of 16,059 samples were collected and sent for preparation and analysis from the SRG diamond drill holes (DDH) (exclusive of quality control samples). A total of 391 samples were collected in the surface trenches.

11.1.2 Sample Preparation and Analysis

11.1.2.1 Samples from the Drilling Campaigns of 2013-2014

The 687 samples from boreholes drilled in 2013 and 2014 were prepared at Société de Développement de Gouessosso's (SODEGO) sample preparation facility in the village of Gouessosso in Côte d'Ivoire (90 km from Lola), under SRG's supervision.

11.1.2.2 *Samples from the Drilling Campaign of 2017-2018*

Preparation for the 15,746 samples collected in 2017-2018 was performed at the Bureau Veritas (Veritas) facility in Abidjan, Côte d'Ivoire.

One (1) duplicate sample was produced on every 40 samples, one (1) blank sample was introduced every 60 samples and one (1) standard on every 30 samples. Veritas was instructed to produce the duplicate samples from the pulverized material for each bag that had two (2) consecutive sample tags.

11.1.2.3 *Sample Preparation*

Sample preparation at SODEGO and Veritas followed the same procedures:

- Drying at 105°C;
- Crushing to 70% passing two (2) mm; verification of the particle size distribution;
- Quartering, homogenization, preparation of a representative sub-sample;
- Pulverizing to 85% passing 75 µm; verification of the grind size.

For each core sample, two (2) pulverized pulps (-100 µm) were prepared: one (1) sent to the laboratory for assaying and one (1) kept as reference for possible future use as a "check sample" or for metallurgical testing.

The pulps were delivered to Actlabs in Canada for Cg assaying. Actlabs is ISO 17025 accredited (Lab 266) for specific registered tests and operates under a quality management system that complies with the requirements of ISO 9001:2008.

The Cg analysis by infrared method (IR) consists of submitting a 0.5 g sub-sample to multistage furnace treatment to remove all forms of carbon except for graphitic carbon. Carbon in a sample can also be present in carbonate minerals, as humic carbon, and other less common forms. Each one of these forms combusts at a different temperature, consequently, the staged heating of the sample can discriminate between the different forms.

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 cause the sample to combust and release the carbon that binds with oxygen to form carbon monoxide (CO) and carbon dioxide (CO_2). Carbon is measured as carbon dioxide in the IR cell as it absorbs IR energy at a precise wavelength within the IR spectrum and the absorption of IR energy attributed to CO_2 is measured.

11.1.3 Core and Pulp/Reject Storage

All core is stored in wooden boxes containing up to 4 m of core in four (4) rows. They were built onsite by SRG's carpenters and, prior to using, they had been soaked in a solution to protect them from wood-eating termites. Each core box is clearly identified by an embossed aluminum strip stapled on the end plate.

The core boxes are stored in an enclosed warehouse secured on a full-time basis located at Lola village. The pulp and reject samples are also stored at the SRG warehouse at Lola.

11.1.4 Bulk Density Determinations

Bulk Density Factors (BDF) were determined by SRG at its facility at the Lola camp. A total of 1,460 representative core samples from both the oxide and the fresh zones were collected from boreholes drilled in 2013-2014 and 2017-2018 (Table 11.1).

The bulk density was measured using the immersion method and the free moisture content was calculated. As the core was extracted from the core barrel at the drill rig, it was wrapped in thick plastic sheets to conserve its humidity until the density and humidity determinations were completed.

Table 11.1 – Density Factors

Rock Code	Facies	Nb Sample	Wet Specific Gravity	Dry Specific Gravity	Humidity (%)
50	Soil	23	1.89	1.51	20.21
100	Laterite	11	1.80	1.49	17.33
100	Alterite	154	1.89	1.50	20.68
150	Saprolite	1,019	1.90	1.55	18.12
200	Hard Saprolite	125	1.98	1.74	12.51
600	Gneiss	122	2.18	2.11	3.54
600	Quartzite	6	1.33	1.31	1.68
700	Silicified Zone	(assigned)	1.90	1.80	10.00
	Total	**1,460**			

Source: DRA, 2019

11.1.5 Security and Chain of Custody

All core processing, sample and data collection were handled by SRG's personnel on site. The core boxes were covered and secured at the drill site, ensuring to eliminate any contamination and security breach during transfer to SRG's core logging facility at Lola. The samples collected by SRG were placed into rice bags and kept in a guarded room until sufficient material was accumulated for shipping to the laboratory.

The sample batches were shipped to a sample preparation facility (SODEGO in 2013-2014 and Veritas in Abidjan in 2017-2018). Once processed from the facility, the pulps were shipped to Actlabs, which is an independent commercial laboratory.

Sample submittal forms were used to confirm dispatch and receipt of the sample batches. Data security was ensured by the immediate transfer of hard copy logs and records into Microsoft Excel software at the Lola site. Upon receipt of the digital files containing the assay results, all data was validated through a Quality Assurance/Quality Control (QA/QC) process and subsequently exported to Gemcom software for further processing. Hard copy logs and sample record sheets are retained for reference.

11.2 Quality Assurance and Quality Control Procedure

SRG used thorough QA/QC procedures during the 2013, 2014, and 2017-2018 drilling campaigns. Several control samples were inserted by SRG into the flow of core samples:

- Six (6) commercial Certified Reference Materials (CRMs, also referred to as Standards) (Table 11.2);
- One (1) sample of coarse blank material; and
- Pulp duplicate samples.

Table 11.2 – List of CRMs Used by SRG (Standards)

Supplier	CRM ID	Graphitic Carbon (%)	Total Carbon (%)
Geostats	GGC-5	8.60	9.20
Geostats	GGC-10	4.79	5.22
OREAS		3.30	
OREAS	722	2.03	2.06 (*)
OREAS	723	5.87	5.98 (*)
OREAS	724	12.06	12.03 (*)

(*) Uncertified values

Source: DRA, 2019

The CRMs from OREAS, Australia, are prepared from vein graphite from a mine in Sri-Lanka blended with granodiorite from Australia. Certified values for carbon and a suite of elements and oxides are provided. The CRMs prepared by Geostats Pty Ltd, Australia, are made up of flake graphite from Western Australia.

11.2.1 Drilling Campaign 2013-2014

During the 2013 and 2014 drilling programs, a total of 30 control samples were inserted, representing 7% of the batch total. In addition, Actlabs used a total of 45 internal CRM graphite control samples, 43 internal duplicate assays and 18 blank materials for internal controls.

11.2.1.1 Blanks

Four (4) prepared blank samples (prepared by Veritas) were used by SRG.

All the assay results from the blank samples were satisfactory as all returned Cg values below the detection limit of 0.05%.

11.2.1.2 Duplicate Samples

Eleven (11) duplicate samples were inserted through the flow of samples sent to Actlabs for assaying. The results from each pair of samples were acceptable, though not outstanding, as all but one pair was within a variance of ±10%. However, the original versus duplicate analysis, as plotted around a one to one line, are reasonably close, except for one pair.

11.2.1.3 CRMs (Standards)

Two (2) commercial CRMs (pulps) purchased from Geostats (GGC-05 and GGC-10), Perth, Australia, were used and inserted in every 30 samples of the sample flow. Both exhibit a systematic high bias but remain within acceptable limits.

11.2.1.4 Check Samples

A total of 35 samples from the 2013 drilling campaign were sent to Veritas in Rustenburg, RSA, in 2016 (including six (6) standards and four (4) blanks samples).

All samples were acidified and roasted to remove carbonate and organic carbon. The residual carbon was determined using a total combustion analyzer, and Cg% was determined by total combustion analysis.

In addition, Veritas performed assaying for the following elements and oxides: SiO2, Fe2O3, MgO, MnO, P2O5, Al2O3, CaO, K2O, TiO2, Ag, Cu, Zn, V, Pd, Th, U, S, C and LOI.

The assay results for the blank samples were all below the detection limit. Statistical studies on assay results from Veritas Rustenburg versus Actlabs indicate that Veritas Rustenburg returned higher Cg values for the check samples than Actlabs. Furthermore, Veritas returned higher Cg values for five (5) of the six (6) standards inserted. However, the assay results on duplicates are within acceptable limits.

11.2.2 Drilling Campaign 2017-2018

A total of 1,287 control samples (565 standards, 285 blanks, and 437 duplicates) were inserted in 2017-2018, representing 5.0% of all the samples collected.

A total of 549 check samples, representing 5.0% of the batch total, were sent to Veritas in Rustenburg, RSA, Veritas in Vancouver, Canada and SGS Lakefield in Canada.

11.2.2.1 Blanks

The 285 prepared blanks used by SRG yielded satisfactory assay results. Four (4) blank samples prepared by Veritas were used by SRG.

Only four (4) out of the 285 blanks returned values above the detection limit (0.17, 0.36, 0.41 and 0.63% Cg).

11.2.2.2 Duplicate Samples

Four hundred thirty-seven (437) duplicate samples were inserted into the flow of samples sent to Actlabs for assaying.

The results are acceptable as the variance on most of the pairs falls within 10%.

11.2.2.3 Standards

Six (6) pre-prepared pulp standard materials were used and inserted on every 30 sample of the sample flow. The percentage (%) variations for all Standards are well within 10%, including for the GC-05 standard that exhibits a systematic low bias.

11.2.2.4 Check Samples

In April 2017, 365 samples were sent to Veritas in Vancouver, Canada.

Due to sub-optimal results obtained from Veritas in 2016 and 2017, all the subsequent check samples were analyzed at the SGS Laboratory in Canada. Consequently, a total of 155 samples from the 2017-2018 drilling campaign were sent to SGS Lakefield in Canada.

1. Check Samples Veritas (Canada) April 2017

   The 365 samples sent to Veritas in Vancouver, Canada, in March 2017 included 12 standards and six (6) blanks samples. All the samples were acidified and roasted to remove carbonate and organic carbon. The residual carbon was determined using a total combustion analyzer, and the Cg was determined by total combustion analysis.

All the assay results for the blank samples returned values below the detection limit.

Statistical studies on assay results from Veritas versus Actlabs indicate that Veritas Canada returned lower Cg values for check samples than Actlabs. Veritas failed at returning acceptable Cg results on most of the 12-standard material inserted. The assay results on duplicates were acceptable.

2. Check Samples SGS Lakefield 2017-2018

From April 2017 to December 2018, SGS Canada re-analyzed 1,089 pulp samples, (including 16 standards) from drill holes completed in 2017-2018. An almost perfect match was obtained between the SGS and the Actlabs analyses.

The assay results from SGS on the standards show a variation within acceptable limits.

11.3 Conclusions

Actlabs was used during both drilling campaigns. The assays reported on the CRMs for both campaigns show a moderate positive bias on standard materials GGC-10 but not on the other two (2) standards (GGC-05 and OREAS). The composition of both GGC standards shows the same relative percentage of graphitic carbon versus total carbon so the discrepancy is not dependent on the presence of other carbon forms. However, the GGC-10 standard contains 4.40% sulfur while the sulfur content of GGC-05 is 0.05%.

It is hypothesized that sulfur might have a certain influence on sample combustion during the multistage furnace assay process used by Actlabs. Consequently, standard GGC-10 should not be considered as having a representative matrix for the sulfur-free saprolite portion of the Lola Graphite mineralization and should be discarded.

During both drilling campaigns, check samples were sent to three (3) different laboratories: Veritas Rustenburg (RSA), Veritas Canada, and SGS Lakefield in Canada.

It is evident that both Veritas laboratories yielded inconsistent and biased results. The South African laboratory reported a strong positive bias on standards, while it was the opposite for the Canadian laboratories. Assay inconsistences and data scattering showed sub-standard quality for both Veritas laboratories.

Starting in 2017, check samples were sent to SGS Lakefield. Assay results correlation with Actlabs is excellent and assay results on standards are acceptable.

It is the opinion of DRA that the QA/QC process demonstrates that Actlabs returned acceptable assay results that are adequate for the purposes of the resource estimation provided in this Report.

12 DATA VERIFICATION

12.1 Data Verification by Jean Laforest, P.Eng.

Consulting geologist, Mr. Laforest, P. Eng., visited the Lola Graphite Project four (4) times between April 2013 and October 2017.

In 2013, Mr. Laforest provided an independent opinion on the potential of the newly defined graphite occurrence. During the site visit, Mr. Laforest collected four (4) representative surface samples in the vicinity of an access dirt road, near line L3450W. The samples were assayed at ALS Chemex Laboratory in Val d'Or, Quebec, Canada. The samples graded from 2.7% to 18.10% Cg, which confirmed the occurrence of local high-grade graphite concentrations.

Following the first visit in 2013, Mr. Laforest sent nine (9) samples to the ALS Chemex Laboratory for check analysis.

Mr. Laforest visited the southern part of the occurrence. Numerous mineralized boulders, similar to the material observed along the road, were found, some containing up to 15% graphite flakes.

Mr. Laforest examined Pionjar samples at SRG's field office at Lola, collected the nine (9) samples from Pionjar hole GR-14 and sent them to ALS Chemex Laboratory. The samples were assayed for graphitic carbon using LECO furnace following acid digestion and sorting (Code C-IR18). The nine (9) samples returned assays ranging from 3.7% to 11.6% Cg. Although these samples represent only 15 cm for each metre drilled, they indicated the vertical continuity at the GR-14 location of the graphite mineralization within the lateritic profile.

In April 2017, an internal audit of the current drilling campaign was performed. Logging, density measurements, core sampling, QA/QC, storage, and sample chain of custody procedures were reviewed.

In 2014, Mr. Laforest trained SRG's team on the use of the Max-Min geophysical equipment and reviewed the exploration completed since his previous visit: logging, QA/QC, density measurements and sampling procedures, assay results and the drilling database.

In April 2017, Mr. Laforest performed an internal audit of the current drilling program along with additional QA/QC controls.

Mr. Laforest made a last visit on site from October 8 to 12, 2017 for an overall review of the graphite occurrence. Mr. Laforest reviewed the core logging and sampling activities, verified the location of the trenches, pits, and drill hole collars, checked the database and the QA/QC procedures for conformity with the NI 43-101 standards. A total of 109 of the pits dug by BUMIFOM between 1959 and 1961 were identified and positioned by the SRG's team.

Mr. Laforest concluded that the work performed to date was of high quality and had been conducted according to current industry best practices. The quality of the data was deemed to be adequate for the purpose of the Technical Report.

12.2 Data Verification by DRA

12.2.1 QP Site Visit - 2018

12.2.1.1 Introduction

A Personal Inspection of the Lola Graphite Property was completed by one of DRA's independent QPs, Yves A. Buro, P.Eng., as part of the NI 43-101 requirements for the preparation of a technical report. Mr. Buro provides geological services to the Geology & Mines department of DRA.

Mr. Buro arrived at the town of Lola on April 8 and departed on April 11, 2018. The visit started with general discussions with SRG's technical team on topics such as the project geology and mineralization, data collection, compilation and interpretation, core logging and sampling, database construction, QA/QC system, and general procedures.

Mr. Buro examined some core from the 2017-2018 drill program and selected independent check samples. The results from previous drilling had been audited by another QP ("Technical Report, December 22, 2015; WSP Canada Inc."). Several outcrops and drill sites were visited.

The visit by Mr. Buro constitutes a QP's Current Personal Inspection of the property.

12.2.1.2 Field Trip

Mr. Buro visited the site of the Lola Graphite Project on April 10, 2018 with Michel Koffi, Project Geologist, SRG Graphite, Guinea.

The field trip took Mr. Buro and Mr. Koffi through the ridges and low ground areas, and past several trenches, former drill sites and streams crossing the deposit, as well as through the road-cut of paved highway N2. The large outcrops of graphite mineralization in the paragneiss exposed on the access road were examined. The two (2) drill rigs active at the time of the visit were visited. The core extracted at the two (2) drill rigs and the core being logged and sampled at SRG's facilities were briefly reviewed. The rooms dedicated to the density determination and to the core sawing operations were visited.

Mr. Buro very clearly saw the graphite mineralization in the long outcrop exposed by the access road near line L3450W, in the road-cut of the N2 highway, in the core at both drill sites and at the core logging and sampling facility.

12.2.1.3 *Check Samples Selected by DRA's QP*

Mr. Buro independently selected 24 samples for check analysis. Four (4) blank and two (2) duplicate samples as well as four (4) occurrences of standards (2.03% Cg and 12.06% Cg) were included as control samples into the project sample batch (Table 12.1).

The samples selected by Mr. Buro originate from the different proposed mine pits and from various depths (3.00 m to 49.85 m) in an attempt to represent a fair geographic distribution in the deposit. In addition, the Cg grades of the selected samples cover the full range of grades in the deposit, although most of them aimed at monitoring the laboratory performance for the grades close to the cut-off and the mean of the mineral resources.

The analytical results from the control samples exhibit a very good correlation with the original values, whether we use the "10% Variance" or the "Mean Relative Absolute Difference" as the fail/pass threshold between the differences in tenors of the individual pairs (Figure 12.1). Both methods indicate that two (2) samples out of 24 exceed the threshold, that is, in less than 10% of the cases, which is acceptable. In addition, the difference between the average grade of all the original and all the duplicate analyses is clearly below 5% (Table 12.1). However, a systematic positive bias, although low, it obvious toward the results of the check analyses. The fact that these samples were analyzed by two (2) different laboratories probably contributes to this difference. Considering that the control samples pass the acceptability tests and that the bias in the check analyses is not significant, Mr. Buro, on that basis, concludes that the analytical results are sufficiently reliable to be used in a resource estimation.

12.2.1.4 *Verification of Hole Collar Locations*

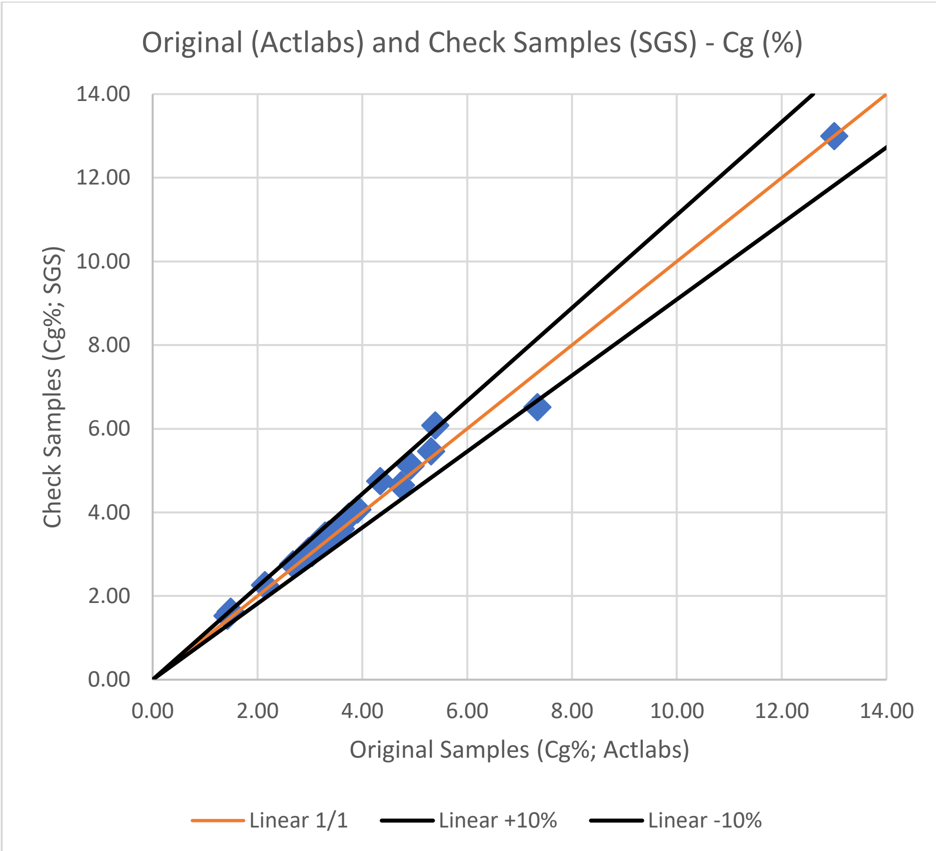
The collar location of 19 holes drilled in 2013, 2014 and 2017 was recorded using a hand-held GPS. Comparisons of these GPS readings with the database entries showed that the differences between the two (2) sets of coordinates for all 19 collars were well within the accuracy of the GPS instrument. In addition, the plunge and direction of the holes noted in the field corresponded with the database data.

12.2.1.5 *Resource Estimate*

The initial in-pit mineral resources estimate was performed by Dr. Marc-Antoine Audet, P. Geo., PhD, Founder, Board Member and Chief Geologist at SRG.

Although Mr. Buro is not responsible for the current resources estimate, Mr. Buro participated in a detail review of the parameters and methodology used for the initial estimate with Dr. Audet to gain a better understanding of the Lola graphite mineralization.

Figure 12.1 – Scatter Diagram: Original Analyses and Check Samples Analyses (Cg%)



Source: DRA, 2019

Table 12.1 – Chemical Analysis for Cg from GR-14 Borehole

Drillhole ID	Original Samples ID	Duplicate Samples ID	From (m)	To (m)	Interval (m)	Material	Cg_Original (%)	Cg_Duplicates (%)	Variance (%)	Relative Difference (%)
		80951				Blank		-0.05		
LL45-043385	GN2220	80952	19.50	21.00	1.50	Pulps	1.43	1.53	-7.0%	6.8%
LL45-043385	GN2221	80953	21.00	22.50	1.50	Pulps	3.25	3.30	-1.5%	1.5%
		80954				Standard 722	2.03	2.20	-8.4%	
LL36-269658	GN5875	80955	11.00	12.00	1.00	Pulps	2.98	3.08	-3.4%	3.3%
LL36-269658	GN5876	80956	12.00	14.50	2.50	Pulps	3.16	3.29	-4.1%	4.0%
LL45-201031	GN6909	80957	21.00	22.50	1.50	Pulps	5.39	6.08	-12.8%	12.0%
LL45-201031	GN6910	80958	22.50	24.00	1.50	Pulps	4.34	4.75	-9.4%	9.0%
LL45-145009	GN6965	80959	9.00	10.50	1.50	Rejects	7.34	6.52	11.2%	11.8%
		80960				Blank		-0.05		
LL45-145009	GN6966	80961	10.50	12.00	1.50	Rejects	3.04	3.03	0.3%	0.3%
LL45-145009	Double-GN6966	80962	10.50	12.00	1.50	Duplicate	3.04	2.98	2.0%	
		80963				Standard 722	2.03	2.17	-6.9%	
LL47-661377	GN8261	80964	3.00	4.50	1.50	Pulps	2.14	2.26	-5.6%	5.5%
LL47-661377	GN8262	80965	4.50	6.00	1.50	Pulps	1.49	1.63	-9.4%	9.0%
LL47-740405	GN7848	80966	25.50	27.00	1.50	Pulps	5.31	5.46	-2.8%	2.8%
LL47-740405	GN7849	80967	27.00	28.50	1.50	Pulps	3.91	4.07	-4.1%	4.0%
LL55-040560	GN14088	80968	33.55	35.05	1.50	Pulps	4.92	5.12	-4.1%	4.0%
		80969				Blank		-0.05		

Drillhole ID	Original Samples ID	Duplicate Samples ID	From (m)	To (m)	Interval (m)	Material	Cg_Original (%)	Cg_Duplicates (%)	Variance (%)	Relative Difference (%)
LL55-040560	Double-GN14088	80970	33.55	35.05	1.50	Duplicate	4.92	5.11	-3.9%	
LL55-040560	GN14089	80971	35.05	36.55	1.50	Pulps	2.68	2.76	-3.0%	2.9%
		80972				Standard 722	2.03	2.11	-3.9%	
LL55-003547	GN13866	80973	38.10	39.60	1.50	Pulps	3.47	3.51	-1.2%	1.1%
LL55-003547	GN13867	80974	39.60	41.10	1.50	Pulps	3.01	3.09	-2.7%	2.6%
LL42-136012	GN15380	80975	46.85	48.35	1.50	Pulps	4.74	4.65	1.9%	1.9%
LL42-136012	GN15381	80976	48.35	49.85	1.50	Pulps	3.39	3.39	0.0%	0.0%
LL42-080009	GN15576	80977	20.10	21.60	1.50	Pulps	3.36	3.47	-3.3%	3.2%
		80978				Blank		-0.05		
LL42-080009	GN15578	80979	21.60	23.10	1.50	Pulps	2.87	2.91	-1.4%	1.4%
LL45-196439	GN2328	80980	17.50	18.50	1.00	Pulps	13.00	13.00	0.0%	0.0%
		80981				Standard 724	12.06	12.50	-3.6%	
LL45-196439	GN2329	80982	18.50	19.50	1.00	Pulps	3.59	3.61	-0.6%	0.6%
LL36-196631	GN5802	80983	22.50	25.50	3.00	Pulps	3.29	3.45	-4.9%	4.7%
LL36-196631	GN5803	80984	25.50	27.00	1.50	Pulps	3.74	3.90	-4.3%	4.2%
						Mean(*)	3.99	4.08		
						Maximum(*)	13.00	13.00		
						Minimum(*)	1.43	1.53		
						Standard Deviation(*)	23.31	2.27		
						(*) Exclusive of duplicates and standards				

12.2.1.6 CONCLUSIONS

The Lola graphite deposit manifests itself by its surface expression, notably in a large outcrop along the access road to the project and in the road-cut of Highway N2. The deposit is defined by holes drilled over a systematic, tight grid.

Mr. Buro 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 and in Canada. 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, although not always outstanding, are sufficiently reliable to be used in the present resource estimation.

No limitations or failures to conduct data verification were identified by the QPs in preparation of this Technical Report.

Mr. Buro considers the personal inspection, as referred to in subsection 6.2(1) of the Instrument, to be complete and current, as the material work completed on the Property was reviewed, including the new material scientific or technical information that could impact the present resources estimate that has been collected about the property between that personal inspection and the filing date of the technical report. M. Buro has taken the necessary steps to verify independently the material work done on the property since his last site visit.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Previous Test Work

13.1.1 Mineral Characterization

Mineral characterization was completed by the *Centre de Technologie Minérale et de Plasturgie* (CTMP) in Thetford-Mines, Quebec, Canada at the end of 2012 and at Actlabs in 2014. The CTMP samples on four (4) representative saprolite ore samples, grading from 2.8% to 16.8% carbon, showed that 80% of graphite flakes are sized greater than 0.25 mm and 50% greater than 1.0 mm. The Actlabs campaign focused on an ore sample from the Lola region, where it found that the main minerals were quartz, muscovite, and andalusite (Table 13.1). Graphite flakes coarser than + 32 mesh (>500 µm) were observed.

Table 13.1 – Modal Mineralogy (Wt%) as Determined by Mineral Liberation Analyzer

Mineral	Quantity (%)
Graphite	6.97
Graphite Clay(*)	7.14
Quartz	50.89
Muscovite/Illite	15.80
Kaolinite	2.28
Sillimanite/Andalusite	6.82
Feldspar	0.42
Fe oxyhydroxide	5.09
Rutile/Anatase	3.14
Monazite	0.24
Others	1.22
Total	**100.00**

Note:
(*)Graphite_Clay is a mixture of graphite with muscovite and kaolinite; Others include mixed spectra of minerals; Fe oxyhydroxide includes mixture of Fe oxyhydroxide and clay.
Numbers may not add due to rounding.

13.1.2 Mineral Processing

During the PEA Study, several testwork campaigns were conducted by Actlabs, ProGraphite GmbH, Dorfner Anzaplan, and SGS laboratories. The testwork from Actlabs, ProGraphite GmbH, and Dorfner Anzaplan generated preliminary concentrates which were tested for quality (e.g., Brunauer-

Emett-Teller specific surface area analysis, acid, and alkaline purification). The results of these tests indicated that graphite from the Lola deposit is suitable for a wide range of graphite applications in traditional markets (e.g., refractories, crucibles, friction products, carbon brushes, and sealants) and in new technology applications (e.g., energy applications, and spherical graphite for lithium-ion batteries). The applicability of Lola's graphite to new technology stems from a favourable ash composition, high crystallinity, and high oxidation resistance.

The testwork completed by SGS and reported in May 2018 formed the basis of the PEA Study, and considered grindability, scrubbing, flotation, and solid/liquid separation test work.

The SGS campaign used samples from the Lola deposit to create a master composite and variability composites. The master composite graded 5.98% C(g) and 0.19% S and the variability composites ranged from 2.83% C(t) to 11.0% C(t). The mineralogical analysis showed that the major gangue minerals were quartz, aluminum/iron silicates and oxides, feldspars, micas, and iron oxides; and that the graphite contained in the master composite was 56.6% liberated, with most of the remaining particles being exposed. Overall, less than 4% of the graphite was locked. In the slimes product, 100% of the graphite particles were liberated; the aggressive agglomeration of the slimes is likely due to the presence of kaolinite.

The Bond ball mill work index of the master composite was 10.7 kWh/t, ranking the sample as soft ore. The scrubbing tests showed size reduction without the addition of media, which is advantageous in preserving graphite flake size.

Roughing and cleaning tests were used to develop a process flowsheet, which treated coarse and fine flotation concentrates (+100/-100 mesh) separately to improve the final concentrate grade. The best cleaner flotation tests on the master composite produced concentrates all above 96.3% C(t) at 78.7%, and 83.2 C(t) recovery. The test work found that the fine (-100 mesh) product could be improved by using longer attrition times prior to flotation (up to 93.5% C(t)).

The graphite purity was high over a range of size fractions: bulk flotation tests produced high concentrate grades of 98.9% C(t) for the +48 mesh fraction, 96.1% C(t) for the +80 mesh fraction, 94.6% for the +100 mesh fraction, and 97.9% C(t) for the - 100 mesh fraction. An overall recovery of 75.3% was obtained for the processing of 150 kg of feed material.

The variability composites showed some promise in all samples with final coarse concentrates all grading greater than 93.2% C(t). In general, most of the fine concentrates required more attrition milling time to achieve greater than 95% C(t), but all were above 90% C(t).

13.2 SGS Saprolite Test Work Program

Following the preliminary economic assessment study, a test work campaign on the saprolite ore was developed to build and optimise the metallurgical results. The test work campaign was planned in 2018 and executed in 2018-2019 by SGS Lakefield.

13.2.1 Master Composite Sample

Samples from three (3) ore types (1,590 kg) were sent to SGS to create a master composite for the test work program: graphite soil, soft saprolite and hard saprolite (Figure 13.1). The graphite content in these samples ranged from 3.41% C(g) to 6.45% C(g). The samples were used to create a master composite sample, which represented the planned average mill feed and the expected mass distribution of the three (3) ore types in the mining plan. An initial composite was created from the first iteration of the mining plan, blending 3% soil, 94% soft saprolite, and 3% hard saprolite, resulting in a graphite head grade of 5.23% C(t) and 0.42% S.

Before the test work campaign began, the mining plan was altered, and the master composite was re-blended to account for the change. A second series of lower grade samples were sent to SGS to adjust the composite to the new expected head grade of 4.2% C(t). The new samples were re-mixed with the composite in the ratio shown in Table 13.2 to create the final master composite for this testwork.

Table 13.2 – Blending Ratios used in the Creation of the Master Composite

Sample	Soil (%)	Soft Saprolite (%)	Hard Saprolite (%)
Original Master Composite	1.0	31.9	1.0
80408 Soil	3.9	-	-
80235 Soft Saprolite	-	-	-
80233 Soft Saprolite	-	43.2	-
80242 Hard Saprolite	-	-	19.0

Source: DRA, 2019

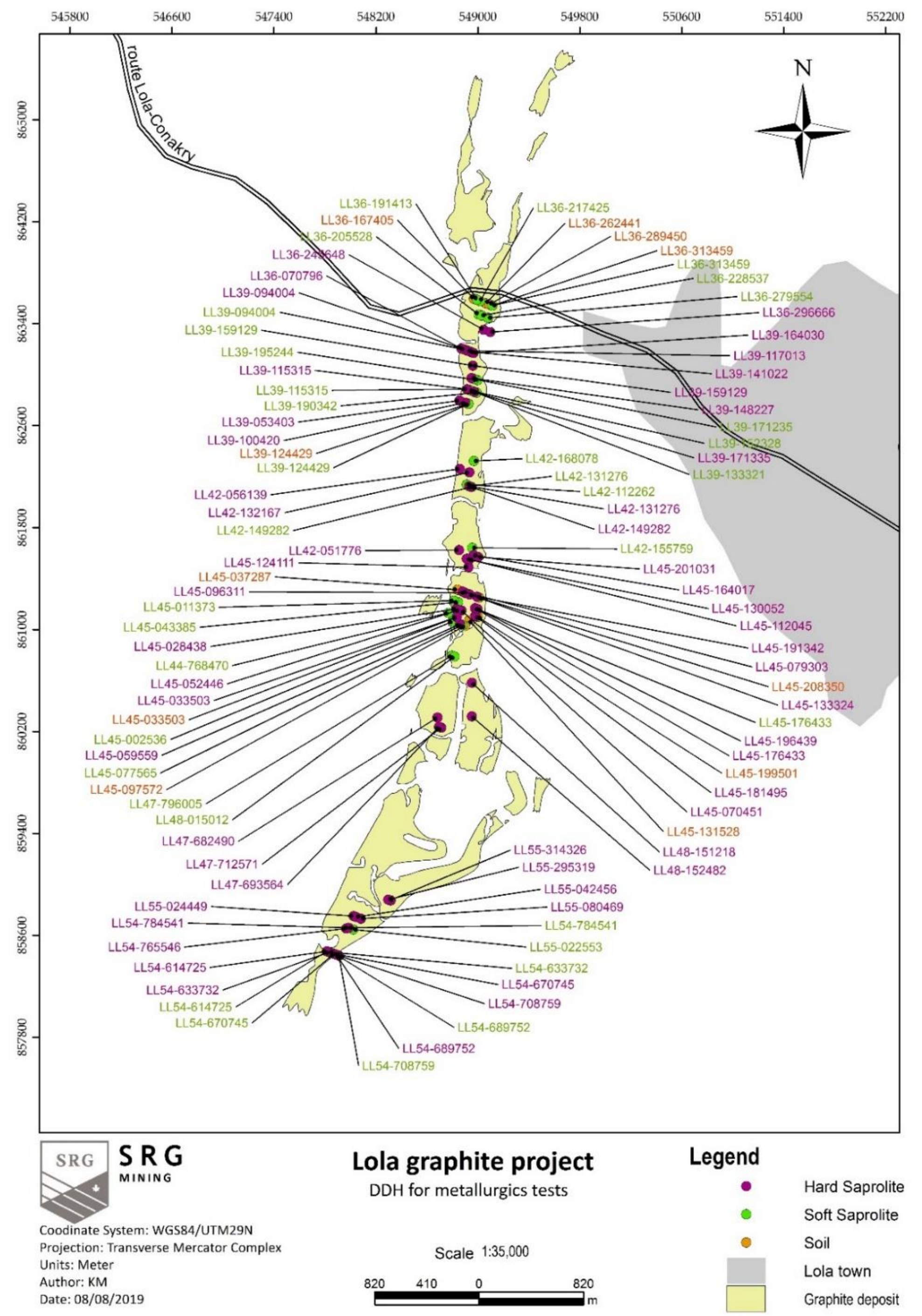
13.2.2 Grindability of the Master Composite

During the comminution testing campaign, the composite sample was found very friable to sustain the tests conditions for Bond Crushing Work Index and Rod Mill Work Index. Unconfined compressive strength (UCS) testing was not possible due to the friability of the sample.

The Bond Work Index testing resulted in 10.4 kWh/t value, which is consistent with the ore being soft. Since primary grind size targets for graphite ores are typically between P80 = 200 and 250 microns, the test was performed at a screen size of 300 microns.

Bond Abrasion test resulted in 0.035 g which allows to describe the sample as low abrasion.

Figure 13.1 – Map of the Lola Deposit showing the Location of Saprolite



13.2.3 MINERALOGY

The master composite was examined by optical microscopy, scanning electron microscope (with an energy dispersive spectrometer) (SEM-EDS) and X-ray diffraction (XRD) analysis. The XRD analysis identified that major mineralisation's in the sample are quartz, moderate kaolinite, minor graphite, and mica, with minor traces of sillimanite, goethite, chlorite, and pyrite.

The graphite made up 4-5% of the sample and was found to be fine-grained (between <20 µm and 2 mm) and generally smaller than 300 µm. From the master composite, 15-20% of the graphite was found to be liberated with predominant associations with non-sulphide gangue (70-75%). There was also some (5-10%) association with iron-oxides and iron-oxyhydroxides.

13.2.4 FLOTATION TEST WORK

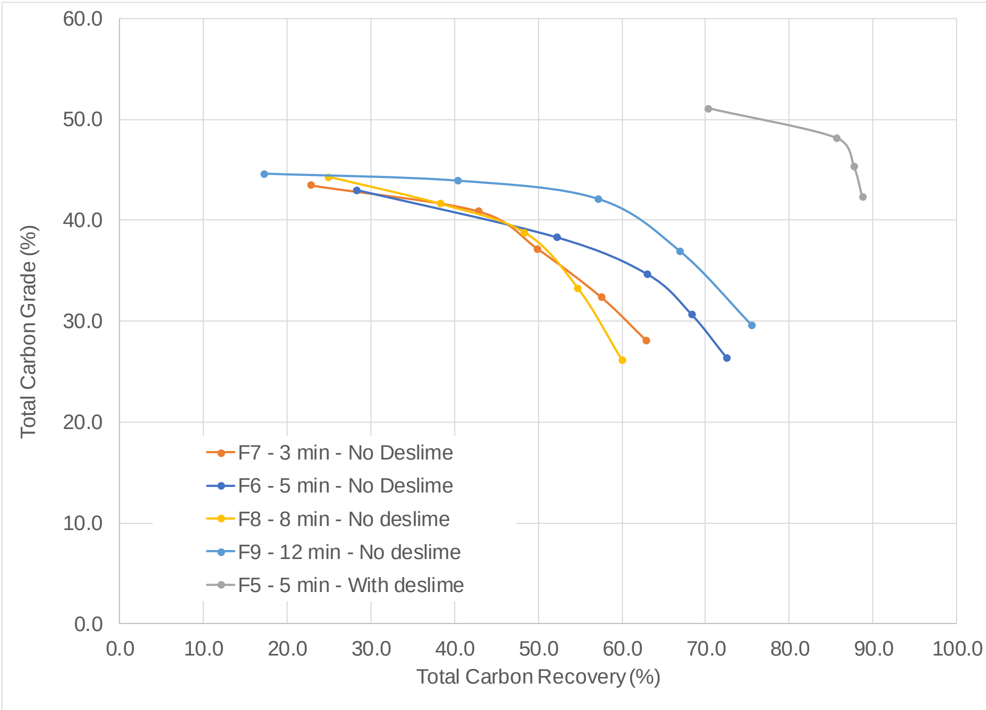
The flotation test work in this study aimed at refining the flowsheet determined during the previous study (Figure 13.3). The preliminary flotation test of the new campaign trialled the flowsheet from the previous study with the new master composite. This benchmark test produced a combined concentrate grade of 91.6% C(t) at a graphite recovery of 46.2%, which was significantly poorer recovery than obtained in the preliminary economic assessment study testwork.

13.2.4.1 ROUGHER TESTS

To improve on the performance of the benchmarking tests, a series of roughing tests were designed to focus on creating a graphite rougher concentrate of acceptable quality at high recovery. The roughing testwork considered the effect of scrubbing (by varying scrubbing time) and the effect of desliming the rougher flotation feed. The composites were deslimed using a screen in the laboratory (screening the scrubbed and reground ore at 400 mesh).

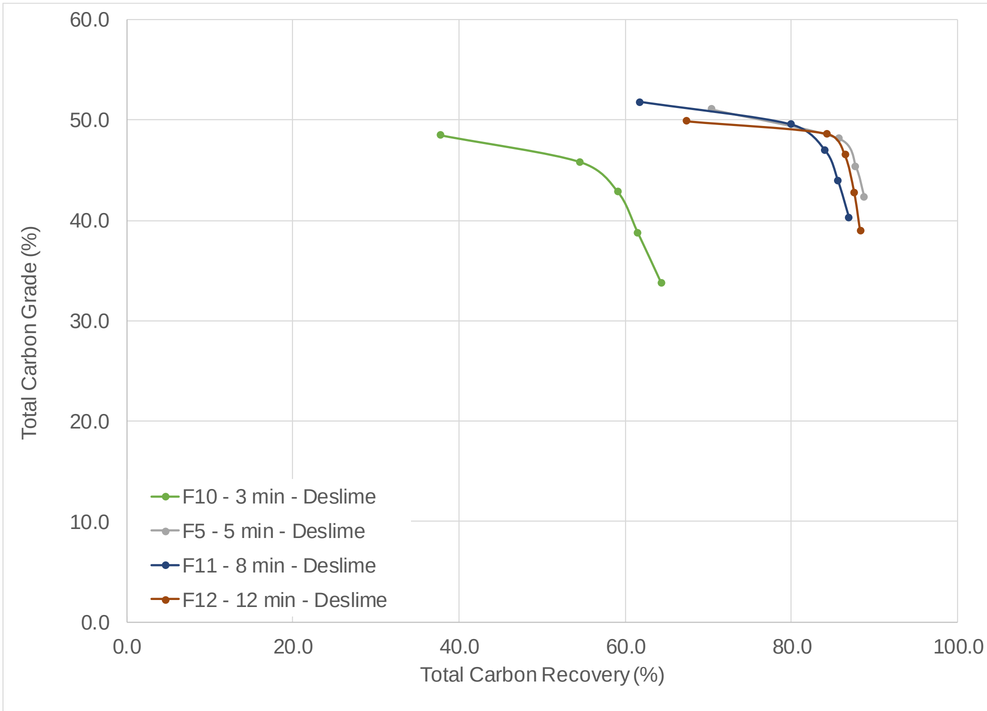
The roughing tests show that desliming the feed prior to flotation resulted in a significant improvement in flotation response (Figure 13.2). The results also show that the scrubbing time is also important: if the time is insufficient the flotation response will decrease. However, the effect of scrubbing time appears to plateau after 8 minutes (Figure 13.3).

Figure 13.2 - Rougher Flotation Test Results With and Without Desliming



Source: DRA, 2019

Figure 13.3 – Rougher Flotation Tests with Increasing Scrubbing Time



Source: DRA, 2019

13.2.4.2 *Desliming Using Cyclones*

Given the positive effect of desliming on the flotation response of the master composite, it was decided to deslime a large quantity of material using a hydrocyclone as this would better replicate an industrial process. Approximately 15 kg of material was batch scrubbed, recombined, and passed through a hydrocyclone to deslime the rougher feed. Two (2) repeat tests were performed from this deslimed feed to validate the flotation response and reproducibility. The tests showed good reproducibility, and the roughing test with the deslimed rougher feed was able to produce a rougher concentrate at 44.7% C(t) and 96.6% recovery (Table 13.3).

Table 13.3 – Deslimed Master Composite Rougher Flotation Results

Test	Product	Weight (%)	Grade (% C(t))	Distribution %
Deslimed Master Composite	Rougher Concentrate	12.8	44.7	96.6
	Rougher Tails	87.2	0.23	3.4
	Head	100	5.93	100

Source: DRA, 2019

13.2.4.3 *CLEANING CIRCUIT OPTIMIZATION*

Once an acceptable rougher flotation product was achieved, the emphasis of the test work moved on to the cleaning stages of flotation. Cleaning the rougher concentrates was considered in two (2) parts: primary and secondary cleaning.

a. Primary Cleaning

The primary cleaning tests consisted of five (5) tests, varying the time of polishing prior to flotation and the type of mill used for polishing. The polishing mill used 1/2" ceramic media whereas the stirred media mill (SMM) used 6 mm steel balls. These tests showed that increasing the time to 30 minutes in the polishing mill resulted in a primary cleaning concentrate of increased grades (at similar recovery). In these tests, a polishing ball mill was found to give better results than a stirred media mill. The tests with the stirred media mill resulted in higher grades at a lower recovery.

The polishing mill testwork resulted in a third cleaner concentrate grading between 79.5% and 84.8% C(t), at recoveries ranging from 87.5% – 90.5%. The SMM test resulted in a third cleaner concentrate at 92% C(t) at 81.2% recovery.

The effect of milling on the graphite flake size was also considered during the primary cleaning tests. With the use of a polishing mill, the graphite flake sizes were similar across all the tests, however, the stirred media mill resulted in graphite flake loss in the size fractions greater than 65 mesh. Given that the flake size adds value to the graphite concentrate, the polishing mill was selected to move forward with additional testing.

b. Secondary Cleaning

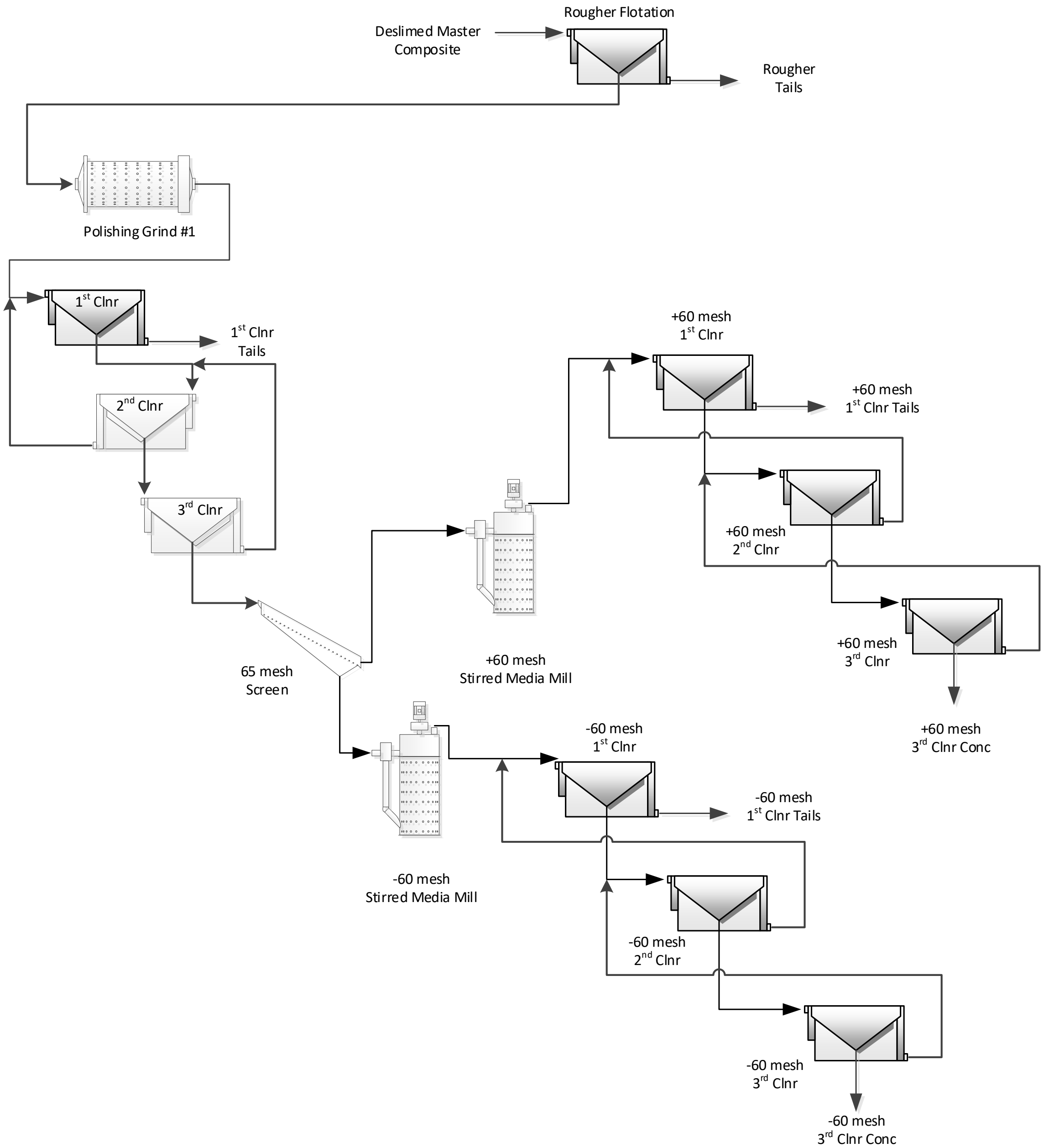
The secondary cleaning testwork was required to produce a graphite concentrate of saleable grade, but further upgrading the primary cleaning concentrate. The testwork considering two (2) cleaning options:

- Splitting the first cleaner concentrate into coarse and fine fractions to adjust secondary polishing and flotation to each particle type (Figure 13.4);
- Re-cleaning the whole first cleaner concentrate (Figure 13.5).

The testwork considered different mill types (SMM and Pebble Milling) and different polishing times for the coarse and fine particle sizes. The flotation response and the product size (graphite flake size) were used to compare the results of each test. The best results were given 6 minutes of polishing for coarse graphite and 15 minutes for fine graphite in an SMM (with the split at 60 mesh produced a final concentrate of 95.8% C(t) at 78.8% recovery. The split flowsheet concentrates with SMM polishing provided a range of results from: 95.0 – 95.8% C(t) and 76.1 – 83.0% recovery.

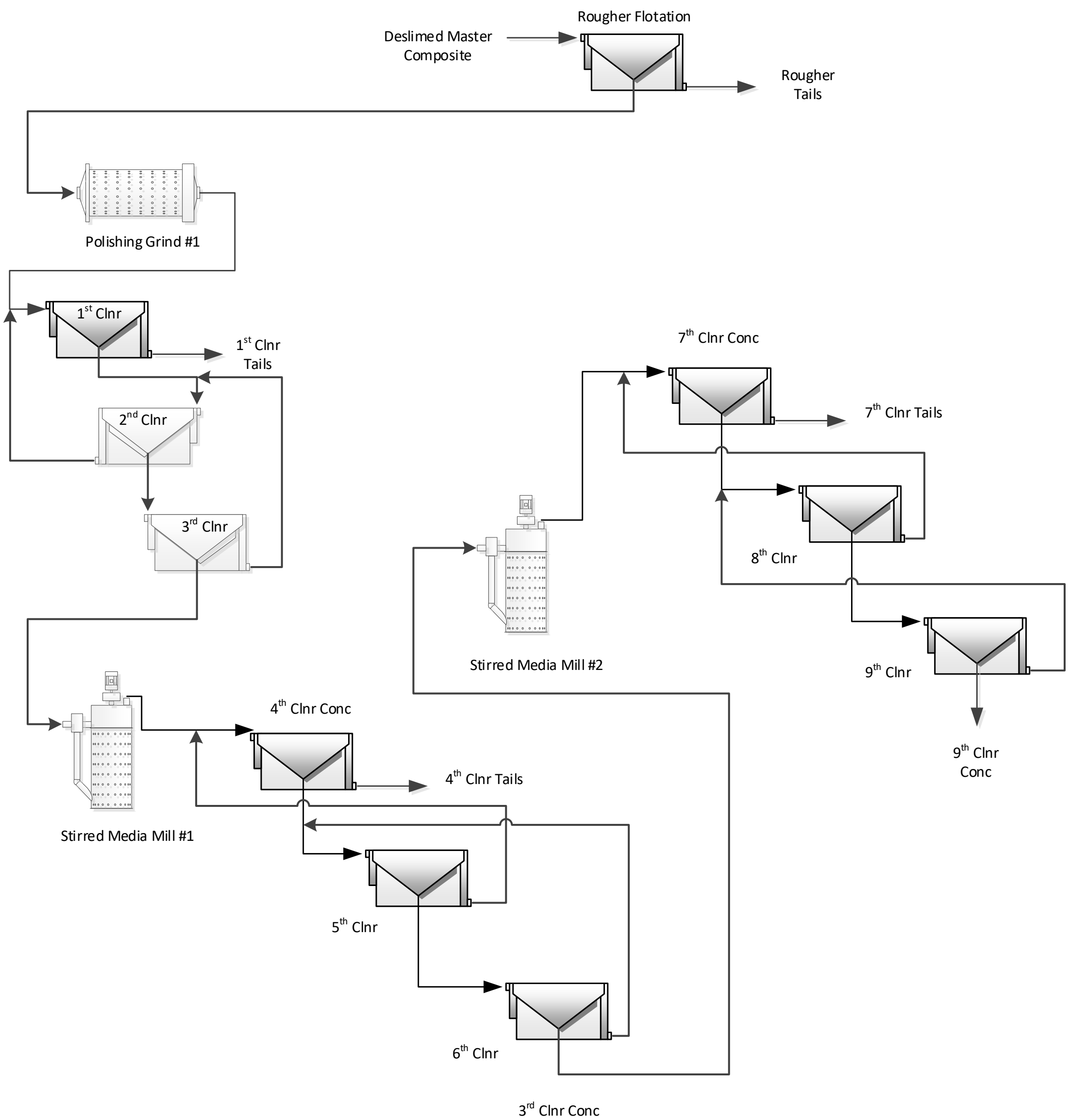
The continuous flowsheet considered grinding in a SMM, with a single and two (2) stage grinding process. With a single stage of grinding, six (6) stages of cleaning were insufficient to produce the desired concentrate grade of 94% C(t). However, using two (2) grinding stages and nine (9) stages of cleaning was able to produce a grade of 97.7% C(t) at 71.3% recovery.

Figure 13.4 – Split Flowsheet



Source: DRA, 2019

Figure 13.5 – Sequential Flowsheet



Source: DRA, 2019

13.2.4.4 *Locked Cycle and Variability Test Work*

The split flowsheet (Figure 13.4) and sequential flowsheet (Figure 13.5) were validated with locked cycle testwork on the master composite. In locked cycle testing, the split flowsheet produced a combined concentrate grade of 94.9% C(t) at 80.8% recovery. The sequential flowsheet produced a combined graphite concentrate of 97.1% C(t); however, the recovery was lower at 68.4%.

The graphite distribution by size class (assay-by-size) data for the split flowsheet concentrate is shown in Table 13.4. It shows that the graphite is purest in the coarser size fractions.

Table 13.4 – Graphite Distribution in the Combined Concentrate by Size Fraction (Split Flowsheet Lock Cycle Test)

Concentrate Distribution	Weight		Assays, %	% Distr.
	g	%	C(t)	C(t)
+32 mesh	1.1	1.6	97.2	1.6
+48 mesh	7.6	11.2	96.3	11.4
+65 mesh	8.7	12.8	95.2	12.9
+80 mesh	5.1	7.6	95.8	7.7
+100 mesh	4.9	7.2	95.4	7.2
+150 mesh	9.7	14.4	95.9	14.6
+200 mesh	8.7	12.8	95.0	12.8
+325 mesh	11.6	17.2	94.6	17.2
+400 mesh	3.0	4.4	93.6	4.3
-400 mesh	7.3	10.8	90.6	10.3
Final Concentrate (SA)	67.6	100.0	94.8	100.0

Source: DRA, 2019

To gain an understanding of variability, a soil, high grade, and low-grade samples were tested. The different samples showed a large degree of variability with combined concentrate grade varying from 93.9% C(t) to 97.9% C(t) and final recovery varying 64.1% to 84.7%.

13.3 SGS Concept Level Testing on Hard Rock and Blends

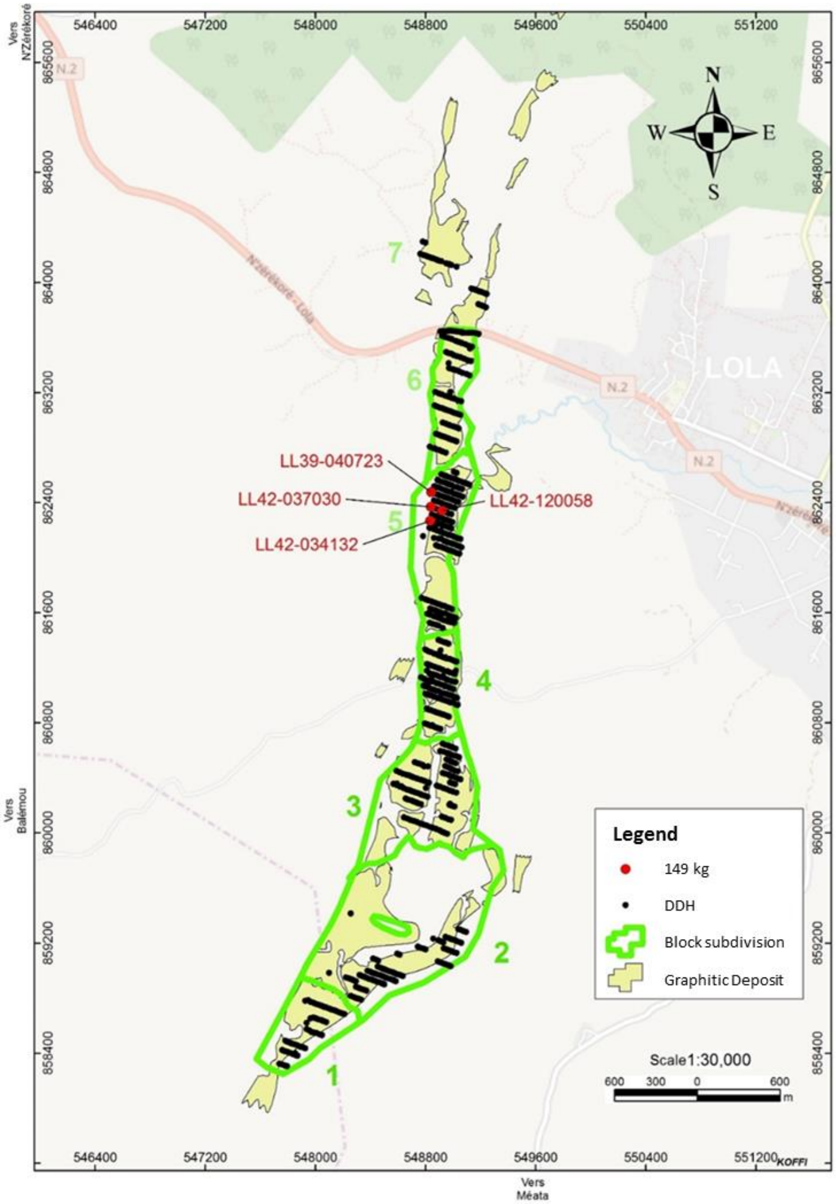
Further to the saprolite optimization testing, an opportunity was identified in the hard rock samples. High-level testwork was completed by SGS to investigate this option. The testwork completed by SGS in May-June 2019 considered grindability, flotation, and solid/liquid separation testwork on tailings (flocculant scoping, and two stage static settling).

The sample for test work included 149 kg of ore from the Lola deposit considered hard rock sampled from four locations in the deposit (Figure 13.6). The head grade of the samples varied from 2.24% C(g) to 9.42% C(g) with an average grade of 3.79% C(g).

13.3.1 Grindability

A representative sample of hard rock was submitted to SGS for grindability testing (Bond and Rod Work Indices, abrasion testing, and SMC testing) (Table 13.5 and Table 13.6). The abrasion index was measured as 0.318.

Figure 13.6 – Map of the Lola Deposit showing the Location of Hard Rock Samples



Source: DRA, 2019

Table 13.5 – Bond and Rod Indices for Hard Rock Samples

Sample Name	Mesh of Grind	F80 (µm)	P80 (µm)	Gram per Revolution	Work Index (kWh/t)
Hard Rock Sample (Bond)	48	2,504	246	2.29	15.3
Hard Rock Sample (Rod)	14	11,336	909	12.27	11.8

Source: DRA, 2019

Table 13.6 – SMC Test® Results

Sample	DWI (kWh/m³)	DWI (%)	Mi Parameters (kWh/t)			SG	A	b	A*b	ta	SCSE (kWh/t)
			Mia	Mih	Mic						
Hard Rock Sample (Bond)	6.1	42.0	17.7	12.8	6.6	2.73	81.4	0.56	45.6	0.43	9.35

Source: DRA, 2019

13.3.2 FLOTATION WORK

The flotation tests followed the split flowsheet determined during the saprolite optimisation test program. The hard rock tests considered 100% hard rock, and blends of hard rock and saprolite ore. The preliminary roughing tests focused on establishing an appropriate grind time for the hard rock, followed by cleaning tests. The results from the hard rock only flotation tests achieved a grade of 96.2% C(t) at 90.3% recovery.

Two (2) blends (25% hard rock, 75% saprolite; and 45% hard rock, 55% saprolite) were tested with and without desliming. In these blends, desliming did not improve metallurgical results. The results for these four (4) tests varied from 94.9 – 96.2% C(t) at 84.2 – 85% recovery.

It was observed that the particle size of the final concentrate improves compared to the saprolite processing and produces coarser concentrates (Table 13.7).

Table 13.7 – Comparison of Concentrate Particle Size Distribution and Assays for Hard Rock Blends

Product	25% Hard Rock: 75% Master Composite		45% Hard Rock: 55% Master Composite	
	Weight%	Assay (%C(t))	Weight%	Assay (%C(t))
+32 mesh	2.2	98.4	1.6	91.7
+48 mesh	17.2	95.9	15.2	96.2
+65 mesh	18.2	95.9	18.0	96.1
+80 mesh	10.0	95.6	10.0	96.1

Product	25% Hard Rock: 75% Master Composite		45% Hard Rock: 55% Master Composite	
+100 mesh	9.4	95.0	8.8	95.6
+150 mesh	13.0	95.2	14.0	95.3
+200 mesh	10.6	94.2	12.0	95.7
+325 mesh	10.2	92.9	11.6	94.3
+400 mesh	3.0	92.9	2.8	94.0
-400 mesh	6.2	90.0	6.0	91.4
Head (calc)	100.0	94.8	100.0	95.3

Source: DRA, 2019

13.3.3 Solid/Liquid Separation

Scoping test work was done on the hard rock combined tailings (two-stage). The hard rock tailings settled well using 13 g/t of BASF Magnafloc 10, producing a 73% underflow from a feed of 14% solids, the Total suspended solids (TSS) in the supernatant was 13 mg/L. The thickener underflow unit area (TUFUA) was 0.08 m2/(t/d) and the initial settling rate (ISR) was 774 m3/m2/d.

13.4 Concentrate Production Pilot Campaign at SGS

SGS conducted a pilot plant, processing 200 tonnes of ore from surface material sampled from various locations in the Lola deposit (as shown in Figure 13.7). The goal of the pilot plant was to validate the metallurgical response of the Lola ore and create a quantity of concentrate for business development purposes. The key results from the pilot plant are shown in Table 13.8.

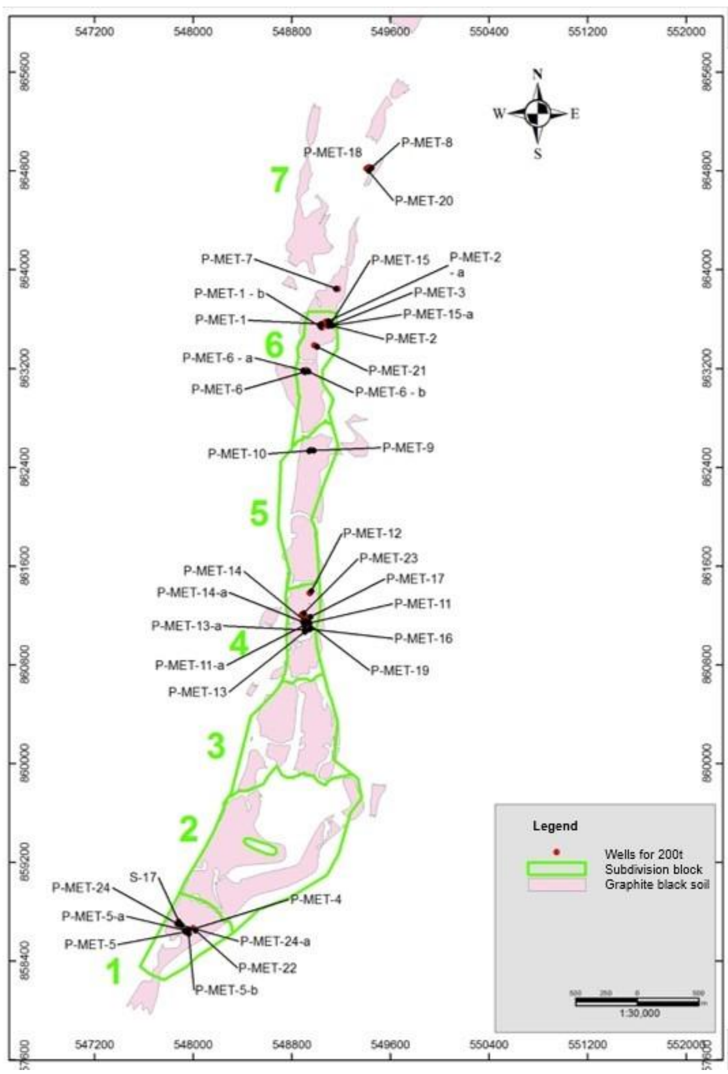
Table 13.8 – Key Results from the Concentrate Production Pilot Campaign

Parameter	Value
Feed Weight	200 t
Head Grade	9.11% C(t)
Mass Lost to Desliming	9.7%
Graphite Lost to Desliming	3.9%
Flotation Recovery	88.0%
Overall Recovery	84.5%
Mass Recovery	8.0%
Concentrate Grade (Average)	96.8% C(t)

Parameter	Value
Flake Distribution	
+48 mesh	13%
+80 mesh	26%
+100 mesh	12%
<100 mesh	49%

Source: DRA, 2019

Figure 13.7 – Sampling Locations for the 200 t of Pilot Plant Processing



Source: DRA, 2019

13.5 Bulk Material Properties

Jenike and Johanson Ltd (enike and Johanson) were commissioned to conduct flow and material property tests on the Lola ore. It is important to define the minimum flow angles of bins and hoppers to prevent down time due to plugged equipment. Jenike and Johanson received 140 kg of material from SGS Canada (-8 mesh) representing the three (3) principal types of ore from the Lola deposit: hard rock, hard saprolite, and soft saprolite. The test program at Jenike and Johanson touched on five (5) key components: particle density, saturation moistures, compressibility, flow function, and wall friction. The key measurable parameters are summarized in Table 13.9.

This information, alongside the flow function and wall friction, were used by Jenike and Johanson to calculate outlet size requirements for hoppers and hopper wall angles to achieve mass flow.

Table 13.9 – Test Parameters Determined by Jenike and Johanson

Ore Type	Saturation Moisture	Tested Moisture	Bulk Density Range (kg/m³)	Particle Density (kg/m³)
Hard Rock	21.0	1.52 (As Received)		2,427
Hard Saprolite	24.7	19.0	1,280-1,770	2,334
		15.0	1,120-1,540	
Soft Saprolite	26.9	22.0	1,180-1,734	2,355

Source: Jenike and Johanson, 2019

Regarding the wall friction properties, it should be noted that the saprolite and soil samples were found to be cohesive and sensitive to over-pressure and can form rat holes and stable arches. Jenike and Johanson recommends handling the material gently and utilising mass flow (first in, first out flow pattern). During conversations with Jenike and Johanson, a Kamengo style feeder was recommended to promote mass flow. At the tested moistures, the results showed that it was largely impossible to achieve unassisted gravity flow – practically, this means that the storage of saprolite material in bins/hoppers for any extended periods of time is impractical.

13.6 Vendor Testing

13.6.1 Centrifuge Testing (Andritz)

Centrifuge technology was tested by Andritz Separation Inc. (Andritz). A centrifuge was considered as an alternate technical option to the use of a filter press for the graphite concentrates, to dewater to less than 20% moisture. A 20 lb concentrate sample was provided from SGS to conduct this test work, which considered centrifuge cake quality and concentrate clarity. In the test work the centrifuge gave similar cake moistures (15-16% moisture) to a filter press (12-14% moisture).

Furthermore, the spun samples show floating solids on the top of the vessel and a secondary layer of 'soft' solids near the spun solids – both materials would be included in the concentrate. A centrifuge was eliminated as a technical option for the presence of solids in the filtrate and because it did not show any technical advantage (cake moisture) to a filter press.

13.6.2 SCRUBBING TESTING (MET-SOLVE)

Pilot scrubbing test work was conducted at Met-Solve Laboratories Inc (Met-Solve) to determine the relative rate of de-agglomeration and the effects of ceramic media. This test work would also define the scrubber product size distribution and would be used to determine scale-up parameters from the pilot unit.

The scrubbing tests utilized a Sepro Pilot Scrubber (2.2 kW 125xϕ77 cm) with a 50% pulp density in each case. The samples consisted of 498 kg of soil, quartz, soft saprolite, hard saprolite, and hard rock. Each sample type was processed (tumbling, hand crushing, jaw crushing) to create a product 100% -2" for scrubbing. After comminution, the samples were combined to create three (3) composite samples for testing: the composition of each charge is shown in Table 13.10 including hard saprolite. All of the scrubbing tests were conducted for the maximum scrubbing duration of 180 seconds.

Table 13.10 – Composite Sample Used in Scrubbing Test Work

Test	Composite	Media	Composition				
			Soil	Quartz	Soft Saprolite	Hard Saprolite	Hard Rock
EK101	Soft	-	0.08	0.02	0.82	0.08	0
EK201	Hard	-	0.02	0.1	0.51	0.34	0.03
EK301	Design Blend	-	0.05	0.06	0.7	0.17	0.02
EK102	Soft	Ceramic	0.08	0.02	0.82	0.08	0
EK202	Hard	Ceramic	0.02	0.1	0.51	0.34	0.03
EK302	Design Blend	Ceramic	0.05	0.06	0.7	0.17	0.02
EK400	Hard Saprolite	Ceramic	0	0.10	0	0.90	0

Source: DRA, 2019

The scrubbing results are judged by comparing the weight of the agglomerates after scrubbing, with the weight of the test which gives a completion number for the test. Each of the tests achieved over 99% completion (Table 13.11). The results show that while the addition of ceramic media had little effect on the completion of the test, it does affect the product size of the scrubber. Given the measured percent passing 1 mm, a large quantity of coarse particles is not expected.

Table 13.11 – Scrubbing Test work Results.

Test	Agglomerate (kg)	Product (kg)	Completion (%)	P_{80} (µm)	%passing 1 mm
EK101	0.304	42.597	99.29	1164	78.60%
EK201	0.308	44.395	99.31	3248	72.10%
EK301	0.15	42.239	99.64	2437	72.90%
EK102	0.214	21.428	99	218	89.50%
EK202	0.119	21.482	99.45	739	80.60%
EK302	0.035	22.112	99.84	375	84.80%
EK400	0.273	22.440	99.88	824	82.52%

Source: DRA, 2019

13.6.3 Screen Testing (Met-Solve)

Met-Solve tested the applicability of wet screening to the scrubber discharge and the first cleaner concentrates. Samples were sent from SGS to Met-Solve for testing and technology selection (type of wet screen). The scrubber discharge test showed the applicability of the material to a conventional screen, and the screen sizing was confirmed independently by Met-Solve.

For the first cleaner concentrate, Met-Solve determined that a traditional screen was not applicable to the material due to the cut size and nature of the material. The technical recommendation from Met-Solve was to investigate the use of a Stack Sizer type screen.

13.6.4 1st Cleaner Concentrate Screening (Derrick)

Following the recommendation by Met-Solve, a sample of concentrate was sent to Derrick Corporation (Derrick) for testing on their stack sizer technology. A series of 18 tests were performed on a full-size Stack Sizer with different panel apertures and wash water conditions. The cut size of interest in this case was 150 µm, and in these tests the overall screening efficiency was reported between 71.0 and 77.2%. For the production of coarse graphite, the efficiency of the oversize material is of particular importance: the Derrick test results with a 0.15 MT urethane panel, with and without wash water is reproduced in Table 13.12. Other screen panels increased the efficiency to the undersize and reduced the oversize efficiency – showing that the different panels could provide some operational flexibility. These tests demonstrated the applicability of Stack Sizer technology to the first cleaner concentrate.

Table 13.12 – Derrick Stack Sizer Test Results

Feed				Oversize			Undersize			Efficiency at 150 µm		
Test No	Water (m^3/h)	Dry Solids (MTPH)	Solids (%)	Weight (%)	Solids (%)	Minus 150 micron (%)	Weight (%)	Solids (%)	Plus 150 micron (%)	Oversize (%)	Undersize (%)	Overall (%)
5	0	5	17.1	79.3	35.9	30.3	20.7	5.6	8.8	96.4	47.1	74.6
6	23	5	17.1	76.4	29.5	27.7	23.6	5	9.6	95.5	53.9	77.1

Source: DRA, 2019

13.6.5 Mineral Sizer Testing (FLSmidth ABON)

FLSmidth ABON conducted testing on the Unconfined Compressive Strength (UCS), Pennsylvania Crusher Abrasion Test (PAC), and angle of repose on samples from the Lola deposit. Three (3) samples were submitted for testing: soft saprolite, hard saprolite, and hard rock core sections.

Given the nature of the material for the two (2) saprolite samples, it was impossible to conduct a UCS test: the material was considered too soft to test, as the lumps of saprolite could be broken apart by hand.

The angle of repose was measured to be 30 degrees for the soft saprolite samples and 32 degrees for the hard saprolite samples. It was not possible to measure the angle of repose on the hard rock sample, given the nature (size and shape) of the sample.

The PAC test was performed on the hard rock sample and the abrasion index was determined to be 0.0821 g.

13.6.6 Cyclone Testing

Desliming cyclone circuit is recommended to be a part of the commercial plant flowsheet. The possibility of the cyclone desliming was observed during the SGS test work campaign. Vendor test work was done with one of the reputable vendors of the deslime cyclone equipment. The test showed promising results, however additional testing is required to ensure slimes rejection and minimize graphite losses. Future tests can be used to determine a cyclone cluster configuration.

13.7 Conclusions and Recommendations

13.7.1 Conclusions

During the feasibility study work, the 2018-2019 process optimization program was completed on saprolite samples. The test program resulted in two (2) alternative process flowsheets, which only differ in the configuration of the secondary cleaning circuit. Both flowsheet options achieved a combined concentrate grade that meets the minimum grade required of 94% C(t) that was established by the SRG Mining Inc. The flowsheet that includes a separate secondary polishing of the coarse and fine concentrates is considered of preference for a commercial plant as it provides a better recovery compared to the single train option.

The grinding portion of the circuit has been changed for the feasibility study update to include a single stage SAG mill (SSSAG). This equipment change is required due to the increase in plant throughput. Certain equipment in the 2018-2019 study were the largest models available, such as for the scrubber. The low aspect ratio SAG mill will provide both scrubbing and size reduction in one unit.

When processing saprolite only, desliming of the rougher feed is required. This results in additional graphite losses but improved rougher flotation performance substantially. The graphite losses to the deslime cyclone overflow were exclusively small graphite flakes with a size of 30 microns or less. Liberating the -325 mesh (44 microns) graphite flakes proved difficult and failed to meet the 94% C(t) grade target. Hence, recovering more of these fines into the final concentrate would only lower the grade of the -100 mesh graphite concentrate.

Flotation of the domain composites displayed a considerable variation in terms of concentrate grades and graphite recovery, therefore a mill feed blending work is very important for successful operation of the commercial plant.

A combination of polishing in the tumbling mill and polishing in the vertical stirred media mill is required to achieve the grade targets due to the presence of graphite interlayered with gangue minerals. A higher energy input is required to liberate the graphite from the interlayered gangue compared to gangue minerals that are attached to the outside of the graphite flakes.

Solid liquid separation tests produced underflow densities for the Master composite concentrate and tailings of up to 35.9% w/w solids and 49.9% w/w solids, respectively. A typical phenomenon of the froth build-up was observed during the graphite concentrate settling tests. Due to the difficulties associated with concentrate thickening, there is no thickener in the FSU. The concentrate will be sent directly to filtration.

Testing of the hard rock material demonstrated that the resource can be expanded with this type of rock when processed as purely hard rock as well as mixes with the saprolite. As expected, the hard rock material is substantially harder than the saprolite, and preferentially to be processed as mixes with the soft rock.

Mixing of hard and soft rock material has a positive effect on the metallurgical results via improved recovery, no reduction in concentrate grade, and coarser final concentrates as compared to saprolite feed processing. It was observed that no desliming was required during processing of the hard and soft rock mixes to achieve a concentrate grade, recovery, and particle size targets.

Consequentially, the settling properties of the tailings improves when a hard rock material is added to the feed due to lesser fraction of extra fines in the hard rock. Concentrate settling performance, as expected, was observed to be the same as during the saprolite material testing campaign.

A concentrate production campaign involved a pilot plant scale processing of 200 t of surface sample allowed generation of the concentrate for marketing purposes as well as generated several samples for the equipment supplier testing.

Testing of material handling properties allowed to project the saprolite material behavior with regards to the conveying and storage and reduced technical risks for the material handling design.

13.7.2 Recommendations

Some additional testing is recommended prior to the beginning of detailed engineering stage of the Project to increase the level of engineering definition and reduce the technical risks. The program is recommended to include:

- Variability comminution testing for the hard rock material to determine a hardness variation within this type of rock to reduce the process risks for the comminution equipment design ;
- Locked cycle flotation testing for hard and soft rock mixes is required to produce metallurgical results that closely replicate the commercial plant conditions and evaluate the produced recovery numbers and concentrate grade and particle size;
- Comprehensive variability testing (comminution, flotation, solid/liquid separation) should be conducted on samples of the soft and hard rock to develop an understanding of the full extent of metallurgical variation that may be encountered in the Lola deposit. Once the degree of variation is better understood, blending strategies can be developed for the commercial operation.

14 MINERAL RESOURCES ESTIMATE

The Mineral Resource Estimate of the Lola Graphite deposit is based on 638 boreholes, for a total of 22,240 m and ten (10) trenches for 1,326 m. The area drilled out and accounted for this Mineral Resource represents roughly 54 of the 2.15 km^2 surface area of the entire deposit, as defined by geological mapping and geophysical means.

The Mineral Resources Estimate, which was performed by Dr. Marc-Antoine Audet, P. Geo., Ph.D. Geology, has been rigorously verified and validated to ensure compliance to NI 43-101 – Standards of Disclosure for Mineral Projects. Validation involved independently re-interpreting and re-estimating the Measured and surrounding Indicated mineral resources portions of the deposit. Results of the validation yield a 1% increase in tonnage and 1% decrease in Cg grade.

The criteria used for classifying the estimated resources are based on confidence and continuity of geology and grades. The CIM definition standards for resource classification are provided in Section 14.2.

The Mineral Resource Estimate was prepared using a block model constrained with 3D wireframes of the principal mineralized domains. Values for graphitic carbon were interpolated using the Gemcom software with Ordinary Kriging (OK) interpolation methodologies on 5 × 5 × 2 m blocks. A preliminary open pit optimization algorithm was run on the estimated grade block model to constrain the resources and support the CIM's requirement that mineral resources have “reasonable prospects for eventual economic extraction.”

An optimized pit shell was determined using the Lerchs-Grossman (LG) algorithm in the MineSight® software. Only mineralization contained within the pit shell has been included in the resource estimate.

The Mineral Resource Estimate is summarized in Table 14.9 at a cut-off grade of 1.00% Cg in oxide and 1.40% Cg in fresh rock. All estimates are constrained within a Lerchs-Grossman optimised resource pit shell.

The key assumptions and methodologies used for this Resource Estimate are outlined below.

14.1 Exploratory Data Analysis

The resource modelling was carried out using Gemcom software (GEMS) and data stored in a GEMS database. GEMS use the Microsoft (MS) Jet database engine.

Drilling, surveying, and assay data were managed in a comprehensive AcQuire and then using Microsoft Access database, which provides several built-in data validation features. Assay results from Actlabs were delivered electronically in a pre-defined Microsoft Excel format, and imported directly into the AcQuire database, then automatically linked with the appropriate sample drill holes and sample intervals. Upon verification, the drill-hole, survey, and assay data were extracted and merged into the GEMS database.

14.1.1 TOPOGRAPHY

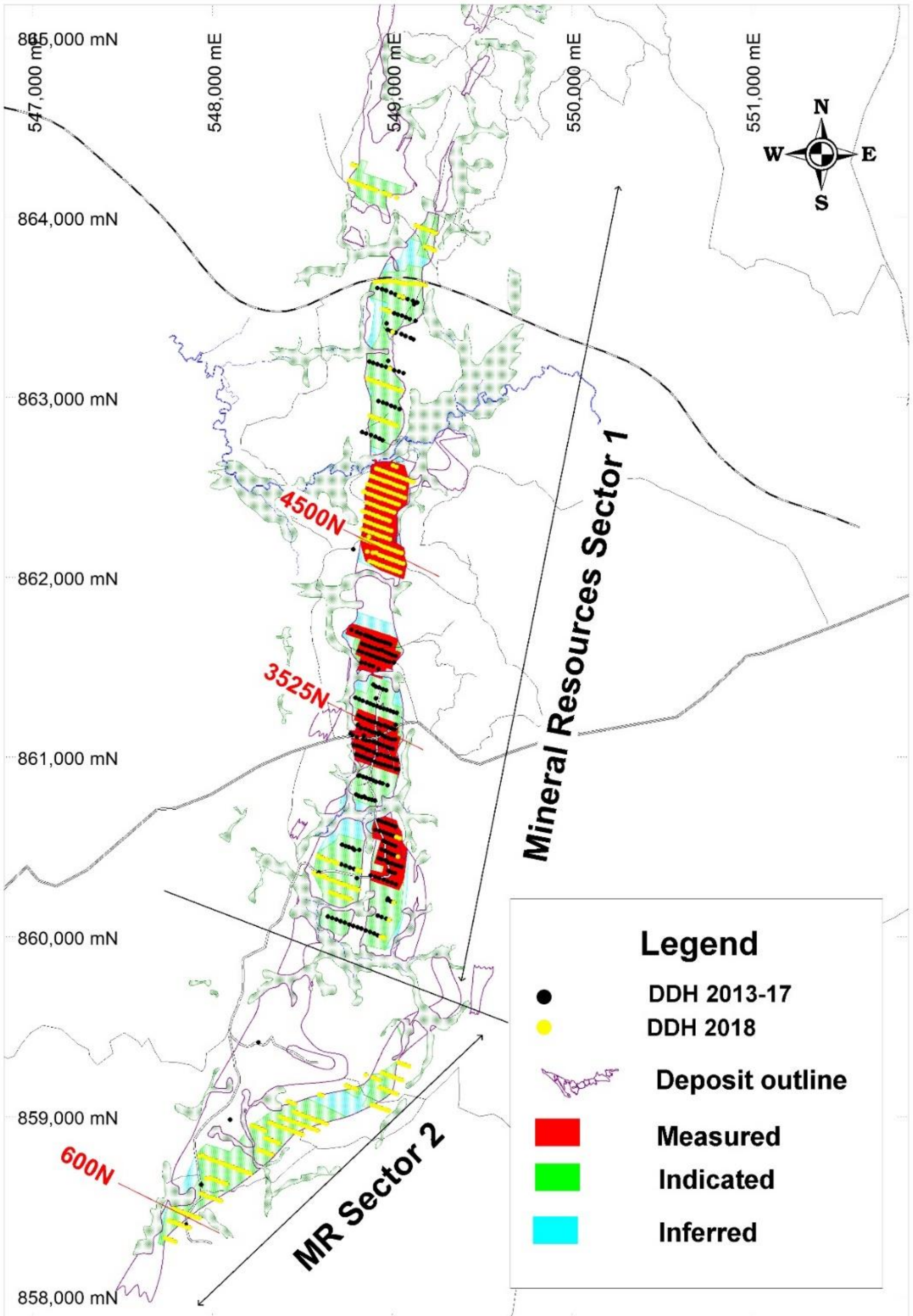
A 3D-DEM of the topography was supplied by SRG as 1.0 m contours in ASCII format. These contours were generated from an airborne survey using the EBEE drones, in 2017. Collar elevations from trenches and drill holes have been resurveyed using a differential GPS and incorporated into the topography. The topography is undulating with the highest elevation in the north and the central south (Figure 14.1). Elevations within the area of study range from 446 m to a maximum elevation of 571 m.

14.1.2 DRILL HOLES

This Mineral Resource Estimate is based on 638 drill holes (totalling 22,240 m) and ten (10) trenches (totalling 1,326 m) executed by SRG. Drill spacing varies between 20 m × 50 m, 20 m × 100 m and 20 m × 200 m. Figure 14.1 illustrates a plan view of the drill holes. Drill holes are drilled along lines oriented 110°-290°, dipping at 60° from the vertical toward 110°. The database containing drill hole and trench information was supplied by SRG in a Microsoft Access format. Logging codes used for lithological modelling are summarized in Table 14.3.

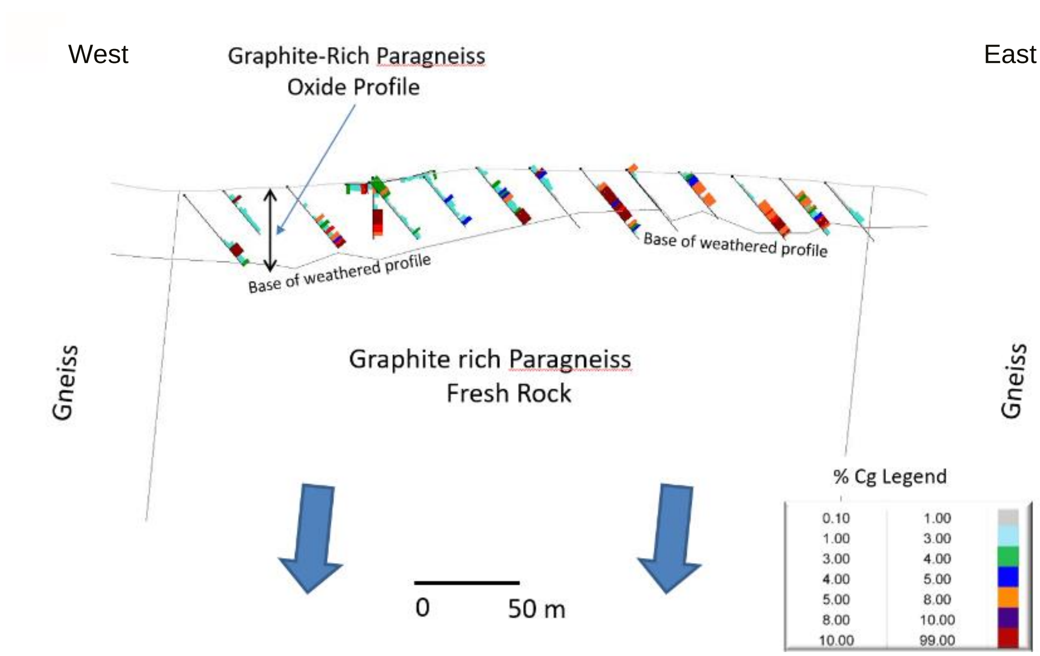
Figure 14.2 and Figure 14.3 show, at cross-sections 3400N and 4800N, the geological relationship between the weathered mineralized material and the underlying graphite rich paragneiss. The drilling results are expressed as Cg (%). The deposit continued at depth.

Figure 14.1 – Lola Graphite Deposit: Drilling and Subdivision by Sectors



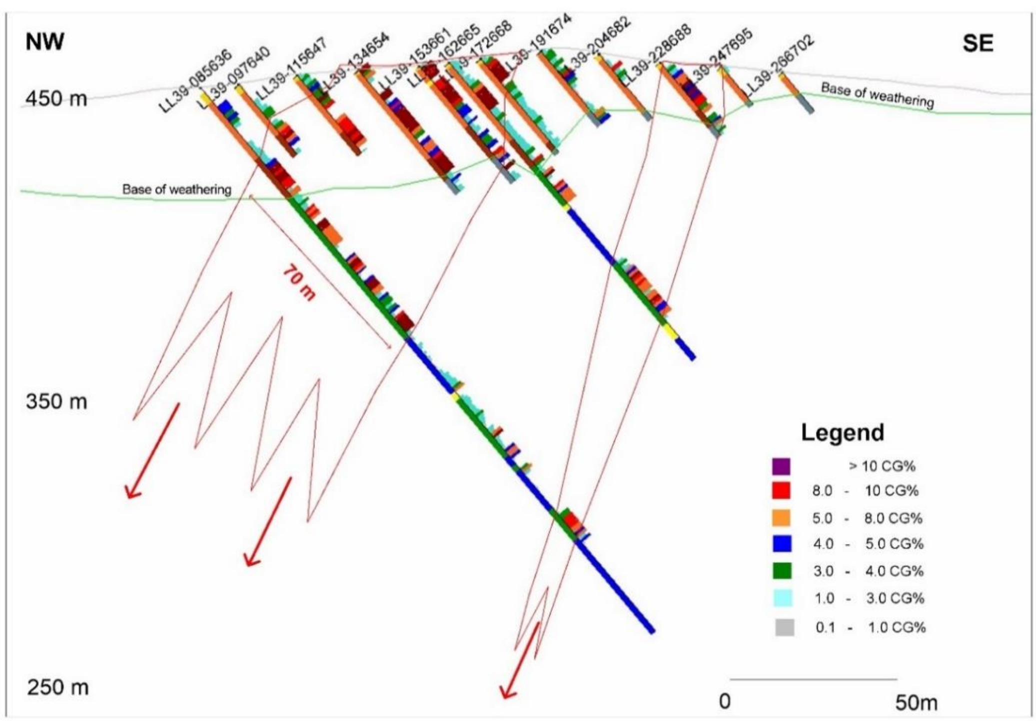
Source: DRA, 2019

Figure 14.2 – Cross-Section 3400N



Source: DRA, 2019

Figure 14.3 – Cross-Section 4800N



Source: DRA, 2019

14.1.3 Density Measurements and Rock Codes

The Reader is referred to Section 11.1.4 for details about relative density assessment.

14.2 Geological Interpretation

The Lola Graphite Project's resource database meets industry standards and is compliant with CIM codes for public reporting.

The Author is not aware, at the time of preparing this Report, of any factors, such as environmental, permitting, legal, title, taxation, socioeconomic, marketing, political, or other relevant issues, that may materially affect the Mineral Resource Estimate herein; nor that the Mineral Resource Estimate may be affected by mining, metallurgical, infrastructure or other relevant factors.

Mineral Resource Estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. A checklist of assessment and reporting criteria is presented in Table 14.1.

Table 14.1 – Check List of Assessment and Reporting Criteria

Items	Discussion	Confidence
Drilling Techniques	Diamond drill holes of HQ size.	High
Logging	All drill holes were geologically logged by qualified geologists using standardized codes. The logging was of an appropriate standard for grade estimation.	High
Drill Sample Recovery	Recoveries recorded for every core run.	High
Sampling Methods	Half core or full core samples were collected from HQ size core. Sample interval of nominal one metre (1 m) length. Lithological contacts were honored by the sampling.	High
Quality of Assay Data and Laboratory Tests	An external commercial laboratory has been used for all analytical test work. Appropriate sample preparation and assaying procedures have been used. Duplicate samples and industry certified standards were inserted within the sample sequence. There are no major issues that would prevent calculating the resource estimates. The precision of the data is good.	High
Verification of Sampling and Assaying	Historical QA/QC performed by SRG was found acceptable and of good quality.	High

Items	Discussion	Confidence
Location of Data Points	Drill hole collars have been surveyed by a qualified surveyor and press onto detailed topographic surface defined by airborne survey.	High
Tonnage Factors (*In-Situ* Bulk Densities)	Density determinations were made for drill hole samples using the weight in air and water method.	High
Data Density and Distribution	Diamond drill holes were collared on grids of approximately 20 m × 50 m, 20 m × 100 m, and 20 m × 200 m in selected areas. The level of data density is sufficient to infer geological and grade continuity for an Inferred, Indicated, and Measured Mineral Resource Estimates.	High
Database Integrity	Data is stored in Access databases. Data is verified using GEMS validation procedures.	High
Statistics and Variography	Anisotropic spherical variograms were used to model the spatial continuity.	High
Top or Bottom COG	No grade caps or cut were applied.	High
Data Clustering	Drill holes were drilled on an approximately regular grid.	High
Block Size	5 mN by 5 mE by 2 mRL 3D block models, rotated 20º clockwise.	High
Grade Estimation	Metal grades were estimated using OK. Grades were interpolated within a search ellipse representing the ranges of the anisotropic variograms.	High
Resource Classification	Reported on drill spacing, based on a geostatistical drill spacing study	High
Mining Cuts	No mining cuts have been applied.	N/A
Metallurgical Factors	No metallurgical parameters were used for mineral resources estimation.	N/A

Source: DRA, 2023

14.2.1 Resource Modelling

Mineral resources were estimated using block estimation with OK interpolation methodologies on 5 × 5 × 2 m blocks oriented along the long axe of the deposit with a rotation of 20º clockwise.

3D models for the Lola deposit were created using collar positions using the UTM coordinates for all boreholes. All models integrated the concept of geological horizons (soil, limonite, alterite, saprolite, hard saprolite and bedrock) to create a 3D block model. A surface geological constraining envelope was generated using borehole data, as well as information from geological mapping.

14.2.2 Horizons

A 'horizon code' system has been introduced to interpret geological succession of laterite facies, with all lithology's categorized into six (5) major groups:

- 100 – Limonite and Alterite;
- 150 – Saprolite;
- 200 – Hard Saprolite;
- 600, 605, 670 and 690 – Graphite rich Gneiss;
- 700 – Silicified Bedrock;
- 800 – Country Rock.

Horizons 100 to 600 represent consecutive sub-horizontal layers.

14.2.3 Compositing

Interpolations were done using drilling data composited on a 1.0 m interval.

14.2.4 Block Coding

An orthogonal block model was established with the block model limits selected in order to cover the overall extent of the mineralization (Table 14.2). The block model consists of separate variables for estimated grades, volume percent domain inclusion, rock codes, bulk density, and classification attributes. It is noted that the orientation of the block model does correspond to the principal orientation of the deposit.

Table 14.2 – Block Model Setup

Direction	Origin	Number of Blocks	Block Size (m)
Minimum X	546000	550	5
Minimum Y	857900	1740	5
Maximum Z	600	200	2
Rotation	Rotation 20º		

Source: DRA, 2023

The rock-type block model was constructed by filling blocks of 5 m × 5 m × 2 m between the surface topography and horizon surfaces on a priority basis within the graphite rich gneiss solid, leading to the unique assignment of each model block with primary horizon codes. The 50% 'in-out' coding rule was applied such that a minimum volume of 50% was required to assign a horizon code to the block model prototype.

For the interpolation processing, Eight (8) main rock codes were used for the 3D model, (10, 11, 50, 60, 200, 210, 600, and 610).

Table 14.3 – Block Model Rock Codes Versus Geological Rock Codes

BM Rock Code	Facies	Geological Rock Codes
0	Air	0
10	Waste	10 (Sector 1)
11	Waste	11 (Sector 2)
50	Soil	50 (Sector 1)
60	Soil	60 (Sector 2)
200	Saprolite	100,150, and 200 (Sector 1)
210	Saprolite	210 (Sector 2)
600	Fresh rock	600, 670, 690 (Sector 1)
610	Fresh rock	610 (Sector 2)
800	Gneiss outside the deposit	Extrapolated

Source: DRA, 2023

Each block within a defined geological zone was subsequently categorized by assigning the grade of the nearest 1.00 m composite to the block using oriented search ellipsoids. Orientations of search ellipsoids are strongly dipping at -82º toward the west and oriented north-south for the Sector 1, and strongly dipping -80º toward the north-west and rotated 60º clockwise for the Sector 2 (Figure 4.1). Blocks with a resulting grade of 1.0 % Cg or higher were categorized as potentially mineralized material and assigned a Rock Code of 50, 200 and 600 for sector 1 and 60, 210 and 610 for sector 2. Blocks with a nearest composite grade of less than 1.0% Cg were categorized as waste and assigned a Rock Code of 10 or 11.

The resulting block categorization was then used to back-tag the assay, bulk density, and composite tables with unique rock codes. The back-tags were derived directly from the categorized block model (Table 14.3).

The current methodology used for estimating mineral resources differs slightly from the 2018 mineral estimation. The current methodology consists of creating Mineralized Material with Economic Potential (MMEP)-Waste horizons using the nearest 1.00 m composite to the block using an oriented search ellipsoid, and proved to be more effective at defining waste material for exclusion from the estimation.

14.2.5 VARIOGRAPHY

Continuity directions were assessed for the soil, weathered, and bedrock horizons respecting geological surfaces created from drill holes.

Variogram analysis and modeling were performed using Snowden's Supervisor software. Variography was generated for the Cg for Sectors 1 and 2.

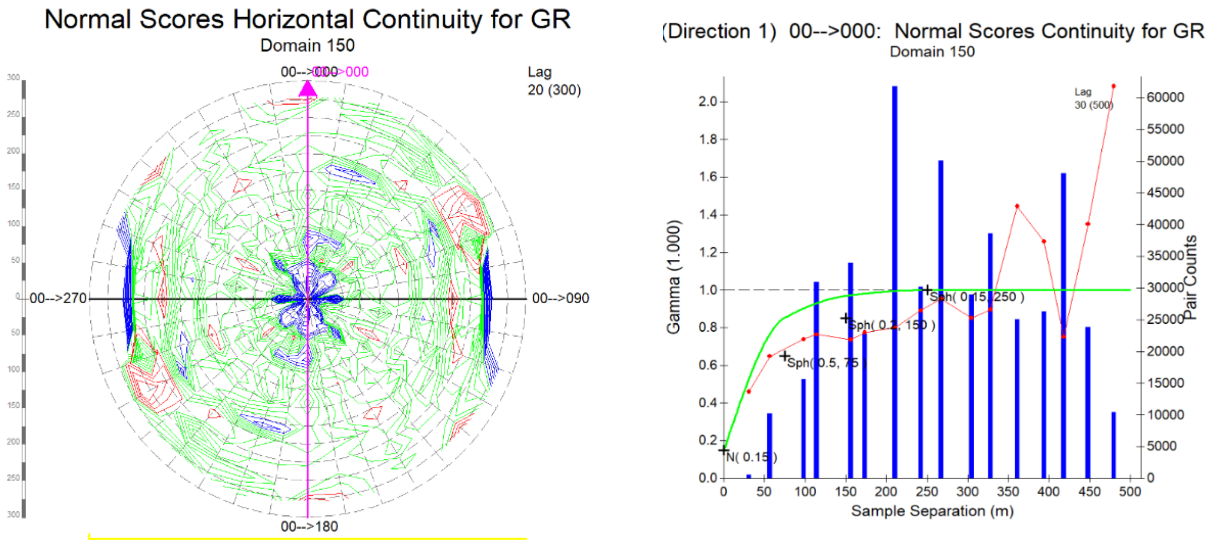
The Cg group variogram model was fitted and applied to the Mineral Resource estimation. The variograms model for Sectors 1 and 2 is presented in Table 14.44 and Figure 14.4.

Table 14.4 – Cg Variogram Parameters Used for Interpolation

Sector 1							
Direction	Nugget	C1	Range 1 (m)	C2	Range 2 (m)	C3	Range 3 (m)
00	0.15	0.5	50	0.2	100	0.15	250
270	0.15	0.5	25	0.2	30	0.15	50
90 > 000	0.15	0.5	5	0.2	7	0.15	10
Sector 2							
Direction	Nugget	C1	Range 1 (m)	C2	Range 2 (m)	C3	Range 3 (m)
60	0.15	0.5	75	0.2	150	0.15	250
350	0.15	0.5	25	0.2	20	0.15	30
90 > 000	0.15	0.5	5	0.2	7	0.15	10

Source: DRA, 2023

Figure 14.4 – Normal Scores Horizontal Continuity Variogram for Cg in the Saprolite Sector 1



Source: DRA, 2023

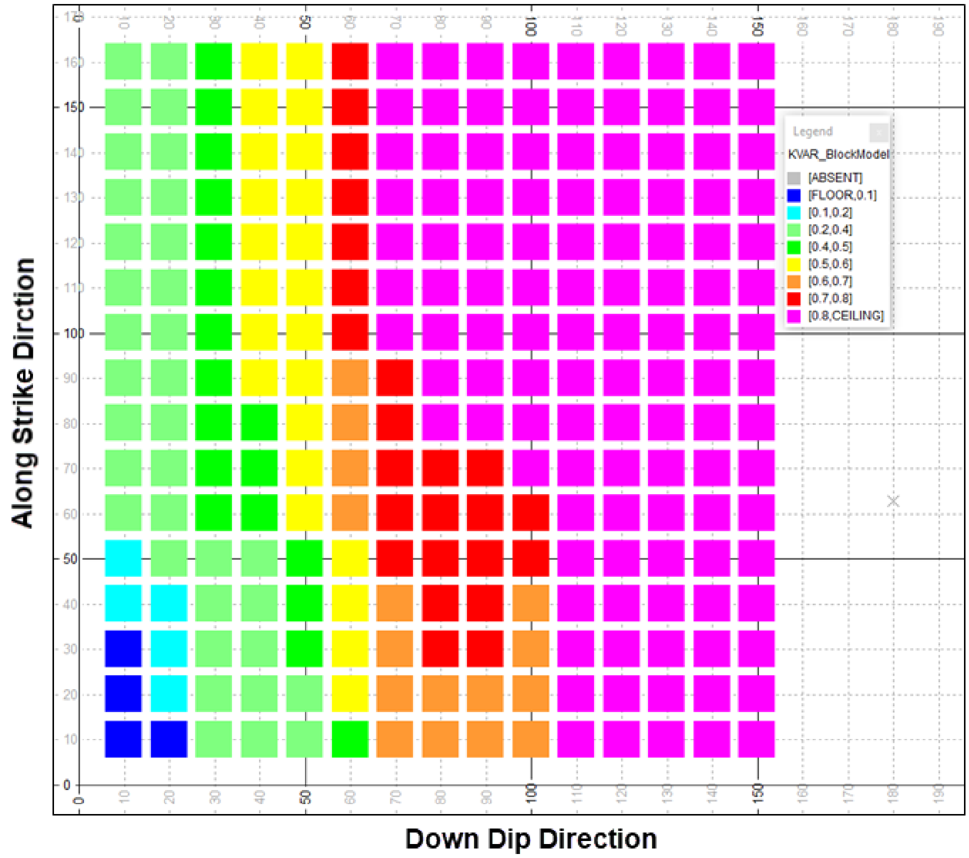
14.3 Mineral Resource Classification

Mineral Resources Classification is based on drill spacing as follows:

- Class: Drill spacing;
- Measured: 20 × 50 m and less;
- Indicated: 50 × 100 m and less;
- Inferred: 50 × 200 m.

CCIC carried out a drill hole spacing study to determine the optimum spacing for consideration during the classification of Measured, Indicated and Inferred Mineral Resources. The drill hole spacing was analysed at 10 m increments in both the down dip and along strike directions. Outputs analysed were the Kriging Variance, Kriging Efficiency, and Slope of Regression. Figure 14.5 shows the Kriging Variance plot from the study, with the X axis representing the down dip direction and the Y axis representing the along strike direction of mineralization. This plot shows that for an estimation error of less than 0.6, the maximum drill hole spacing should be approximately 50 m in the dip direction and 100 m in the strike direction. Overall, the results from this study show that the optimum drill spacing used for consideration of Measured, Indicated and Inferred, is acceptable.

Figure 14.5 – Plot showing the Kriging Variance, Down Dip and Along Strike, from the Drill Hole Spacing Study



Source: DRA, 2019

The following rock code system refer to 3D block models for classified materials (Table 14.5).

Table 14.5 – Rock Code System for the Resources Classification

Facies	Horizon	Inferred	Indicated	Measured
Soil	50 -60	3	2	1
Saprolite	200-210	3	2	1
Bed Rock	600-610	3	2	1

Source: DRA, 2023

14.4 Comparison with Previous Historical Estimate

DRA was previously mandated by SRG to complete a Feasibility Study for the Lola Graphite Deposit in 2019. Both studies report open-pit constrained estimates with no contribution from underground methods. No new drilling or sampling was completed between the two (2) studies. A comparison of the 2019 historical estimate and the 2023 MRE (effective date February 27, 2023) is summarized in Table 14.6.

Table 14.6 – Comparison Between The 2019 Historical Estimate and 2023 MRE

Category	2019 MRE			2023 MRE		
	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Oxide	6.84	4.39	300.3	7.78	4.04	314.6
Fresh Rock	-	-	-	0.47	4.01	19.0
Total Measured	*6.84*	*4.39*	*300.3*	*8.26*	*4.04*	*333.6*
Oxide	23.24	4.04	937.9	25.40	3.83	972.6
Fresh Rock	15.96	4.03	643.4	20.29	4.14	839.3
Total Indicated	*39.20*	*4.04*	*1,581.3*	*45.70*	*3.9*	*1,812.0*
Total Measured and Indicated	**46.03**	**4.09**	**1,881.6**	**53.96**	**3.98**	**2,145.6**
Oxide	1.20	3.81	45.6	10.97	3.52	386.4
Fresh Rock	3.05	3.73	113.8	1.33	4.23	56.1
Total Inferred	**4.25**	**3.75**	**159.36**	**12.30**	**3.60**	**442.5**

Source: DRA, 2023

Major differences include:

- In the 2023 MRE, a new approach categorized blocks within each defined geological domain as either mineralized material (with economic potential) or waste based on the nearest 1.0 m composite using oriented search ellipsoids. Blocks that did not meet a 1.0% Cg cut-off were categorized as waste and excluded from the estimation.
- The block model from which the 2019 MRE was generated did not employ any rotation aspect; conversely, the model used for the 2023 MRE was rotated 20 degrees clockwise to better align with the principal orientation of the deposit (i.e., continuity).
- Block sizes were reduced from 10 m x 10 m x 2 m in the 2019 MRE to 5 m x 5 m x 2 m in the current Report. This results in less smoothing, thereby increasing selectivity/variability.
- The 2019 MRE was reported at a cut-off grade (COG) of 1.65% Cg for all material types; conversely, the 2023 update uses variable COGs for geological domains classified as either oxidic (1.0% Cg) or fresh rock (1.4% Cg).
- The input parameters for the open-pit optimization were modified for the 2023 Report; a comparison of these inputs is summarized in Table 14.6.

- In 2019, the resource-constraining pit shell was optimized using the Lerchs-Grossman (LG) algorithm in MineSight, whereas a Pseudoflow algorithm was applied using HxGn MinePlan software in 2023.

Table 14.7 – Conceptual Pit Input Parameters and Assumptions for 2013 and 2022

Description	Unit	2019	2023
Mining Cost (Saprolite)	$/t (mined)	1.80	2.75
Mining Cost (F. Rock)	$/t (mined)	2.70	3.25
Processing Cost (Saprolite)	$/t (milled)	8.00	10.25
Processing Cost (F. Rock))	$/t (milled)	11.00	15.18
G&A	$/t (milled)	3.50	1.52
Transport Cost	$/t (conc.)	100.00	50.00
Sales Price	$/t (conc.)	1,400	1,389
Mill Recovery	%	75	84.2
Concentrate Grade	%	96	95.4
COG Oxide	%	1.65	1.00
COG Fresh Rock	%	1.65	1.40
Pit Slope (Saprolite)	Degree	30	34
Pit Slope (F. Rock)	Degree	42	42

Source: DRA, 2023

14.5 Mineral Resource Estimation

To comply with the definition from the CIM and demonstrate the “reasonable prospects for economic extraction” of the Lola Graphite deposit, the following methodology has been used for the Mineral Resource Estimation.

Based on the geological block model, a resource pit shell had been generated using MineSight Economic Planner module (MSEP) of MineSight®. MSEP bases its calculations on the LG method, a common and precise algorithm used in the mining industry for pit optimization process.

The automated LG, founded in 3D graph theory, relies on a regular system of blocks that defines the value (profit, loss) and type (ore, waste) of material contained in the blocks. Each block receives a positive or negative value representing the dollar value (profit/loss) that would be expected by excavating and extracting the mineral. It works from the top down through every combination of blocks that would satisfy wall slope constraints to find the one solution (optimum pit) with the largest positive value.

Table 14.8 presents the parameters summary used for the LG optimization process.

Table 14.8 – Parameters for the Lerchs-Grossman

Description	Unit	Resources
Mining Cost (Oxide)	$/t (mined)	2.75
Mining Cost (F. Rock)	$/t (mined)	3.25
Processing Cost (Oxide)	$/t (milled)	10.25
Processing Cost (F. Rock))	$/t (milled)	15.18
G&A	$/t (milled)	1.52
Transport Cost	$/t (conc.)	50.00
Sales Price	$/t (conc.)	1,389
Mill Recovery	%	84.2
Concentrate Grade	%	95.4
Pit Slope (Oxide)	Degree	34
Pit Slope (F. Rock)	Degree	42

Source: DRA, 2023

The base case classified Mineral Resource Estimate is summarized in **Error! Reference source not found.** at a Cut-Off Grade of 1.00% Cg for Oxide and 1.4% Cg for Fresh Rock.

The resource estimate is established with data from boreholes drilled and sampled by December 1, 2018.

A surface map outlining the Inferred, Indicated and Measured Resources is presented Figure 14.1.

Table 14.9 – Mineral Resources Estimate – Effective Date February 27, 2023

Category	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Oxide	7.78	4.04	314.6
Fresh Rock	0.47	4.01	19.0
Total Measured	*8.26*	*4.04*	*333.6*
Oxide	25.40	3.83	972.6
Fresh Rock	20.29	4.14	839.3
Total Indicated	*45.70*	*3.97*	*1,812.0*
Total Measured and Indicated	**53.96**	**3.98**	**2,145.6**
Oxide	10.97	3.52	386.4

Category	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Fresh Rock	1.33	4.23	56.1
Total Inferred	**12.30**	**3.60**	**442.5**

Notes:

1. Mineral Reserves have 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. Resources are constrained by a Pseudoflow optimised pit shell using HxGn MinePlan software.
4. Pit shell was developed using a 34-degree pit slope in oxide and 42-degree pit slope in fresh rock, concentrate sales price of US$1,389/t concentrate, mining costs of US$2.75/t oxide, US$3.25/t fresh rock, processing costs of US$10.25/t oxide and US$15.18/t fresh rock processed, G&A cost of US$1.52/t processed and transportation costs of US$50/t concentrate, 84.2% process recovery and 95.4% concentrate grade and an assumed 100,000 tpa concentrate production.
5. Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The Mineral Resources estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political environment, marketing, or other relevant issues. There is no certainty that Mineral Resources will be converted to Mineral Reserves.
6. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and cannot 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.
7. Contained graphite without mining loss, dilution, and processing recovery (In-situ).
8. The effective date of the estimate is February 27, 2023.
9. The open pit Mineral Resources are estimated using a cut-off grade of 1.0% Cg oxide and 1.4% Cg fresh rock.
10. Totals may not add due to rounding.

Source: DRA, 2023

14.6 Block Model Validation

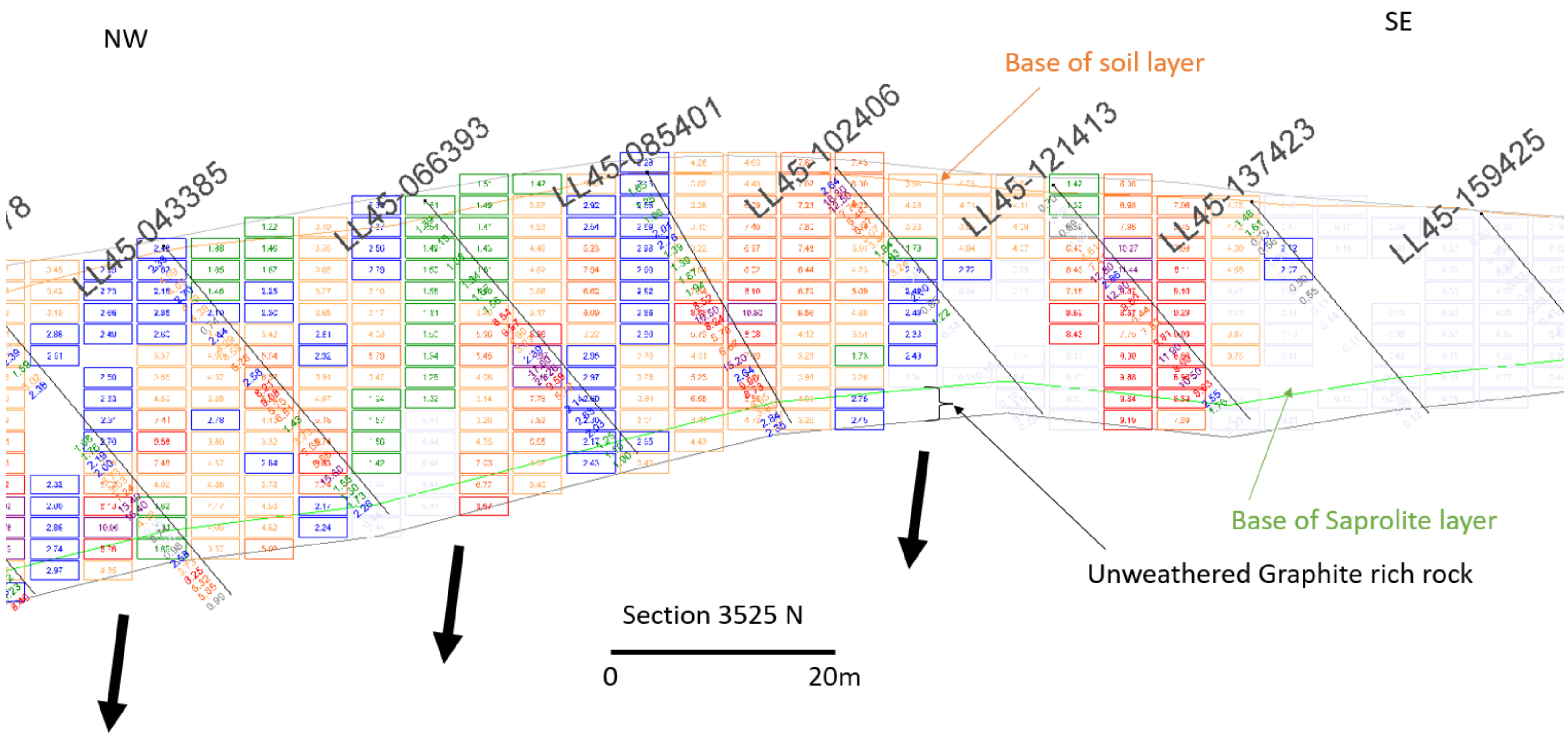
The estimated block model was validated by a combination of methods, including:

- Visual inspection/comparison of the block model against the drillhole data; and,
- Swath plot analysis to check for potential bias and smoothing effects.

14.6.1 Visual Validation

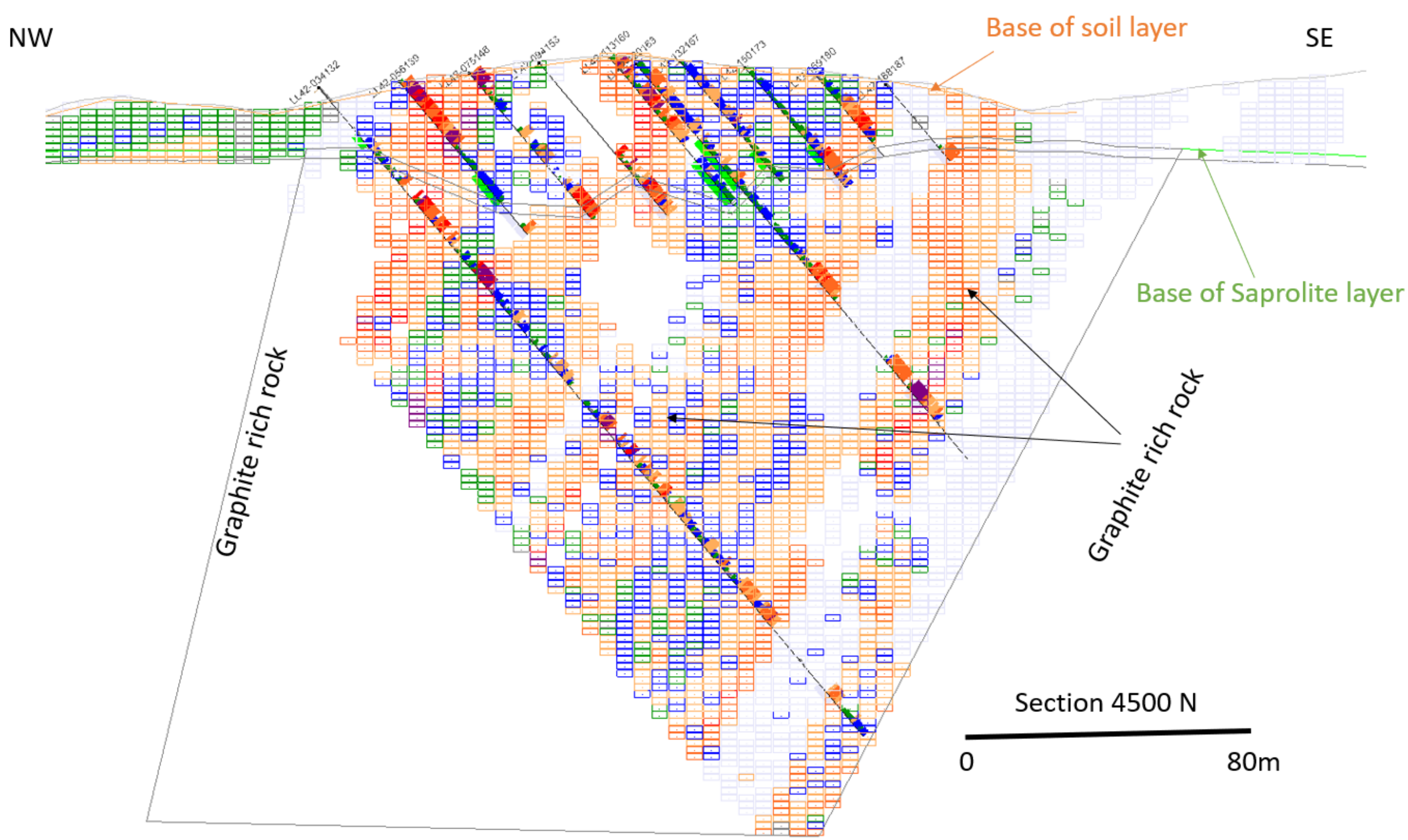
Localized visual inspections were carried out to compare estimated block grades with input sample grades from drillholes. Systematic review in both cross-section and 3D views appears to indicate reasonable correlation with grade tenors and distributions in the sample data generally reflected in the corresponding estimated blocks. Areas that are less informed due to more sparsely spaced drilling (e.g., along strike) may show a higher degree of smoothing. Representative cross-sections of these visual validations are provided in Figure 14.6 to Figure 14.8. As can be seen, the data range versus the block-model reduces significantly where tonnage is shown, which gives good support to the interpolation.

Figure 14.6 – Correlation Between the Block Model Estimated Cg Grades and Drill Hole Data at Section 3525N



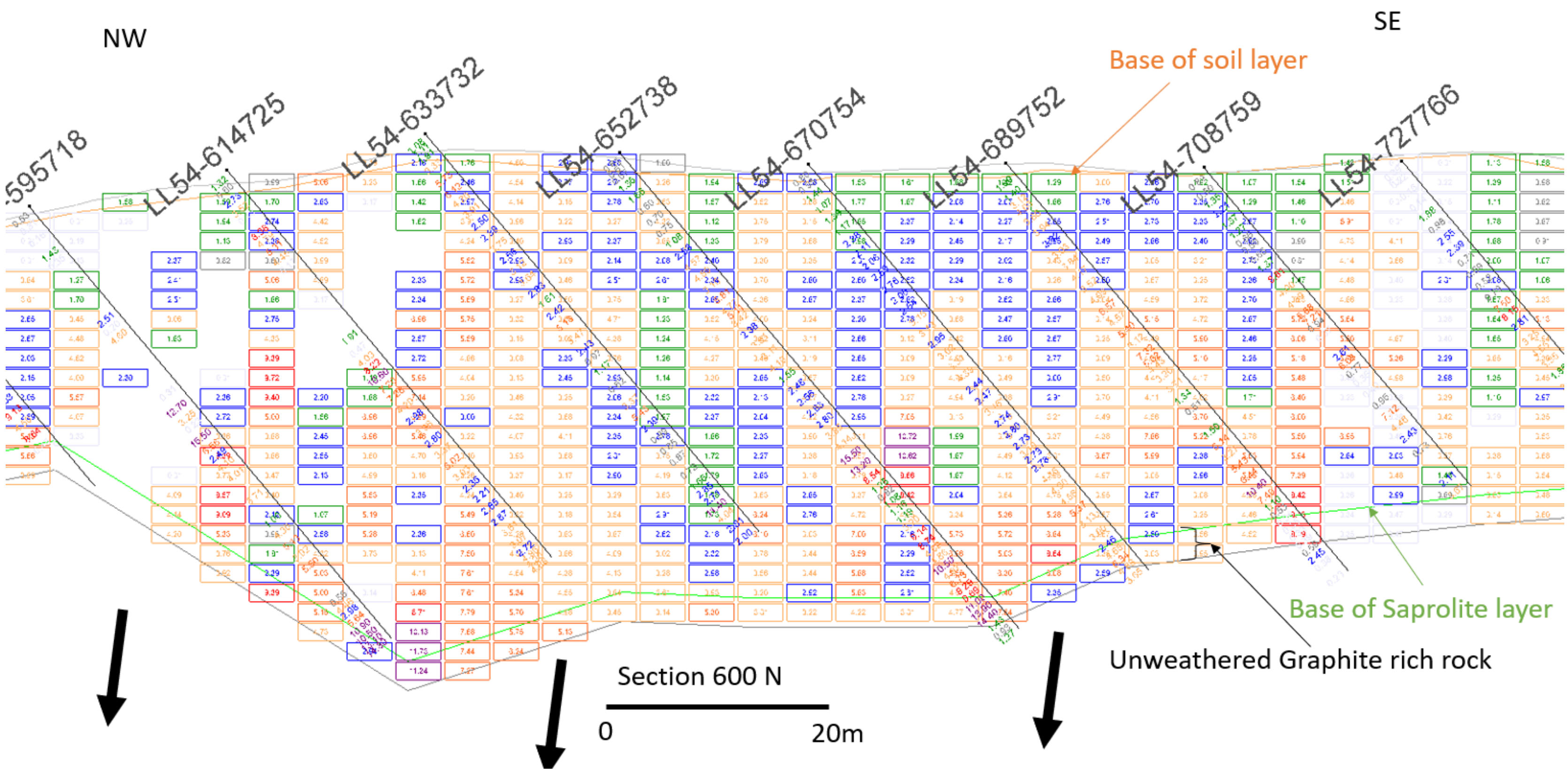
Source: DRA, 2023

Figure 14.7 – Correlation Between the Block Model Estimated Cg Grades and Drill Hole Data at Section 4500N



Source: DRA, 2023

Figure 14.8 – Correlation Between the Block Model Estimated Grades and Drill Hole Data at Section 600

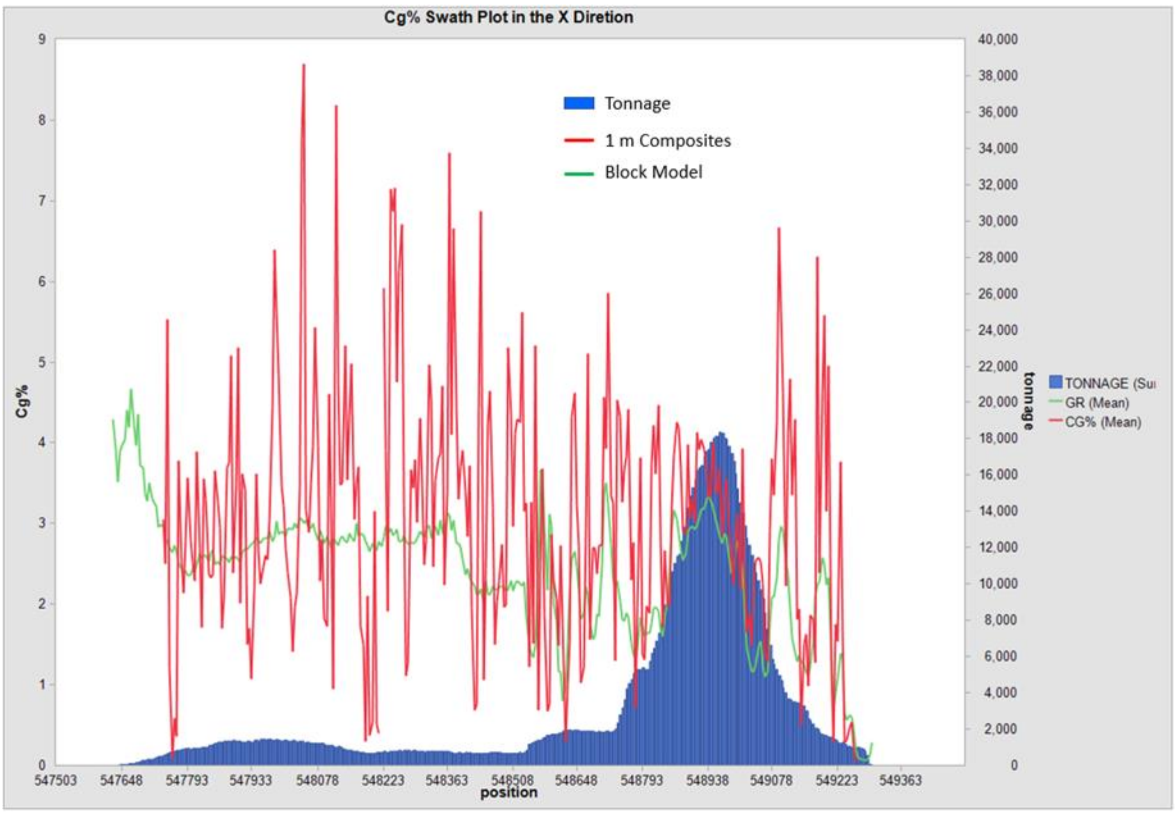


Source: DRA, 2023

14.6.2 SWATH PLOT ANALYSIS

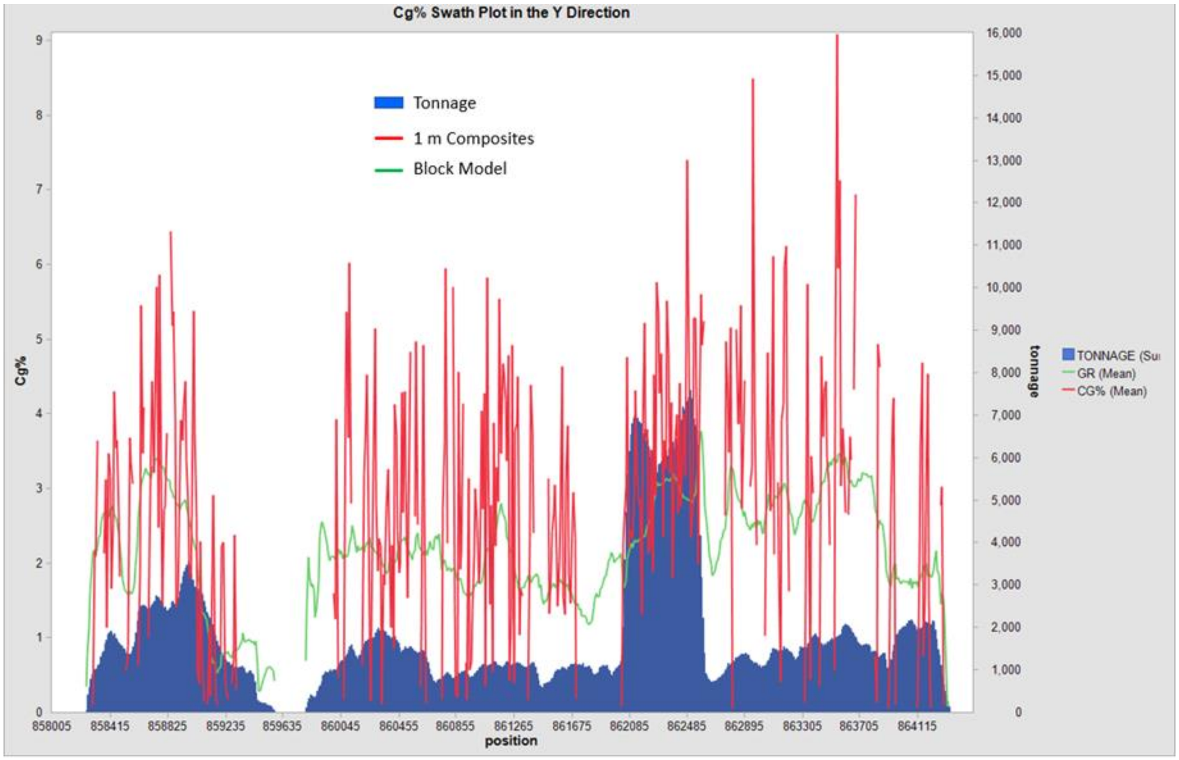
Swath plot analysis was completed in order to compare the grades of estimated blocks with the calculated composites used as inputs, as well as identify any concerns with potential bias or smoothing effects. Plots were generated in the X, Y and Z directions of continuity for the deposit to observe how the model performed spatially; these are provided in Figure 14.9 to Figure 14.11, respectively.

Figure 14.9 – Swath Plots showing Cg Grade Trends Between Samples (Blue) and Model Estimate (Orange), for Soil



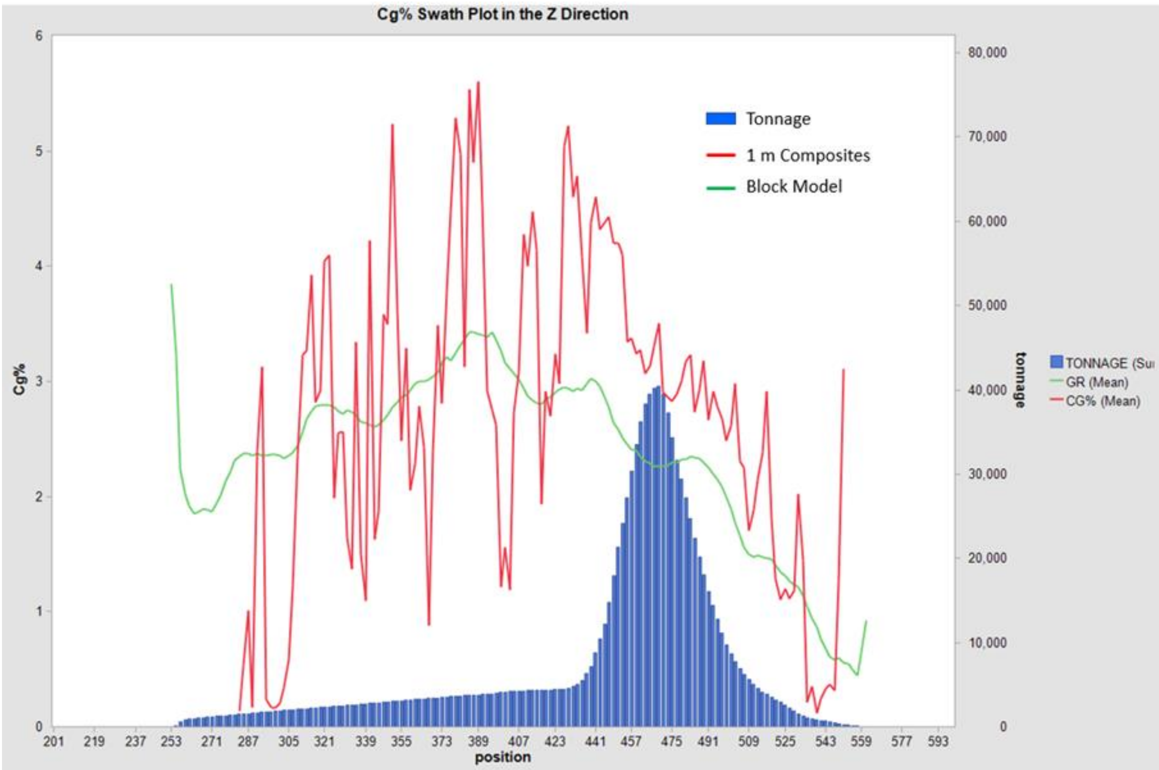
Source: DRA, 2023

Figure 14.10 – Swath Plots showing Cg Grade Trends Between Samples (Blue) and Model Estimate (Orange), for Saprolite



Source: DRA, 2023

Figure 14.11 – Swath Plots showing Cg Grade Trends Between Samples (Blue) and Model Estimate (Orange), for Fresh



Source: DRA, 2023

14.7 Conclusion

The 2023 Mineral Resource Estimate includes a pit-constrained measured and indicated resource in saprolite of 30.0 Mt grading 4.07% Cg and an inferred resource of 8.75 Mt grading 3.79% Cg, using a cut-off grade of 1.65% Cg.

The pit constrained returned a measured and indicated mineral resource in hard rock of 16.52 Mt grading 4.11% together with an inferred minerals resource of 01.15 Mt grading 4.20% Cg using the same cut-off grade.

The resources in hard rock were outlined using boreholes drilled over an area representing only 0.12 km^2 for approximately 5% of the entire deposit surface layout. The resource in hard rock as defined by the optima pit extend from below the saprolite layer down to 177 m from surface. The resources continue along strike of the deposit and at depth.

The effective date of the estimate is February 27, 2023.

15 MINERAL RESERVES 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 summarized 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.

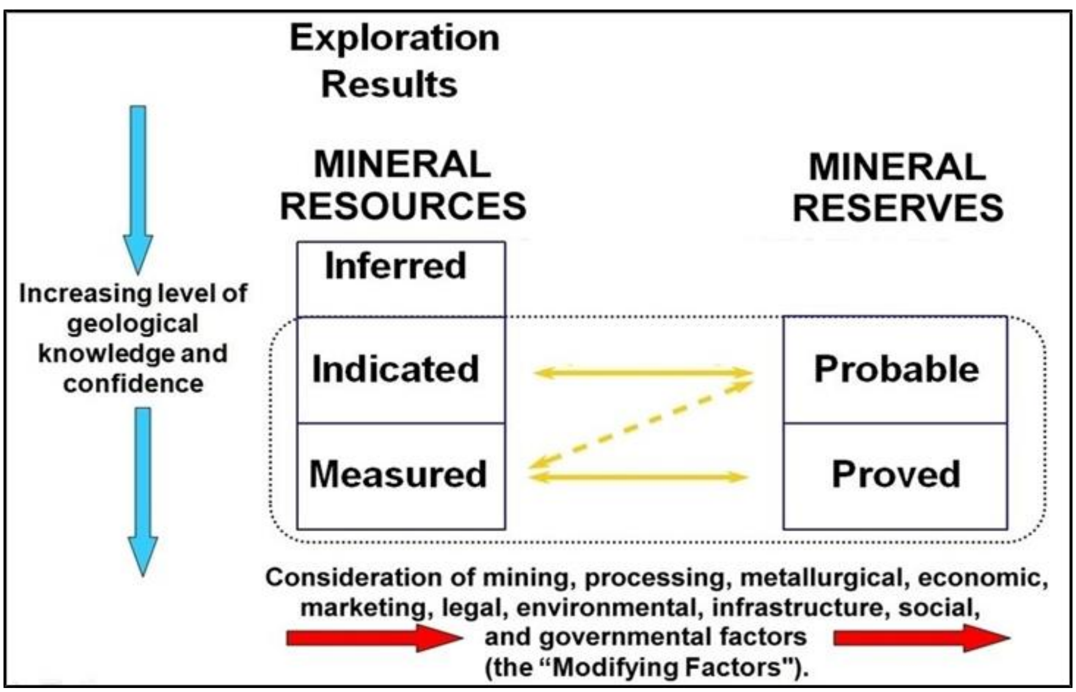
Application of the Proven Mineral Reserve category implies that the Qualified Person has the highest degree of confidence in the estimate with the consequent expectation in the minds of the readers of the report. The term should be restricted to that part of the deposit where production planning is taking 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 Lola deposit were prepared by Ghislain Prévost, P. Eng., Principal Mining Engineer with DRA and Qualified Person. The Mineral Reserves have been developed using best practices in accordance with CIM guidelines and NI 43-101 reporting. The effective date of the Mineral Reserve estimate is February 27, 2023.

15.1 Pit Optimization

The FS was based on Mineral Resources Estimate by Marc-Antoine Audet with an effective date of February 27, 2023. DRA has verified the results of the Mineral Resource Estimate are valid for the updated Mineral Resource Estimate.

DRA performed an economic pit analysis to determine the optimal pit limits of the Lola Graphite project. The analysis was completed using the 3-dimensional resource block model, which was also the basis for the Mineral Resource Estimate in Section 14. DRA used HxGN MinePlan®'s MSOPit module to generate the pit shells for the analysis. The MSOPit module uses the Pseudoflow algorithm to evaluate the economic viability of each block in the model based on the parameters listed in Table 15.1; the formula used to concert ore to concentrate is presented in Equation 15.1.

The parameters were developed assuming a standard open pit truck and shovel operation and a production rate of 100 kt of concentrate per year. The parameters were developed based on similar projects in the area and were updated in more detail later in the study. DRA determined that the updated costs did not warrant a re-optimization of the pits. Only Measured and Indicated Resources have been considered in the optimization and mine plan; all Inferred Resources were considered waste. The mining sectors are presented in Figure 15.2.

Table 15.1 – Pit Optimization Parameters

Description	Units	Value		
		North Pits	Central Pits	South Pit
Mining Cost – Oxide (Ore & Waste)	US$/t (mined)	2.75	3.25	3.75
Mining Cost – F. Rock (Ore & Waste)	US$/t (mined)	3.25	3.75	4.25
Processing Cost	US$/t (milled)	12.71		
G&A	US$/t (milled)	1.52		
Transport	US$/t (conc.)	50.00		
Sales Price	US$/t (conc.)	1,289		
Mill Recovery – 55% Oxide / 45% F. Rock	%	84.2		
Concentrate Grade	%	95.4		
Overall Pit Slope – Oxide area	%	34		
Overall Pit Slope – F. Rock area	%	42		

The optimizer operates on a net value calculation for all the blocks in the model (i.e., revenue from sales of graphite concentrate less operating cost). The formula is presented below:

Equation 15.1 – Concentrate Tonnage

$$Concentrate\ Tonnage = \frac{Mineralized\ Tonnage \times Recovery \times Grade\ of\ Feed}{Concentrate\ Grade}$$

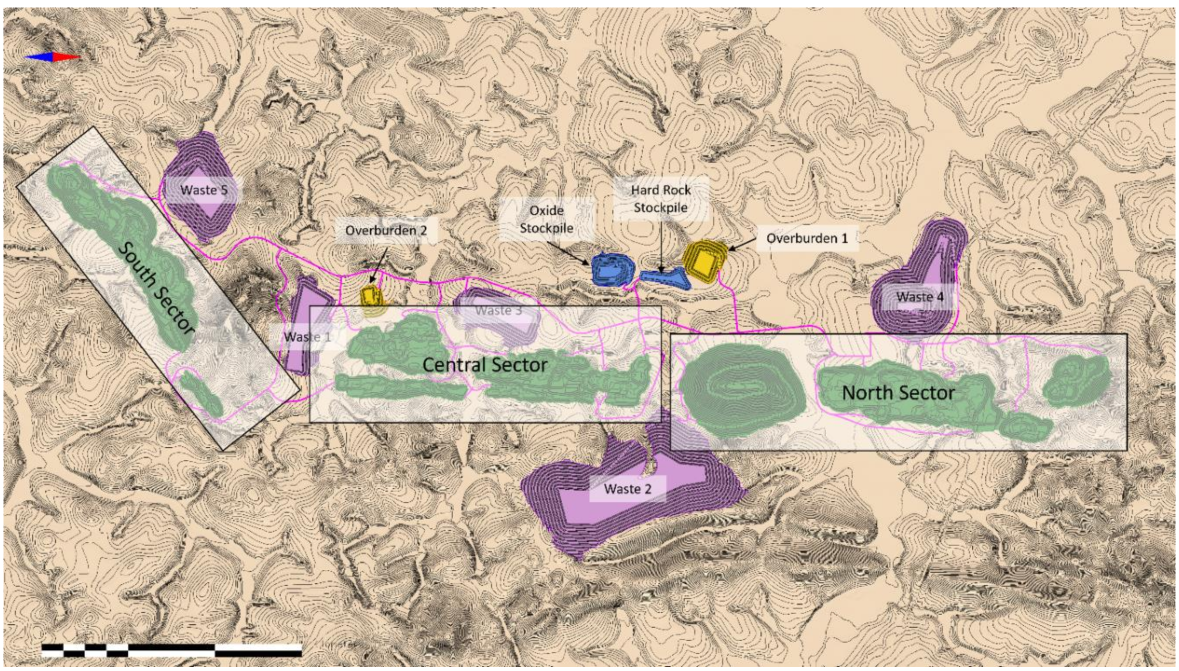
Equation 15.2 – Revenue

$$Revenue = \text{Concentrate Tonnage} \times \text{Sales Price}$$

Equation 15.3 – Net Value

$$Net\ Value = \text{Revenue} - (Mining\ Cost + Processig\ Cost + Trasportation\ Cost + G\&A\ Cost)$$

Figure 15.2 – Mining Sectors



Source: DRA 2023

15.1.1 CUT-OFF GRADE

The cut off grades (COG) were calculated for each section according to the following equation:

$$COG = Concentrate\ grade * (\frac{Mining\ cost + Procesing\ cost + G\&A}{(Sales\ Price - Transport\ Cost) * Mill\ Recovery})$$

Using the economic parameters presented in Table 15.1, cut-off grades (COG) were calculated for section, and for each type of material (oxide or fresh rock). Table 15.2 presents the COG result in each case. A higher cut-off grade than those that were calculated was used to feed the mill with higher-grade material.

Table 15.2 – COG Results

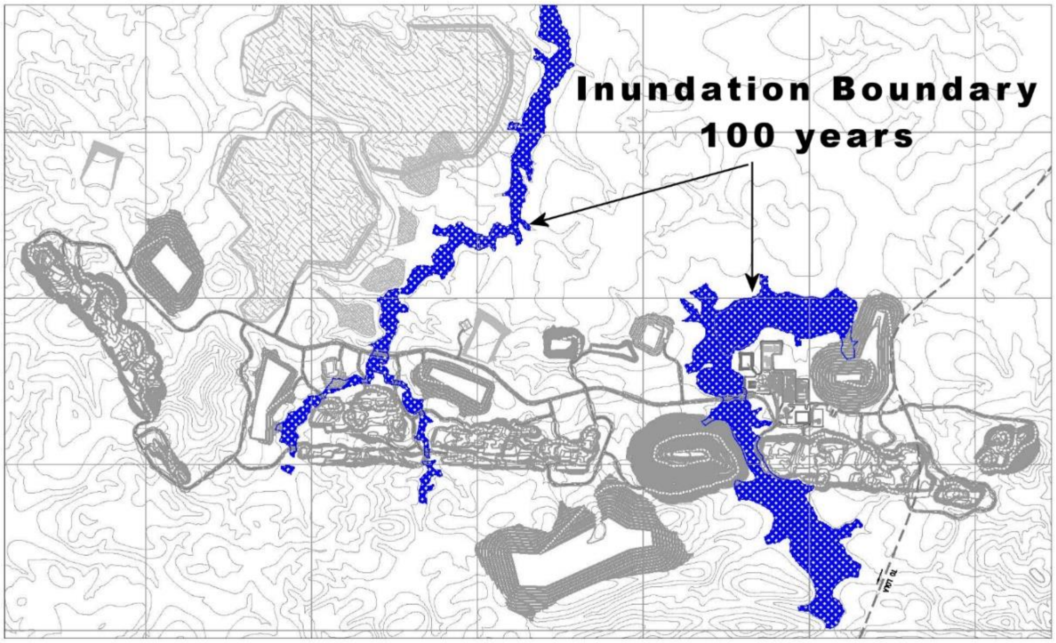
Description	Cut Off Type	Units	Sector		
			North	Central	South
Oxide	Marginal	% Cg	1.30		
	Calculated	% Cg	1.55	1.60	1.64
	Used	% Cg	1.90		
Fresh Rock	Marginal	% Cg	1.30		
	Calculated	% Cg	1.60	1.64	1.69
	Used	% Cg	1.90		

Source: DRA, 2023

15.1.2 PIT RESTRICTIONS

The ore material is contained within three (3) areas (North, Central, and South) where North and Central areas have been separated by two (2) areas each to avoid flood zones. The 1-100-year flood lines are presented in Figure 15.3. Hard constraint has been specified from the 1-100-years flood lines surface that cannot be mined for reserve pit shell generation. The resource estimate is not constraint by the 1-100 years flood lines surface. The amount of Measured and Indicated resources that fall within the constraint area is estimated to 5.0 Mt at 4.2% Cg, containing 210.1 kt of graphene. A proportion of the resources under the flood-line area could potentially be converted into reserves if hydrogeological and geotechnical studies proved feasible and government authorizations were obtained.

Figure 15.3 – Lola 1:100-year Flood Lines



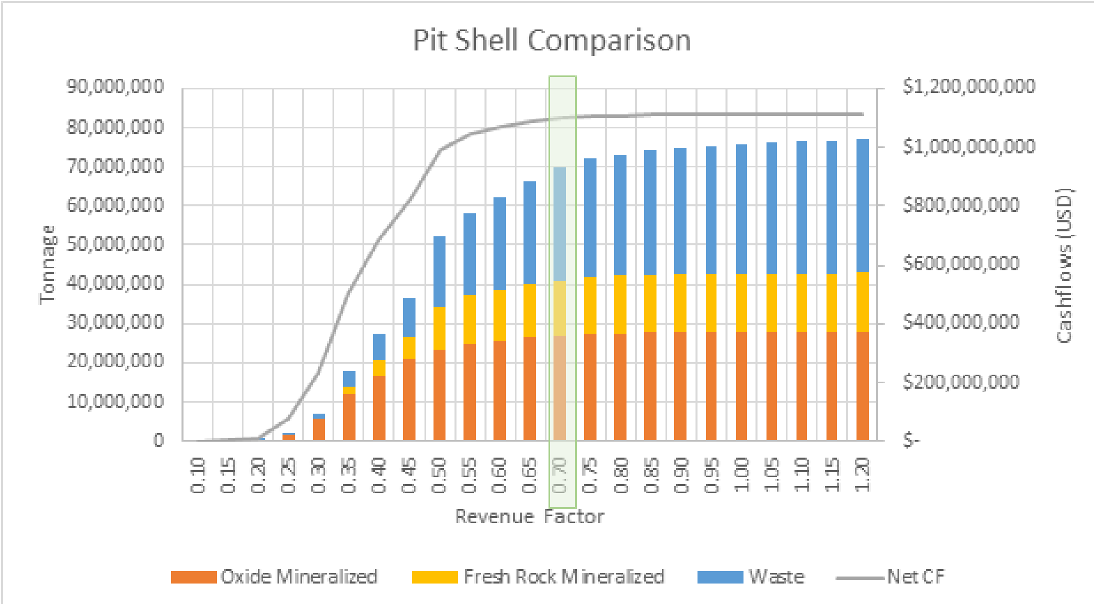
Source: DRA, 2023

15.1.3 DILUTION AND MINE RECOVERY

Due to the geometry of the deposit, a 2% mining loss and an 8% dilution factor were applied to the ore-waste contacts. The applied dilution resulted in an overall grade reduction of 0.12%.

15.1.4 PIT OPTIMIZATION RESULTS

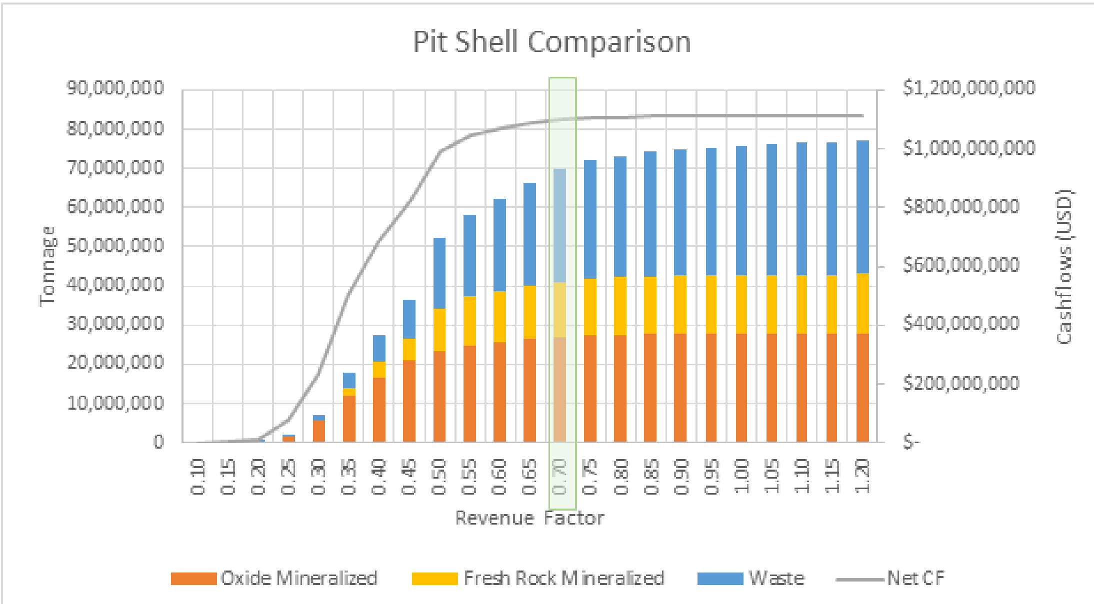
Pit shells were generated using HxGN MinePlan's MSOPit module. The pits were generated for revenue factors from 0.1 to 1.2 at 0.05 increments, therefore varying the concentrate selling price from USD 128.90 to USD 1,546.80. All three (3) mining sectors (South, Central, and North) were optimized at the same time. The undiscounted cashflows increase gradually until reaching a maximum at revenue factor 1 (concentrate price of USD 1,289). Past this inflexion point, the NPV decreases as the costs exceeds the revenues. The results of the pit shell generation are presented in Table 15.3 and Figure 15.4 – Pit Shell Comparison



Source: DRA 2023

The pit shell corresponding to revenue factor 0.70 (concentrate selling price of USD 902.30) was selected as the ultimate pit limit to be used as a guide for the pit design and mine planning. This pit shell contains 44.2 Mt of mineralized material at an average grade 4.24% and 28.6 Mt of waste, for a strip ratio of 0.65. This pit shell provides cashflows of approximately MUSD 1,100.0 and approximately 15.4 years of production. The selected pit shell is highlighted in green in Figure 15.4 and Table 15.3.

Figure 15.4 – Pit Shell Comparison



Source: DRA 2023

Table 15.3 – Pit Optimisation Results

Revenue Factor	Concentrate Selling Price	Oxide Ore	Fresh Rock Ore	Cg Grade	Conc.	Waste	Net CF	Approximate Mine Life
	USD	kt	kt	%	kt	Kt	MUSD	Years
0.10	128.90	0.7	0.0	13.24	0.1	0.3	0.1	0.0
0.15	193.35	18.9	0.0	9.98	1.7	6.5	1.7	0.0
0.20	257.80	179.4	0.0	7.50	11.9	41.5	11.5	0.1
0.25	322.25	1,559.4	11.9	6.05	84.0	267.8	75.7	0.8
0.30	386.70	5,552.5	139.4	5.42	272.4	1,364.7	233.6	2.7
0.35	451.15	12,063.5	1,902.5	4.97	613.4	4,146.5	502.4	6.1
0.40	515.60	16,791.8	3,847.3	4.74	864.3	6,973.0	687.5	8.6
0.45	580.05	20,873.3	5,462.3	4.57	1,062.4	9,930.2	823.7	10.6
0.50	644.50	23,428.6	10,943.7	4.39	1,333.4	17,707.8	993.7	13.3
0.55	708.95	24,883.6	12,303.1	4.33	1,423.6	21,065.6	1,045.3	14.2
0.60	773.40	25,784.0	12,994.5	4.30	1,472.7	23,465.1	1,070.6	14.7
0.65	837.85	26,403.5	13,711.7	4.27	1,512.7	26,150.2	1,088.1	15.1
0.70	902.30	26,958.5	14,227.6	4.24	1,544.0	28,643.2	1,100.0	15.4
0.75	966.75	27,302.9	14,534.2	4.23	1,561.7	30,096.4	1,105.8	15.6

Revenue Factor	Concentrate Selling Price	Oxide Ore	Fresh Rock Ore	Cg Grade	Conc.	Waste	Net CF	Approximate Mine Life
	USD	kt	kt	%	kt	Kt	MUSD	Years
0.80	1,031.20	27,497.7	14,703.8	4.22	1,571.2	30,935.8	1,108.4	15.7
0.85	1,095.65	27,642.8	14,852.2	4.21	1,578.7	31,744.7	1,110.1	15.8
0.90	1,160.10	27,724.4	14,925.4	4.20	1,582.6	32,208.8	1,110.7	15.8
0.95	1,224.55	27,780.9	14,976.0	4.20	1,585.3	32,603.2	1,110.9	15.9
1.00	1,289.00	27,817.5	15,009.9	4.20	1,587.2	32,936.1	1,110.9	15.9
1.05	1,353.45	27,853.9	15,038.6	4.19	1,588.8	33,227.7	1,110.8	15.9
1.10	1,417.90	27,888.9	15,056.9	4.19	1,590.2	33,508.8	1,110.7	15.9
1.15	1,482.35	27,921.3	15,074.6	4.19	1,591.5	33,795.0	1,110.4	15.9
1.20	1,546.80	27,945.5	15,084.1	4.19	1,592.3	33,998.7	1,110.2	15.9

Notes:
Number have been rounded to an appropriate level of precision

Source: DRA, 2023

15.2 Open Pit Design

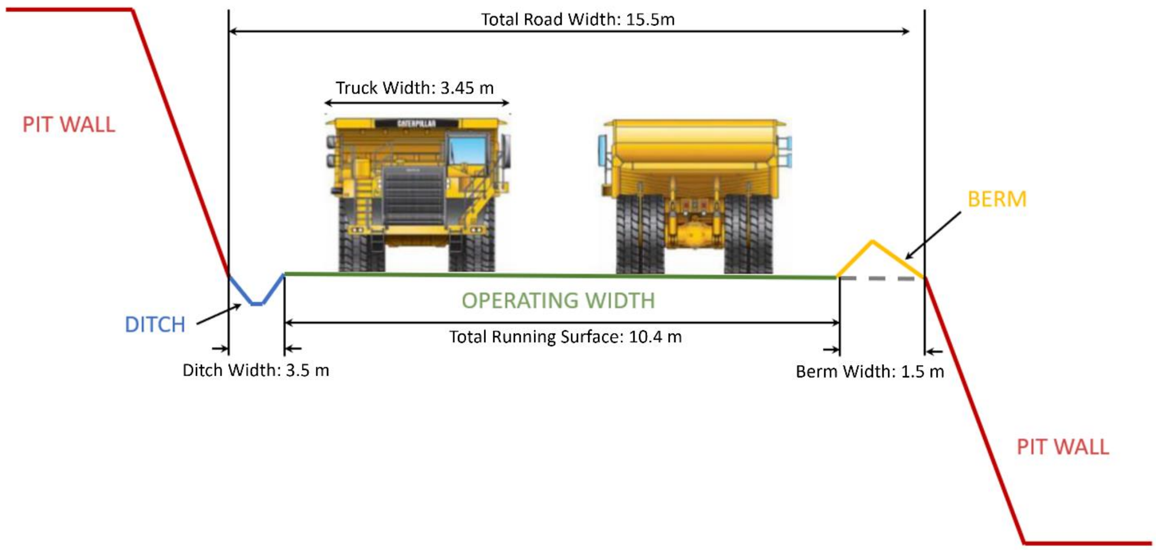
Once a pit shell is selected, the next step in the Mineral Reserve estimation process is to design an operational pit that will form the basis of the production plan. The pit design uses the selected pit shell as a guideline, and includes smoothing the pit walls, adding ramps to access the pit bottom, and ensuring that the pit can be mines using the initially selected equipment. The pits were designed in HxGN MinePlan, based on the 3D resource block model and the pit shell selected in Section 15.1.4. This section provides the parameters that were used for the open pit design and presents the results.

15.2.1 Haul Road Design

The ramps and haul roads were designed with an overall width of 15.5 m for double-lane traffic and a width of 11m for single -lane traffic for the bottom two benches of the pits. Industry practice dictates that the running surface for double-lane traffic should be a minimum of 3 times the width of the largest truck. The overall width of a 40t articulated haul truck is 3.45 m, which results is a minimum running surface of 10.35 m. The addition of berms and ditches increases the ramp width to 15.5m. For single-lane traffic, industry practice dictates a minimum running surface of 1.5 times the width of the largest truck, which is 5.2 m for the 40t articulate truck. Ramps are designed with a maximum grade of 10%.

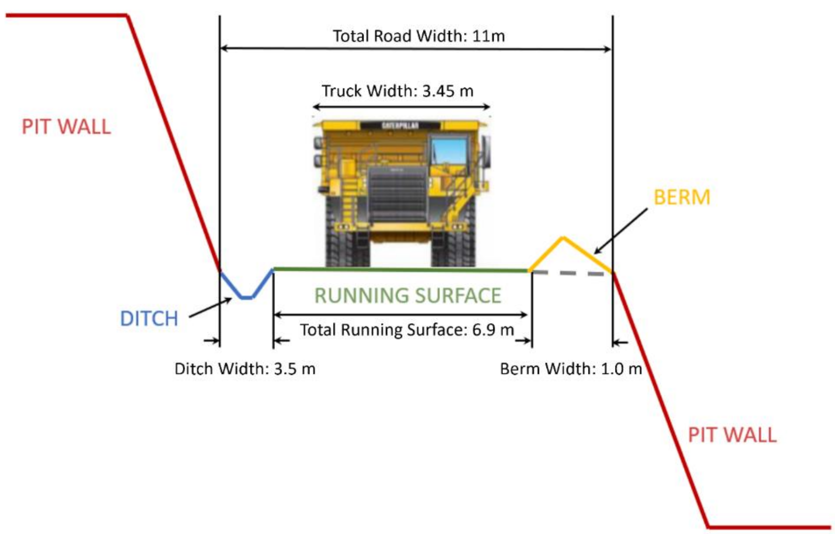
The dimensions used for the ramp design for both double- and single-lane traffic are presented in Figure 15.5 and Figure 15.6.

Figure 15.5 – Double Lane Ramp Design



Source: DRA 2023

Figure 15.6 – Single Lane Ramp Design



Source: DRA 2023

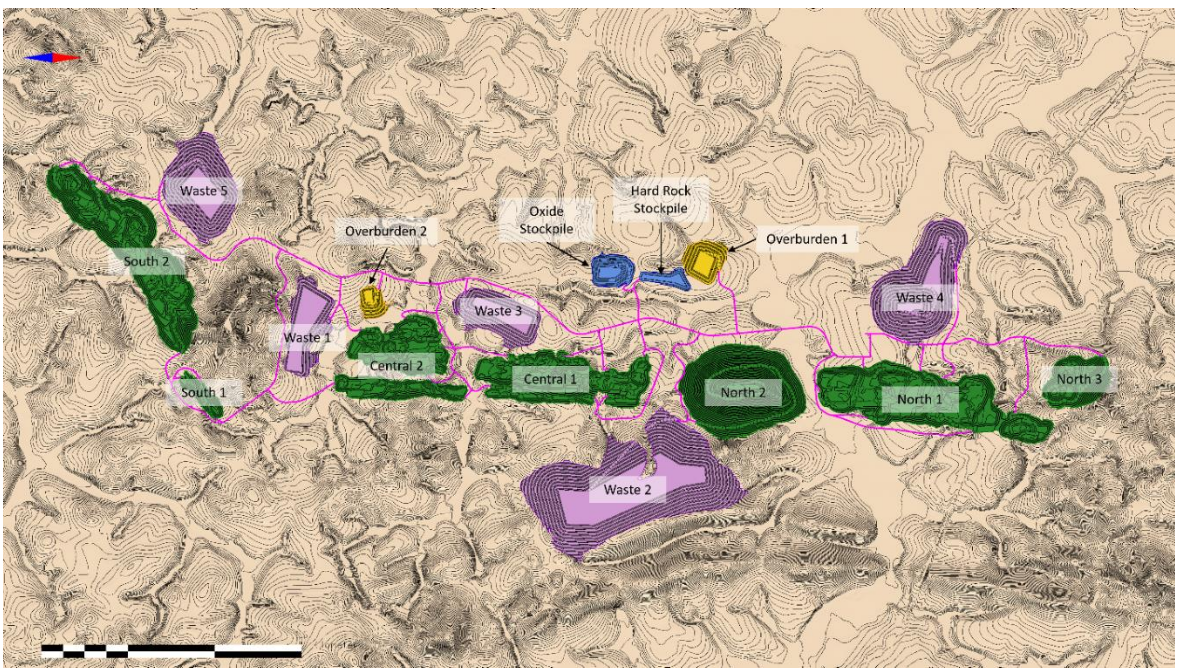
15.2.2 Pit Slopes

The pit designs followed the recommended geotechnical pit slopes, which are described in detail in Section 16.3.3 of the Report.

15.2.3 Open Pit Design Results

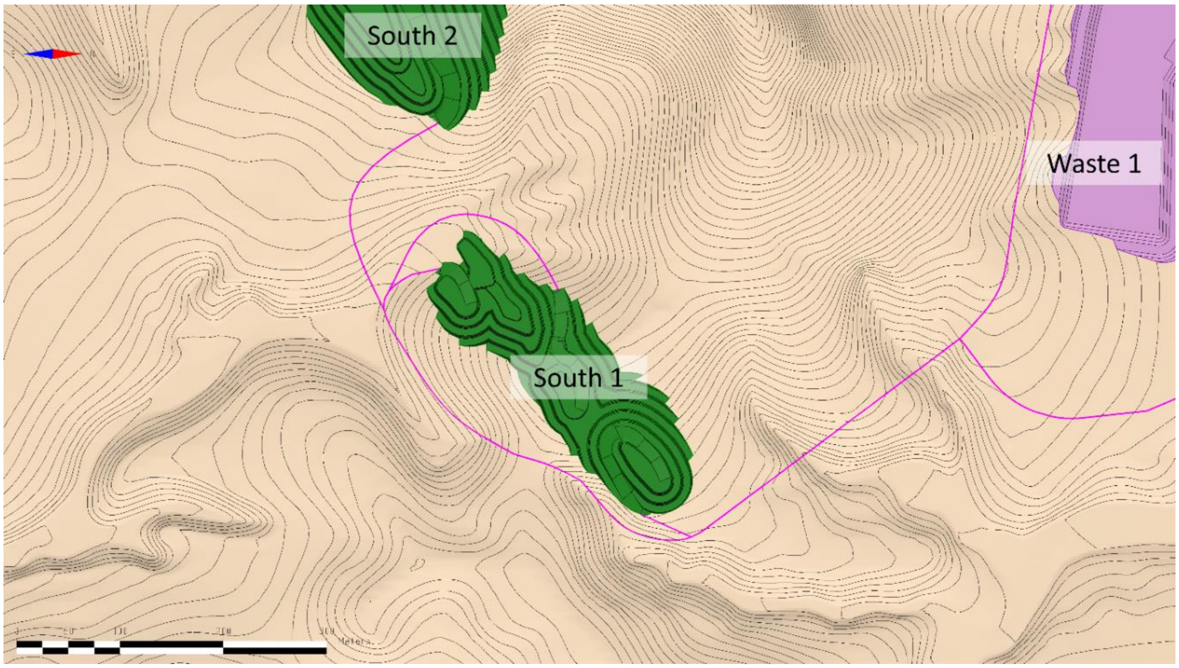
The pits designed for the Project are generally shallow, mining primarily oxide material, except for North Pit 2, which is deeper to extract fresh rock material. This pit was separated into two (2) Phases, where Phase 1 primarily includes the oxide material located near the surface and where Phase 2 primarily includes the fresh rock material located at depth. Figure 15.7 presents the overall designs for the Project, and Figure 15.8 to Figure 15.15 present a more detailed view of each pit and phase. Table 15.4 presents a comparison of the pit designs to the pit shells.

Figure 15.7 – Lola Pits



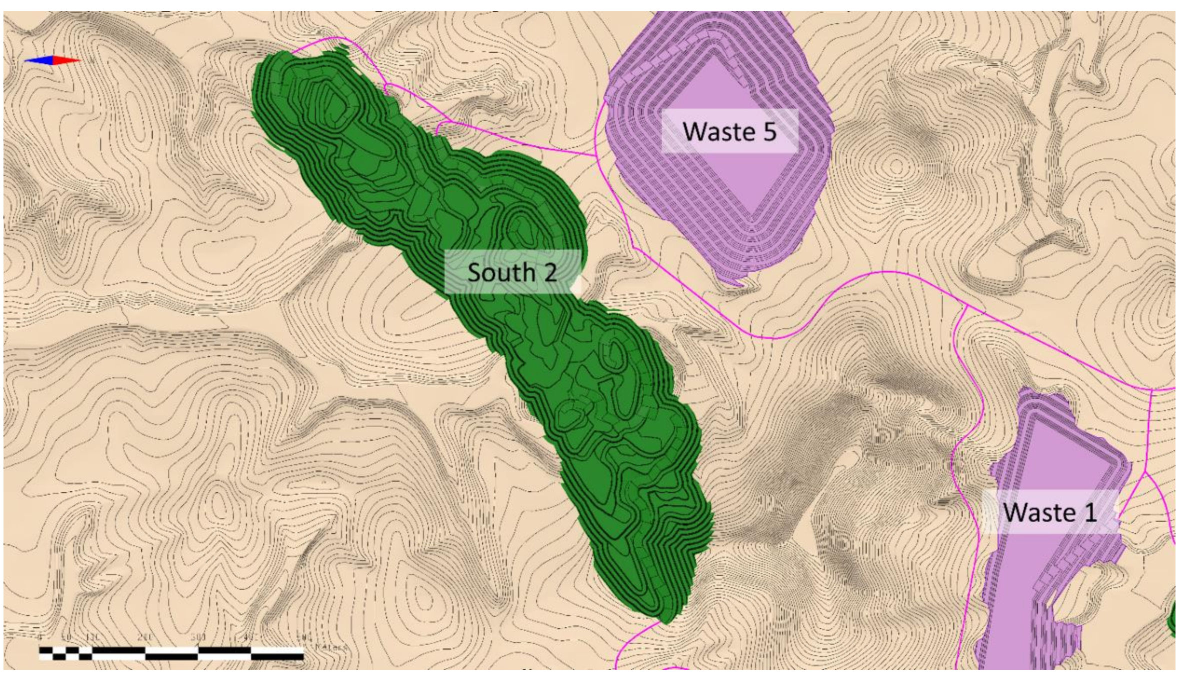
Source: DRA 2023

Figure 15.8 – South Pit 1 Design



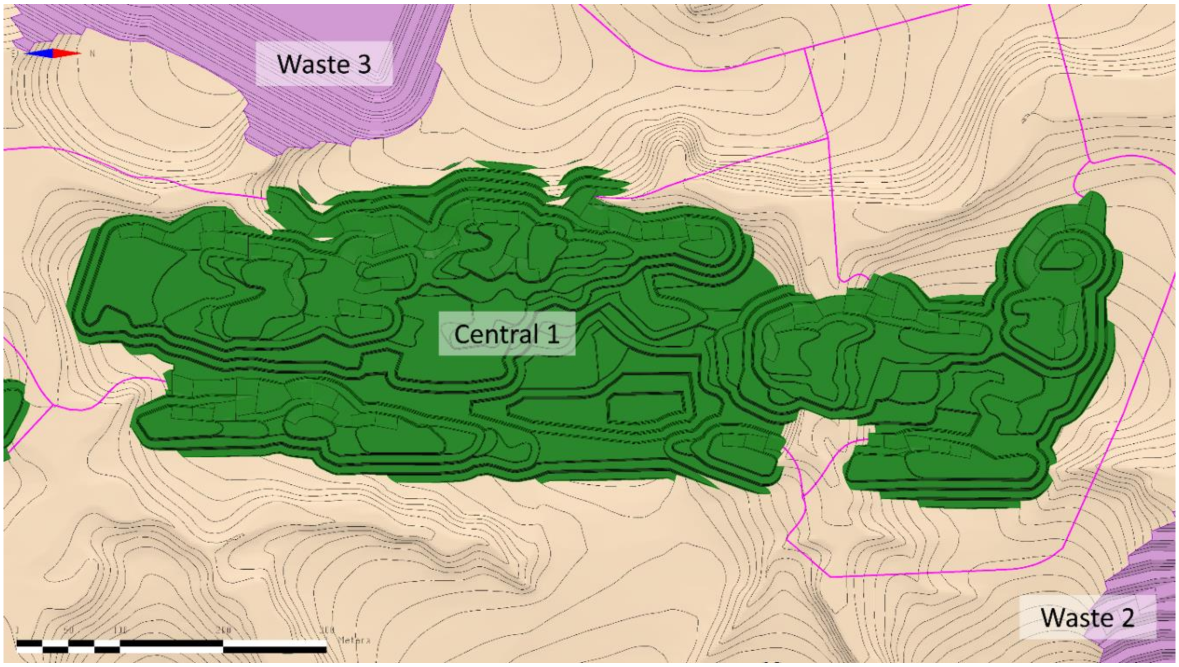
Source: DRA 2023

Figure 15.9 – South Pit 2 Design



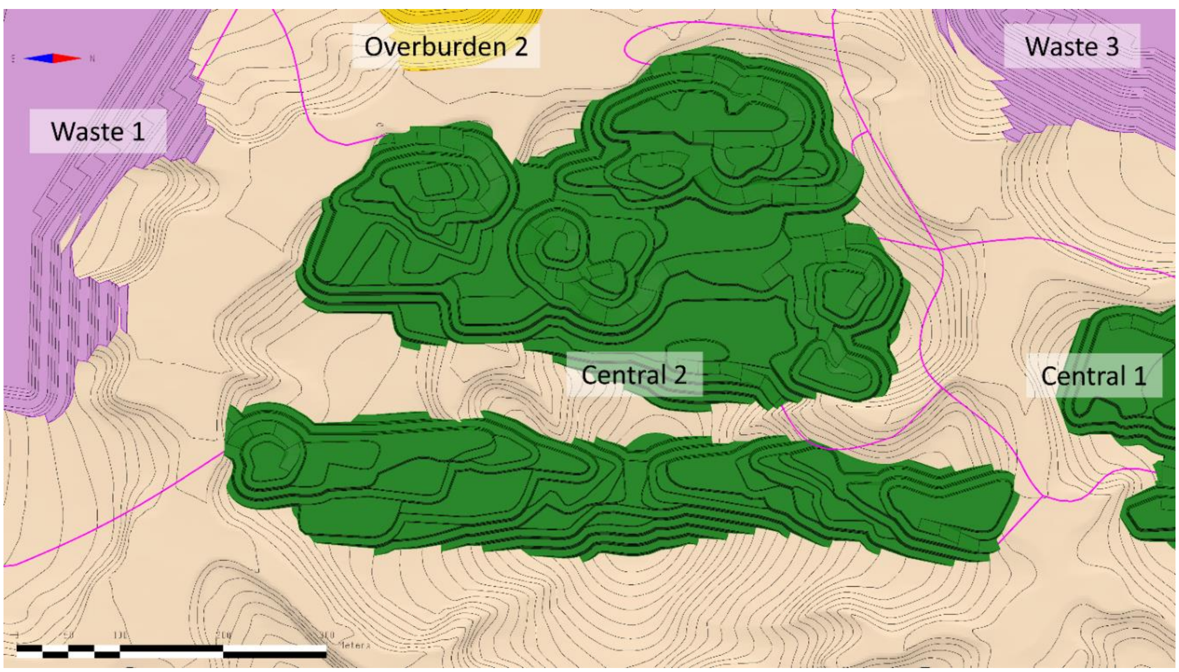
Source: DRA 2023

Figure 15.10 – Central Pit 1 Design



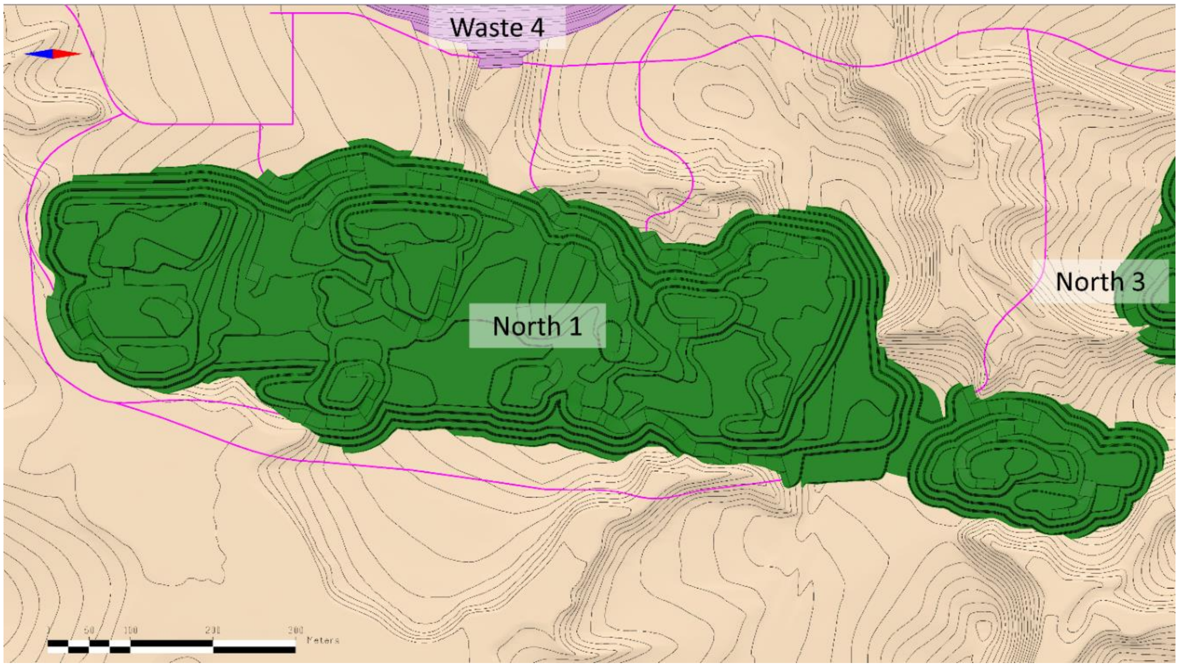
Source: DRA 2023

Figure 15.11 – Central Pit 2 Design



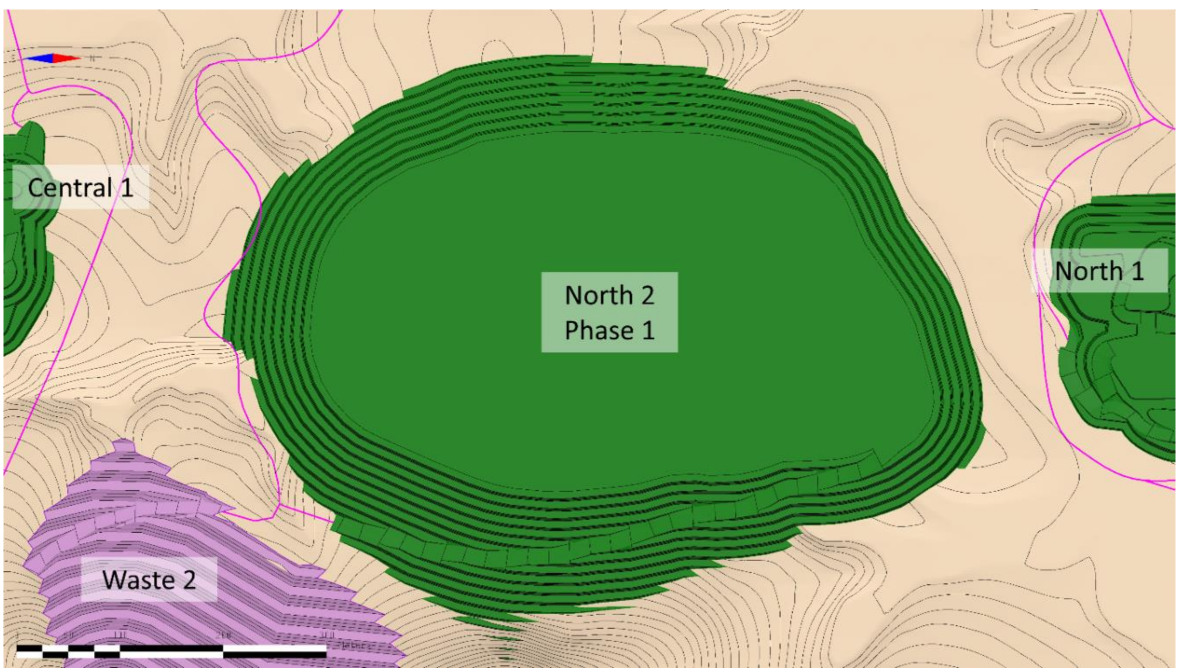
Source: DRA 2023

Figure 15.12 – North Pit 1 Design



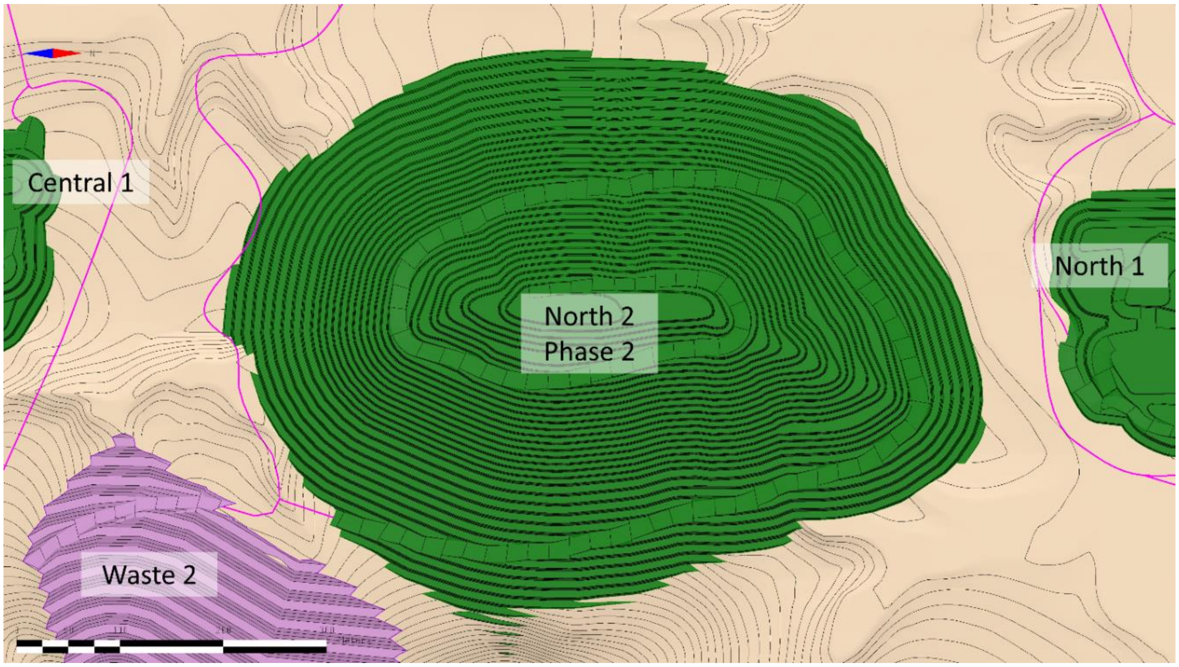
Source: DRA 2023

Figure 15.13 – North Pit 2 Phase 1 Design



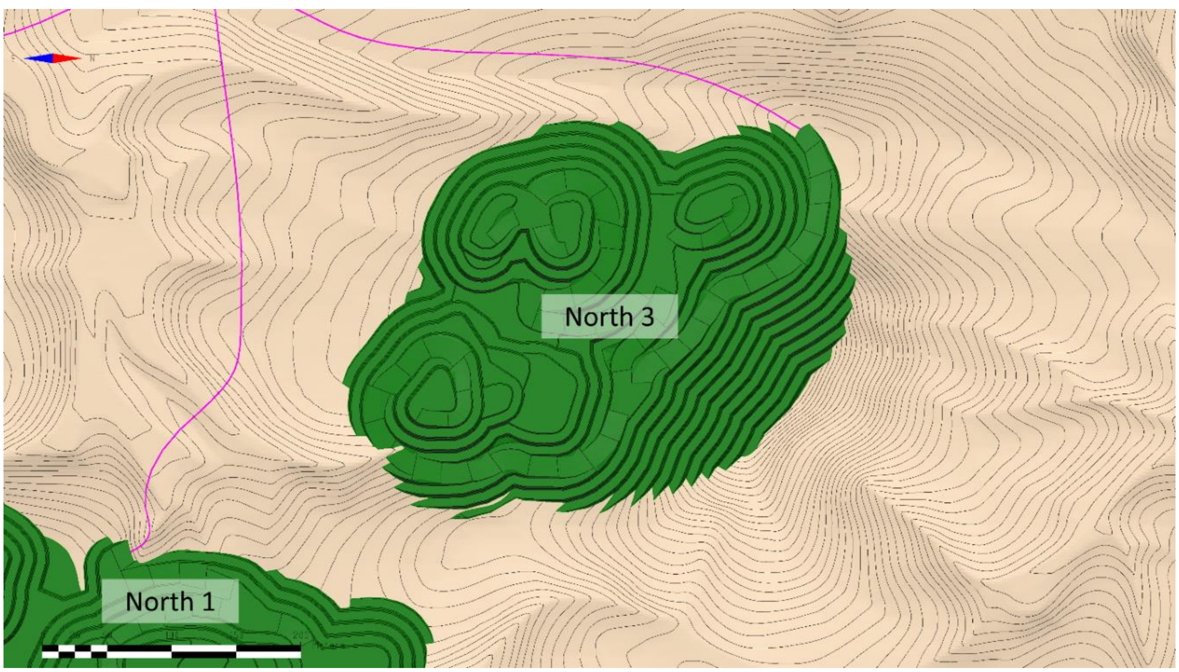
Source: DRA 2023

Figure 15.14 – North Pit 2 Phase 2 Design



Source: DRA 2023

Figure 15.15 – North Pit 3 Design



Source: DRA 2023

Table 15.4 – Comparison of Pit Shells and Pit Designs

Revenue Factor	Units	Sector		
		South	Central	North
Pit Shells				
Oxide Mineralized Material	kt	7,902.5	6,056.0	12,999.9
Fresh Mineralized Material	kt	567.1	710.6	12,949.8
Cg Grade	%	4.11	4.04	4.35
Waste Material	Kt	4,177.2	3,618.7	20,907.1
Cashflow Estimate	MUSD	220.2	169.9	1,814.7
Pit Designs				
Oxide Mineralized Material	kt	7,876.6	6,071.2	13,070.7
Fresh Mineralized Material	kt	588.3	671.5	12,974.7
Cg Grade	%	4.08	3.99	4.34
Waste Material	Kt	5,198.8	4,846.3	27,078.4
Cashflow Estimate	MUSD	214.5	162.0	1,768.6
Difference				
Oxide Mineralized Material		-0.3%	0.25%	0.54%
Fresh Mineralized Material		3.7%	-5.51%	0.19%
Cg Grade		-0.6%	-1.21%	-0.21%
Waste Material		26.3%	33.92%	29.52%
Cashflow Estimate		-2.58%	-4.68%	-2.54%

Source: DRA, 2023

15.3 Mineral Reserves

The Mineral Reserves for the Project are estimated at 6.4 Mt of Proven Mineral Reserves at a Cg grade of 4.38% and 34.5 Mt of Probable Mineral Reserves at a Cg grade of 4.09%, for a total of 40.9 Mt of Proven and Probable Mineral Reserves at a grade of 4.14%. This results in a stripping ratio of 0.88 to 1 (waste to ore). Table 15.5 presents the open pit Mineral Reserves for the Project.

Table 15.5 – Mineral Reserves Estimate – Effective Date February 27, 2023

Category	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Oxide	6.15	4.38	269.5
Fresh Rock	0.28	4.34	12.2

Category	Tonnage (Mt)	Grade (% Cg)	Contained Cg (kt)
Total Proven	*6.43*	*4.38*	*281.8*
Oxide	20.38	4.10	835.5
Fresh Rock	14.12	4.08	576.2
Total Probable	*34.50*	*4.09*	*1,411.1*
Total Proven and Probable	**40.93**	**4.14**	**1,694.7**

Notes:

1. 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 February 27, 2023.
4. Mineral Reserves are included in Mineral Resources.
5. Pit shell was developed using a 34-degree pit slope in oxide and 42-degree pit slope in fresh rock, concentrate sales price of US$1,289/t concentrate, average mining costs of US$3.25 /t ore oxide, US$3.75 /t ore fresh rock, US$2.75 /t waste oxide and US$3.25 /t waste fresh rock, processing costs of US$12.71 /t processed, G&A cost of US$1.52 /t processed and transportation costs of US$50/t concentrate, 84.2% process recovery and 95.4% concentrate grade and an assumed 100,000 t/a concentrate production.
6. The Mineral Reserves are inclusive of mining dilution and ore loss.
7. Contained graphite before processing recovery. Mining loss and dilution applied.
8. The open pit Mineral Reserves are estimated using a cut-off grade of 1.9% Cg.
9. The stripping ratio for the open pits is 0.88 to 1.
10. The Mineral Reserves are stated as dry tonnes delivered at the crusher.
11. Totals may not add due to rounding.

Source: DRA, 2023

16 MINING METHODS

The Project consists in three (3) separated mineralized areas: North, Central, and South. North and Central areas have been separated by two areas each one to avoid flooding zones.

The mine is planned as a conventional open pit operation with articulated haul trucks, hydraulic excavators, and loaders. The ore will be transported from the pit to either the mill or the appropriate ore stockpile, overburden will be transported to the overburden stockpiles and the waste material will be transported to a waste stockpile. There will be separate ore stockpiles for oxide and fresh rock material to facilitate blending at the mill. The overburden and waste materials will be sent to the nearest stockpile available to reduce haulage times.

The mineralized material and waste have a combination of oxide material (overburden and saprolitic rock) and Fresh rock. The oxide material is a weathering of the bedrock surface that requires a minimum of drilling and blasting (approximately 10%). All Fresh Rock material requires to be drilled and blasted.

This material will be hauled from the pits to the different destinations as follow:

Table 16.1 – Haulage Distance (Average)

Source	Destination (Km)	
	To Primary Crusher	To Waste Dump
North Pit 1	1.3	2.8
North Pit 2	3.9	2.7
North Pit 3	2.0	2.9
Central Pit 1	3.2	1.7
Central Pit 2	3.8	1.4
South Pit 1	5.6	2.6
South Pit 2	5.9	2.2

Source: DRA, 2023

SRG directed DRA to develop the mine using a contractor operated fleet rather to operate the mine themselves. DRA received quotes from six (6) contractors. SRG elected to continue discussions with one of the contractors, whose quote was used to determine the mining Capex and Opex (Section 21).

The mine will be operated year-round, seven (7) days per week, twenty-four (24) hours per day with three (3) 8-hour shifts per day. Fifteen days of weather delays are considered in the mine plan.

16.1 Mining Operations

The Lola mineral reserves, contained mostly within three (3) areas, divided into 7 pits, are intended to be mined by surface operations. It is estimated that approximately 40.93 Mt of mineralized material is extractable over a 17-year mine life.

The total Proved and Probable reserve for each pit is summarized in Table 16.2, as well as the waste quantities for the different pits and the stripping ratios.

Table 16.2 – Reserves by Pit

Pit	No.	Oxide		F. Rock		Ore Total		Waste	Mat. Moved	S/R
		kt	%Cg	kt	%Cg	kt	%Cg	kt	kt	
North	1	7,812.8	4.43	719.9	5.05	8,532.8	4.48	4,602.9	13,160.0	0.54
	2	4,004.3	4.60	12,185.6	4.02	16,189.9	4.16	19,151.5	36,014.4	1.19
	3	1,119.4	3.63	68.5	3.90	1,187.8	3.65	2,636.9	3,810.8	2.25
Total North Pits		*12,936.5*	*4.41*	*12,974.0*	*4.08*	*25,910.5*	*4.24*	*26,391.3*	*52,985.2*	*1.02*
Central	1	2973.0	3.87	317.1	4.36	3,290.1	3.92	2,524.2	5,847.7	0.77
	2	3,023.7	3.84	343.7	4.16	3,367.4	3.88	1,974.3	5,350.6	0.58
Total Central Pits		*5,996.7*	*3.85*	*660.8*	*4.26*	*6,657.5*	*3.90*	*4,498.5*	*11,198.3*	*0.68*
South	1	16.8	3.84	206.7	3.49	223.5	3.52	296.1	519.8	1.32
	2	7,580.4	3.99	562.3	4.35	8,142.7	4.01	4,763.3	13,485.3	0.59
Total South Pits		*7,597.2*	*3.99*	*769.0*	*4.12*	*8,366.2*	*4.00*	*5,059.4*	*14,005.1*	*0.60*
Total		26,530.4	4.17	14,403.9	4.09	40,934.3	4.14	35,949.2	78,188.6	0.88

Due to rounding errors, totals may not add-up exactly.

Source: DRA, 2023

The optimal plant recovery requires a blend of oxide and fresh rock with a maximum percentage of 45% of fresh rock. The overall percentage of fresh rock ore within 7 pits is 35%, and a total of 85% will be produced from North Pit 2 only. To maintain an optimal mill-feed blend, it is necessary to work in two to three pits at same time.

To reduce haulage times and distances, nearby dumps will be available for each of the five (7) pits.

In order to mine the northern portion of the North Pit 1, it is required that the national road will be relocated. The North Pit 1 has been separated into several phases so that the portion of the pit located north of the national road be mined first, and then be backfilled with some waste material coming from another portion of the same pit.

Once this In-Pit waste dump will be constructed, the National Road will be relocated to the north and build over the In-Pit dump. Then, the remaining area of the North Pit 1 will be mined without any other constraints.

The rest of the pits will be mined consecutively, with the Central Pit 1 starting from Year 8, the Central Pit 2 starting from the Year 10 and the South Pit from the Year 11.

16.2 Mine Geotechnical Design

This section is taken from the previously published Feasibility Study for the Lola Graphite Project. No additional geotechnical work or information is available for this UFS. The work done previously was reviewed by Claude Bisaillon, Senior Geotechnical Engineer and QP for DRA and is still considered valid.

Mine Design Engineering (MDEng) was engaged to provide geotechnical design for pit slopes and waste rock dumps. The project consists of five (5) long, shallow open pits excavated in the residual soils (primarily saprolite) to a typical depth of 20-25 m, as well as one pit extending into competent rock with a maximum depth of about 166 m, and eight (8) proposed waste dump sites. The design for the pits in weathered rock is considered to be at the feasibility level; designs for the deep pit are based on limited data and are considered PEA-level. The waste dumps are considered to be between pre-feasibility and feasibility as, at the time of the field investigations, the dump locations had not been finalized. The dump foundation conditions observed during field investigations and applied to numerical simulations are assumed to be reasonable for the selected sites; however, these assumptions must be compared to actual conditions at the selected site(s).

16.2.1 Field Work and Laboratory Testing

MDEng conducted field work on site to support development of a geotechnical model that was then used for design. The field work consisted of 11 hollow stem auger and Standard Penetration Test (SPT) holes and ten (10) diamond drilled holes across the 5.3 km long site. The SPT tests provided information on in-situ material strength while the diamond drilling provided a continuous sample profile. Laboratory tests were conducted on 30 of the SPT samples and 13 core samples from the diamond drill holes. Testing included natural moisture content, grain size analyses and Atterberg limits on the SPT samples, and direct shear and unconfined compressive strength tests on the core samples. This work (and previous studies) was used to characterize the site.

16.2.2 Site Characterization

The project site is overlain by a discontinuous lateritic horizon commonly in the order of 1 m thick, but thicker zones do occur. The laterites overlay saprolitic rock, which typically extends to about 20 to 25 m below surface. Laterites and saprolites are generally thinner in areas of higher ground and thicker in topographic lows. The saprolites overlie a thin to-discontinuous saprock layer, below which competent rock, typically a biotite gneiss, is encountered. Quartz-rich healed breccias and doleritic intrusions occur below the weathered horizon as well.

The dominant structural fabric onsite is a steeply dipping foliation, which strikes parallel to the long axis of the intended pits (roughly north-south for the north and central pits, and NE-SW for the southern pits). Large-scale faulting does occur in the region; there is a dextral strike-slip fault that offsets and widens the graphite zone between the central and south pits. The strike of this fault is assumed to be NW-SE, consistent with regional faulting to the north of the project site.

The following geotechnical domains have been defined:

- Laterites and the Upper Saprolite (laterites were generally only observed to extend 1-2 m below surface; however, for design purposes this zone was conservatively extended to a thickness equivalent to one bench [6m]);
- Main Saprolite Zone (majority of the proposed pit slopes will be excavated in this zone);
- Saprock Zone;
- Fresh Rock.

16.2.2.1 *Future Work for Site Characterization*

- Detailed delineation of the thickness of the saprock domain in pit slopes;
- Domaining of the saprolite based on parent rock type;
- Structural mapping of bench faces and development of a structural model (relict structures can contribute to instability in weak, highly weathered rocks; a more deliberate focus on discontinuity sets could better refine the site geotechnical model);
- Geotechnical drilling and characterization for the deep pit (North Pit 2), including oriented core to verify assumptions about the structural regime and rock mass quality;
- Development of a fault model for the site to identify zones with potential for largescale instability;
- Strength testing of fresh rock;
- Verification of ground conditions in final dump areas prior to dump construction;
- Routine verification of ground conditions during the project operating life.

16.2.3 Pit Design

Using the identified geotechnical domains and strength characteristics assigned to each, based on empirical relationships to in situ/field testing and laboratory results, empirical and numerical analyses were performed for overall slope angles. Bench face stability was also assessed assuming a 6 m bench height. Two (2) ranges of slope height were assessed for the shallow pits in the weathered zone: 54 m (nice (9) benches, a reasonable upper bound height based on the provided pit shells) and 24 m (four (4) benches, a typical pit height in the North Pit 1 and Central Pits 1 and 2). Based on the empirical, numerical, and kinematic considerations the recommended pit slope designs are summarized as follows:

- For slopes with a total height of 24 m or less:
  - Maximum overall slope angle of 40 degrees;
  - The first bench should have a bench face angle (BFA) of 50 degrees with a minimum bench width of 5.4 m. Subsequent benches may be excavated with a BFA of 65 degrees and a minimum bench width of 5 m.
- For slopes 24 to 54 m:
  - A maximum overall slope angle of 34 degrees;
  - The first bench should have a bench face angle (BFA) of 50 degrees with a minimum bench width of 7 m. Subsequent benches may be excavated with a BFA of 65 degrees and a minimum bench width of 6.7 m. These slope angles are very sensitive to water, and water management will be critical to slope stability.
- For the slopes of North Pit 2, the following recommendations are made:
  - Excavations in the upper weathered zones should follow the recommendations described above;
  - At the saprock/saprolite interface (i.e., where ground is no longer rippable) a bench at least 5 m wide should be left between the toe of the weathered rock and the crest of the fresh rock slope;
  - The inter-ramp angle in the fresh rock should be no more than 39° for single benches and 50° for double benches; and,
  - Bench face angles of 75° may be used, with catch bench widths of 5.7 m for single benches and 6.9 m for double benches.

16.2.3.1 Future Work for Pit Design

- Evaluate impact of relict structures on slope stability in the weathered horizons once mapping data is available;
- Slope performance should be used to verify design strength parameters through back analysis, so that the design criteria can be more reliably defined;
- Kinematic analysis for benches in fresh rock once structural orientation data is available;
- Evaluate impact of fault structures on slope stability once fault model has been developed;

- Higher benches and/or double benches may be considered in fresh rock, if this is economically advantageous for operations (may depend on excavation equipment available);
- Develop a detailed monitoring program once schedules and production plans are available.

16.2.4 Waste Dump Design

- Two (2) waste dump footprints were provided by SRG prior to field work; the mine plan now includes seven (7) small dumps around the pit perimeters. Field investigations were conducted only in the area of the north dump (now Dump 1) as access to the proposed south dump footprint was not permitted. It is assumed that foundation conditions for the other proposed sites will be similar; however, this should be confirmed prior to construction of each of the proposed dumps. Details regarding expected volumes and equipment to be used were not complete at the time of this report. Additionally, it is understood that in-pit dumping may be used for a significant portion of waste rock. Small stack heights (in the order of 20 m) and volumes were therefore assumed. Based on the waste dump slope and foundation stability analysis it is concluded that:
  - The overall slope angle of the dump should be 23°. Assuming bench heights of 6 m with, on average, 31° angle of repose bench faces, the catch berm would be in the order of 8.8 m for a nominal dump that is 4 benches high.
  - Critical slope stability is not dependent on absolute stack height. Foundation stability does decrease with increasing stack height, however within the practical scope of the project it is unlikely that stack heights will exceed the magnitudes trialed in this study (expected 20 and tested up to 40 m).
  - Control of water (surface water and moisture in fill) will be important for dump stability, particularly control of run-off to prevent erosion.
  - Control of water will be very important for operational considerations; specifically, for trafficability and bearing capacity for haul trucks.
  - Short lifts with good compaction are recommended to ensure adequate bearing capacity is achieved.
  - In-pit dumping may be a preferred option both operationally and from a geotechnical perspective. Detailed planning and design should aim to maximize in put dumping.

- Future Work for Waste Dump Design:
  - Once volumes are known and actual footprints are refined the down-slope impact of erosion and potential failures needs to be assessed (safety, environmental).
  - Phased design with detailed stability analyses of interim and final stages should be completed once volumes and schedules are known.

- In-pit dumping may be a preferred option both operationally and from a geotechnical perspective. Detailed planning and design should include this option in their development plan.
- Develop a detailed monitoring program once schedules and production plans are available.

- Water:
  - Water management is expected to be the single biggest factor in pit slope and dump performance. Controlling surface flows via ditching, sloping, diverting, etc., is necessary to prevent erosion of slope surfaces. Controlling pore pressures (i.e., ground water) is critical for maintaining suitable factors of safety for pit slopes. It is strongly recommended that a detailed hydrogeology study be conducted to provide a water management plan suited to the conditions on the project site.
  - Future Work for Groundwater investigation

16.3 Mine Design

The main mine design parameters and results are outlined in Section 15.2. This section further details the geotechnical parameters used and the flooding constraints.

16.3.1 Material Properties

Table 16.3 defines the material properties used for the mine design and mine plan. The densities for the mineralization and waste rock were supplied by SRG with the block model while the remaining parameters were taken from DRA internal database. These properties are important for determining the mine equipment fleet requirement and dumps capacity.

Table 16.3 – Material Properties

Material Type	Density (t/m^3)	Swell Factor (%)
Overburden (Soil)	1.59	35
Oxide	1.66	35
Fresh Rock	2.11	35

Source: DRA, 2023

16.3.2 Pit Design

The table below presents a general summary of the surface, maximum width, length, depth and roughly area for each of the 7 pits designed for the Lola deposit.

Table 16.4 – Pit Dimension

Pit	No.	Length (m)	Width (m)	Depth (m)	Surface (ha)
North	1	1,200	275	35	34.6
	2	560	150	170	29.8
	3	315	265	25	9.2
Central	1	855	235	35	23.5
	2	600	440	35	21.9
South	1	320	75	25	2.8
	2	1,250	225	35	31.6

Source: DRA, 2023

Pit design was made following geotechnical pit slope parameters and hauling road design detailed in the following points.

16.3.3 Geotechnical Pit Slope Parameters

This section is taken from the previously published Feasibility Study for the Lola Graphite Project with some slight modifications for clarity.

Based on MDEng's Report (#18018-103 Feasibility level site characterization, pit slope design and waste dump evaluation for the SRG Graphite Lola Graphite project in Guinea, dated July 16, 2019) recommendations for bench slopes, DRA used an inter-ramp slope angle of 34° for the final pit walls located in the oxide material. As for the fresh rock, material, DRA used an inter-ramp slope angle of 42°. The geotechnical parameters are listed in Table 16.5 and illustrated in Figures 16.1 and 16.2.

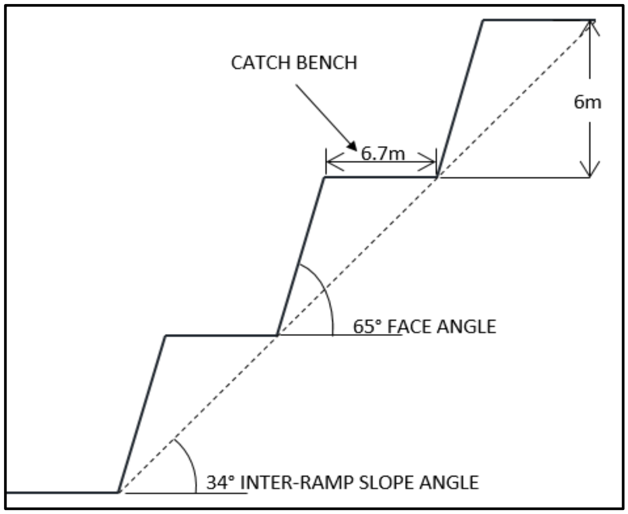
Table 16.5 – Pit Design Parameters

Description	Unit	Oxide	Fresh Rock
Bench Height	m	6	6
Bench Width	m	6.7	4.5
Bench Face Angle	°	65	70
Minimum Mining Width	m	50	

Notes:
Due to the nature of the oxide material, requiring little blasting, the bench height could be reduced to 2m in certain areas.

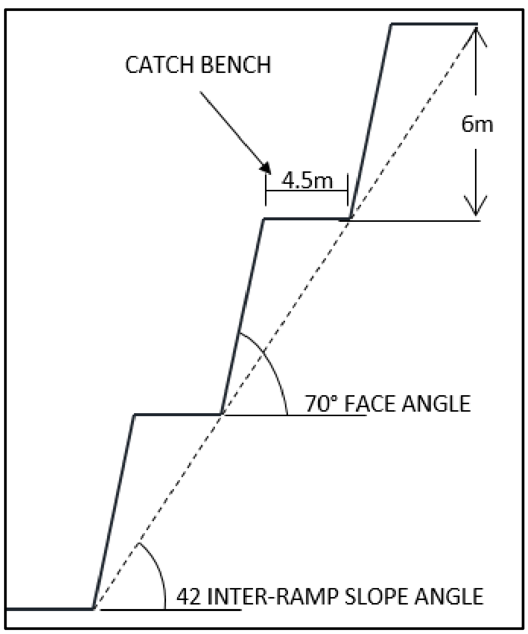
Source: DRA, 2023

Figure 16.1 – Pit Wall Configuration – Oxide



Source: DRA, 2019

Figure 16.2 – Pit Wall Configuration – Fresh Rock



Source: DRA, 2019

16.3.4 Ore Stockpile Design

There will be two (2) ore stockpiles, one for each ore type (oxide and fresh rock). Design parameters for the stockpiles are presented in Table 16.6 while their capacities are presented in Table 16.7.

Their location is presented in Figure 16.3. The stockpiles will be located near the mill, to minimize rehandling costs. A swell factor of 1.25 was used.

Table 16.6 – Ore Stockpile Design Parameters

Description	Unit	Oxide	Fresh Rock
Lift Height	m	3	3
Berm Width	m	5	5
Face Angle	°	30	30

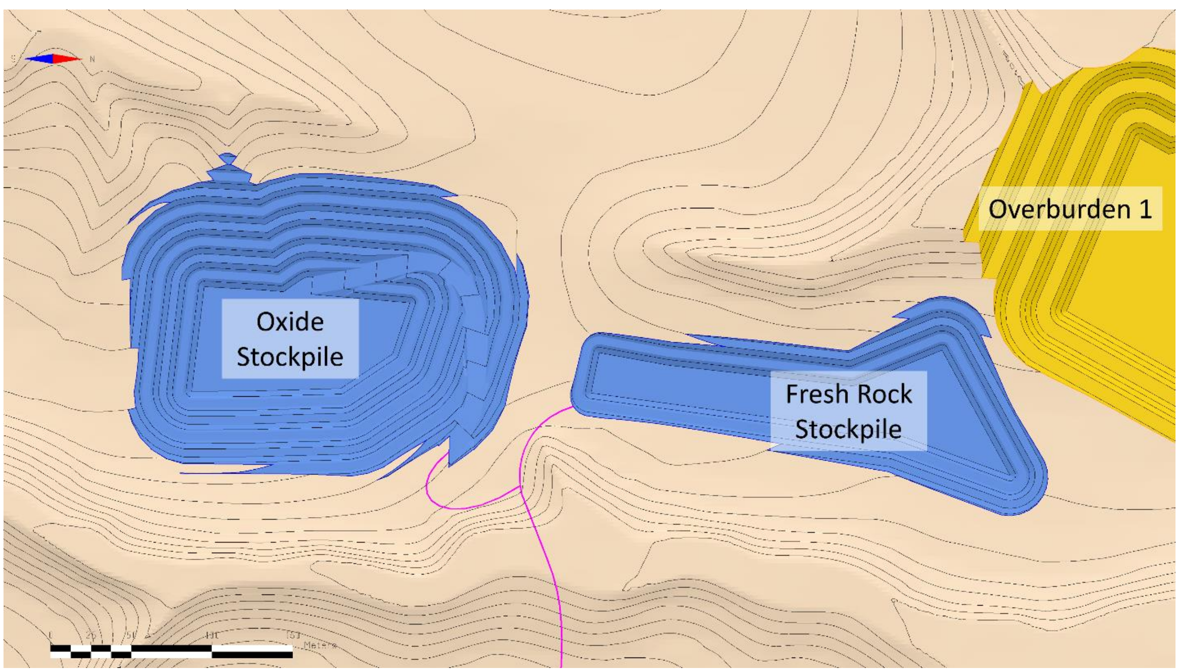
Source: DRA, 2023

Table 16.7 – Ore Stockpile Capacities

Material	Maximum Volume (m^3)	Year Maximum is reached
Oxide	290,000	2
Fresh Rock	79,000	16

Source: DRA, 2023

Figure 16.3 – Ore Stockpile Location



Source: DRA 2023

16.3.5 Waste and Overburden Stockpile Design

There will be five (5) waste stockpiles and two (2) overburden stockpiles. Design parameters for the stockpiles are presented in Table 16.8 while their capacities are presented in Table 16.9. Their locations are presented in Figure 16.4. The stockpiles will be located near the different pits, to minimize haulage costs. A swell factor of 1.25 was used.

Table 16.8 – Overburden and Waste Stockpile Design Parameters

Description	Unit	Oxide	Fresh Rock
Lift Height	m	3	3
Berm Width	m	5	5
Face Angle	°	30	30

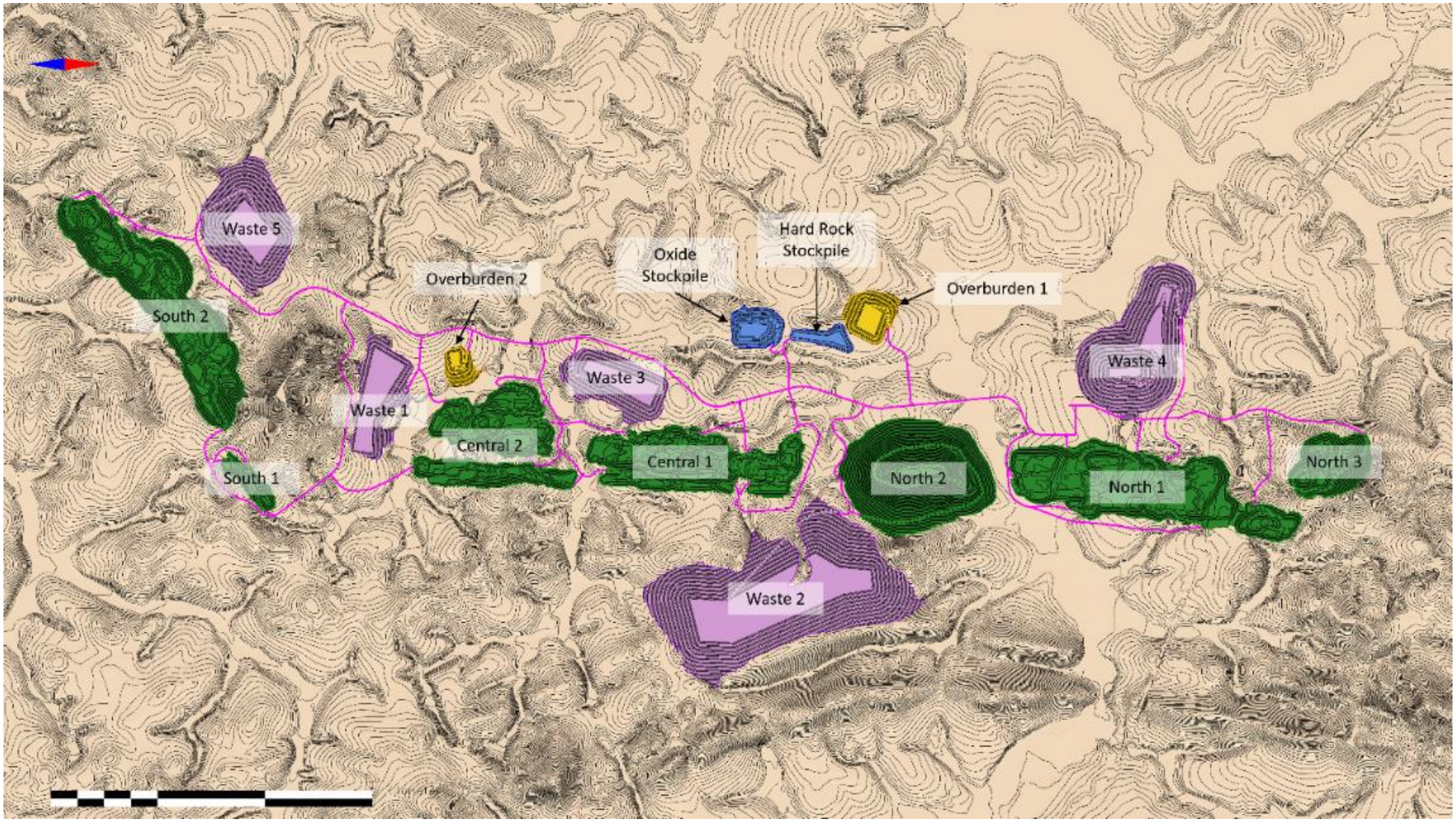
Source: DRA, 2023

Table 16.9 – Overburden and Waste Stockpile Capacities

Stockpile	Maximum Volume (m³)	Target Pits
Overburden 1	2.1	Central 1, North 1, North 2 and North 3
Overburden 2	3.7	South 1, South 2 and Central 2
Waste 1	15.1	Central 2
Waste 2	0.7	North 2
Waste 3	2.6	Central 1
Waste 4	3.5	North 1 and North 3
Waste 5	10.4	South 1 and South 2

Source: DRA, 2023

Figure 16.4 – Waste and Overburden Stockpile Locations



Source: DRA 2023

16.4 Mine Planning

A mine plan was prepared to estimate a probable production scenario for the Project and assess the mine equipment fleet requirements, as well as the mine Capex and Opex for the financial model. The mine plan was based on feeding the mill a maximum of 2,565 kt of ore per year to produce 100 kt of concentrate per year. The mill is designed for a 45% fresh rock – 55% oxide blended feed. However, the deposit has only 35% fresh rock overall. Therefore, the design blend was maintained for as many years as possible, and the proportion of oxide in the feed was not allowed to exceed 75%. The only exception is the first year of production, where there will be a 100% oxide feed at the mill since the fresh rock material is located more at depth and the oxide material is easier to access earlier. During this period, the mill recovery is lowered to 73%. A three-month pre-production is planned prior to feeding the mill.

The mine plan was developed using HxGN MinePlan Schedule Optimizer (MPSO) based on the final pit design and the intermediate phases described in Section 15.2.3, and the 3D block model. Constraints were placed on the number of pits being mined in a single period to optimize the number of equipment necessary and reduce unnecessary equipment movement. Additionally, pits located closer to the mill were favoured in earlier periods to reduced haulage times and costs.

The mine plan was estimated monthly for the first year of activity, which includes the pre-production period; the remaining mine life was generated on a yearly basis.

The detailed mine production schedule, by material and destination, is presented in Table 16.10 and Table 16.11. End of period maps are presented in Figure 16.5 to Figure 16.13. In these figures, the areas mined in each period are represented in green. The contours are drawn on 2m intervals.

Table 16.10 – Mine Production Schedule

Description	Units	Pre. - Prod	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Total
Concentrate	Kt	-	62.0	99.6	97.3	97.3	97.3	97.3	97.3	97.3	95.1	90.5	90.5	90.5	90.5	90.5	90.5	82.4	16.1	**1,482.0**
ROM to Plant	Kt	-	1816.9	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	563.0	**40,854.9**
Cg (diluted)	%	-	4.45	4.40	4.30	4.30	4.30	4.30	4.30	4.30	4.20	4.00	4.00	4.00	4.00	4.00	4.00	3.64	3.25	**4.14**
F. Rock proportion	%	-	45%	45%	45%	45%	45%	45%	45%	40%	35%	30%	25%	25%	25%	25%	25%	35%	45%	**35%**
ROM to STK	Kt	-	139.4	487.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	240.1	0.0	395.7	122.0	0.0	**1,384.5**
STK withdrawal	Kt	-	137.3	2.1	487.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	240.1	0.0	353.8	163.9	**1,384.5**
STK Balance	Kt	-	388.3	487.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	240.1	0.0	395.7	163.9	0.0	**0.0**
Total Waste	Kt	-	3179.6	3750.4	4008.8	2670.7	2007.7	2120.8	1773.2	1864.7	1641.2	1230.6	1711.3	1904.3	1919.7	1052.6	1600.5	3118.1	395.0	**35,949.2**
Waste Oxide	Kt	-	3130.2	2168.7	1169.3	629.5	610.6	850.4	876.8	1096.7	991.4	773.3	1322.9	1580.4	1560.3	713.5	1316.6	2841.3	337.3	**21,969.3**
Waste F. Rock	Kt	-	49.5	1581.7	2839.5	2041.3	1397.1	1270.3	896.4	768.0	649.8	457.3	388.3	323.8	359.4	339.1	283.9	276.9	57.7	**13,980.0**
Total Mat. Moved	**kt**	-	5135.9	6802.7	6573.8	5235.7	4572.7	4685.8	4338.2	4429.7	4206.2	3795.6	4276.3	4469.3	4724.9	3617.6	4561.2	5805.1	958.1	**78,188.6**
S/R		-	1.75	1.46	1.56	1.04	0.78	0.83	0.69	0.73	0.64	0.48	0.67	0.74	0.75	0.41	0.62	1.22	0.70	**0.88**

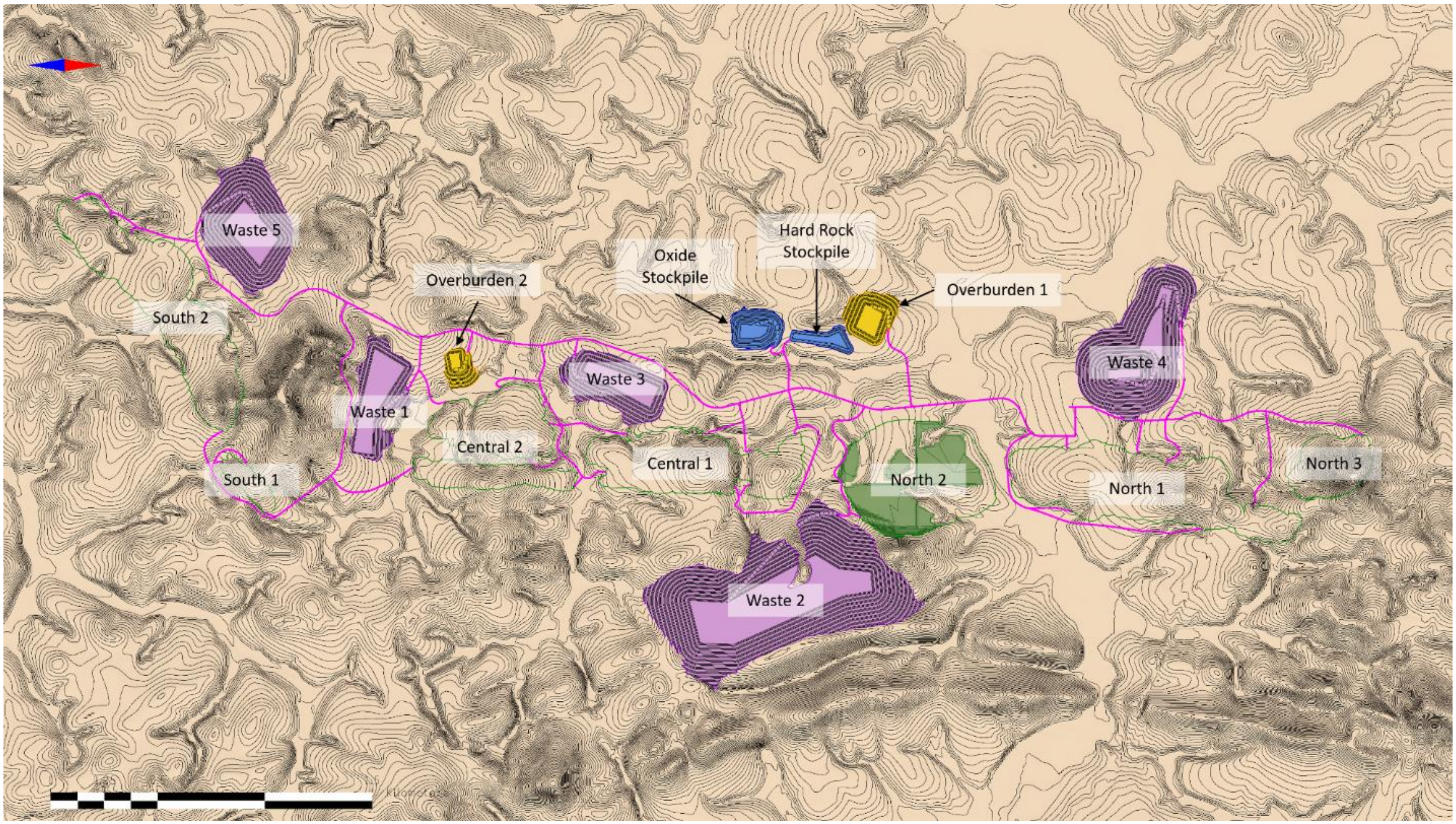
Source: DRA, 2023

Table 16.11 – Mill Feed Breakdown

Description	Units	Pre. - Prod	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Total
Concentrate	Kt	-	62.0	99.6	97.3	97.3	97.3	97.3	97.3	97.3	95.1	90.5	90.5	90.5	90.5	90.5	90.5	82.4	16.1	**1,482.0**
ROM Oxide	Kt	-	1816.9	1410.8	1410.8	1410.8	1410.8	1410.8	1410.8	1410.8	1539.0	1667.3	1795.5	1923.8	1923.8	1923.8	1923.8	1923.8	367.7	**26,680.3**
Cg (diluted)	%	-	4.45	4.73	4.48	4.40	4.29	4.38	4.33	4.15	4.17	3.98	4.02	4.06	4.07	4.06	3.99	3.68	3.27	**4.17**
F. Rock proportion	%	-	100%	55%	55%	55%	55%	55%	55%	55%	60%	65%	70%	75%	75%	75%	75%	75%	65%	**65%**
ROM F. Rock	Kt	-	0.0	1154.3	1154.3	1154.3	1154.3	1154.3	1154.3	1154.3	1026.0	897.8	769.5	641.3	641.3	641.3	641.3	641.3	195.4	**14,174.6**
Cg (diluted)	Kt	-	0.00	4.00	4.08	4.17	4.32	4.20	4.26	4.48	4.24	4.05	3.96	3.82	3.79	3.82	4.04	3.53	3.20	**4.09**
F. Rock proportion	%	-	0%	45%	45%	45%	45%	45%	45%	45%	40%	35%	30%	25%	25%	25%	25%	25%	35%	**35%**
Total Mill Feed	Kt	-	1816.9	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	2565.0	563.0	**40,854.9**
Cg (diluted)	%	-	4.45	4.40	4.30	4.30	4.30	4.30	4.30	4.30	4.20	4.00	4.00	4.00	4.00	4.00	4.00	3.64	3.25	**4.14**

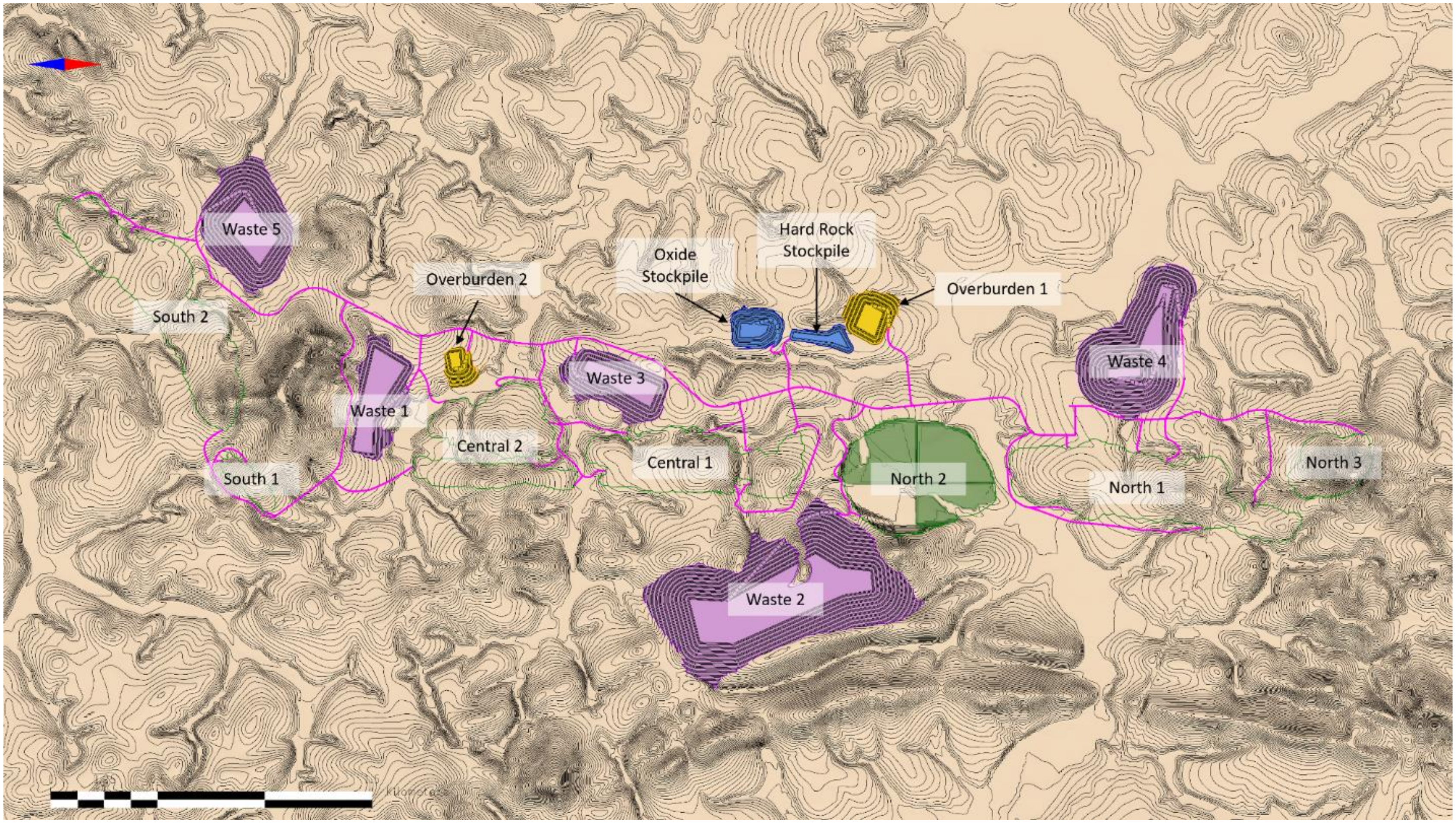
Source: DRA, 2023

Figure 16.5 – End of Period Map – Month 6



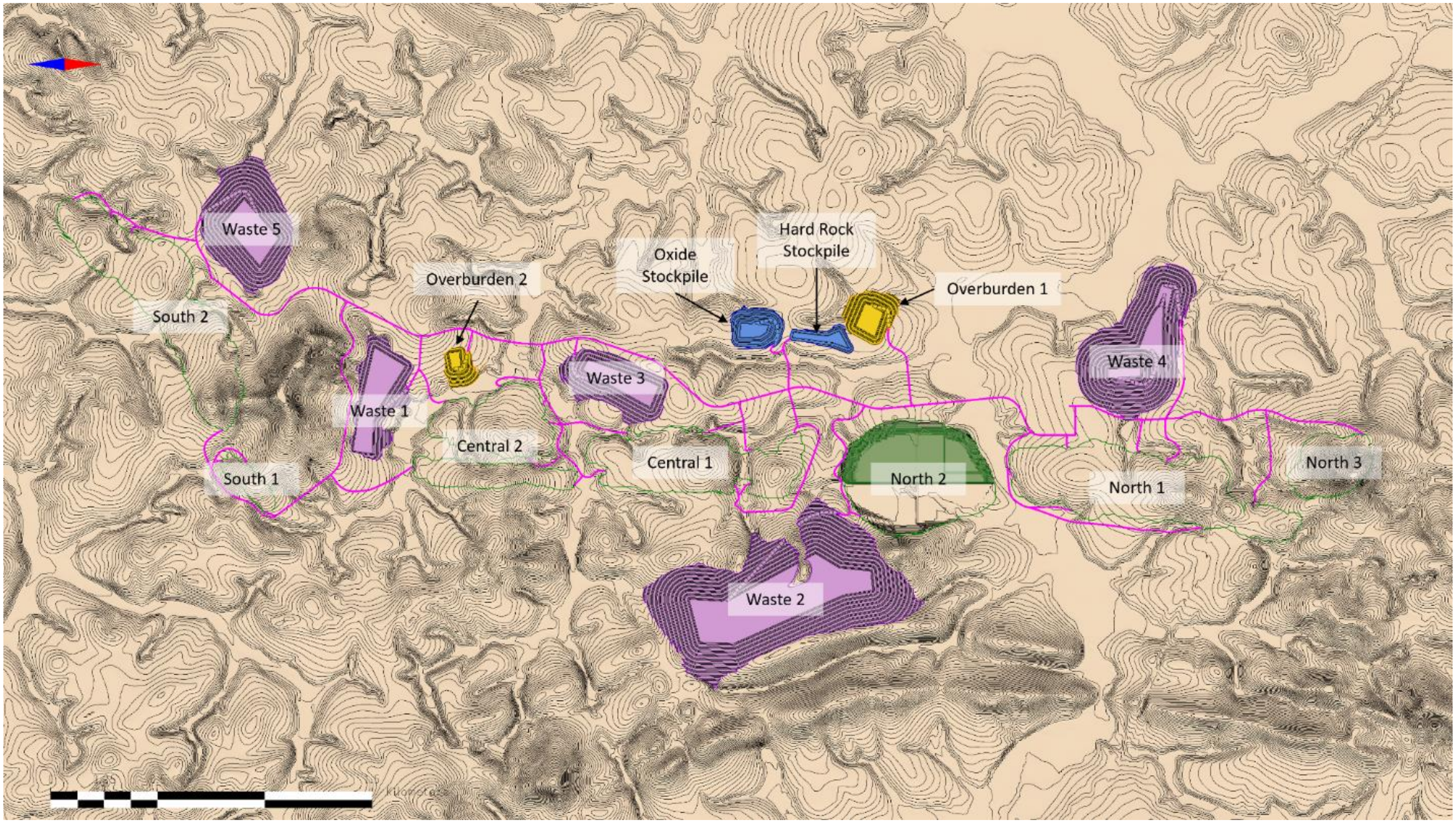
Source: DRA 2023

Figure 16.6 – End of Period Map – Year 1



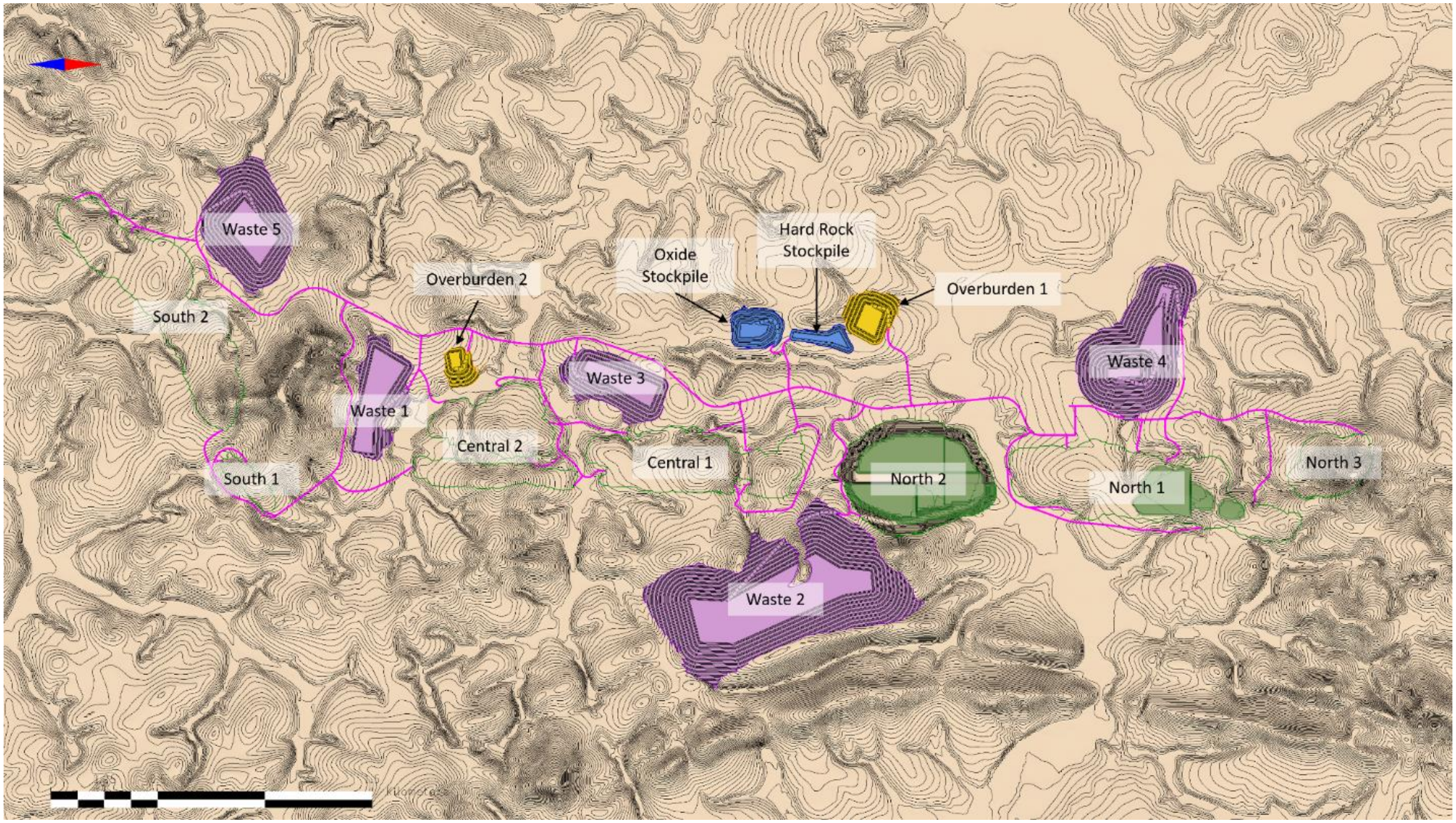
Source: DRA 2023

Figure 16.7 – End of Period Map – Year 2



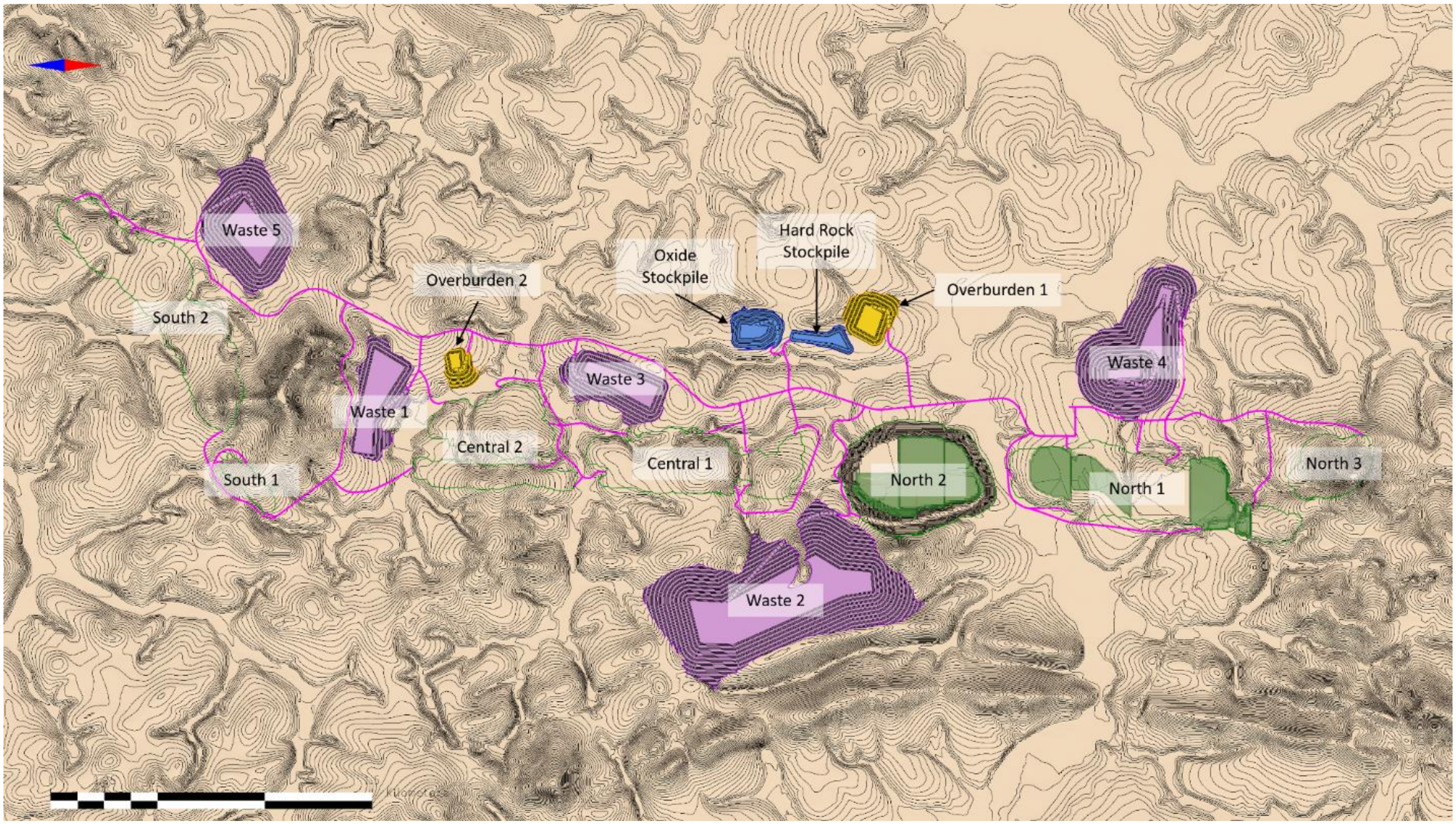
Source: DRA 2023

Figure 16.8 – End of Period Map – Year 3



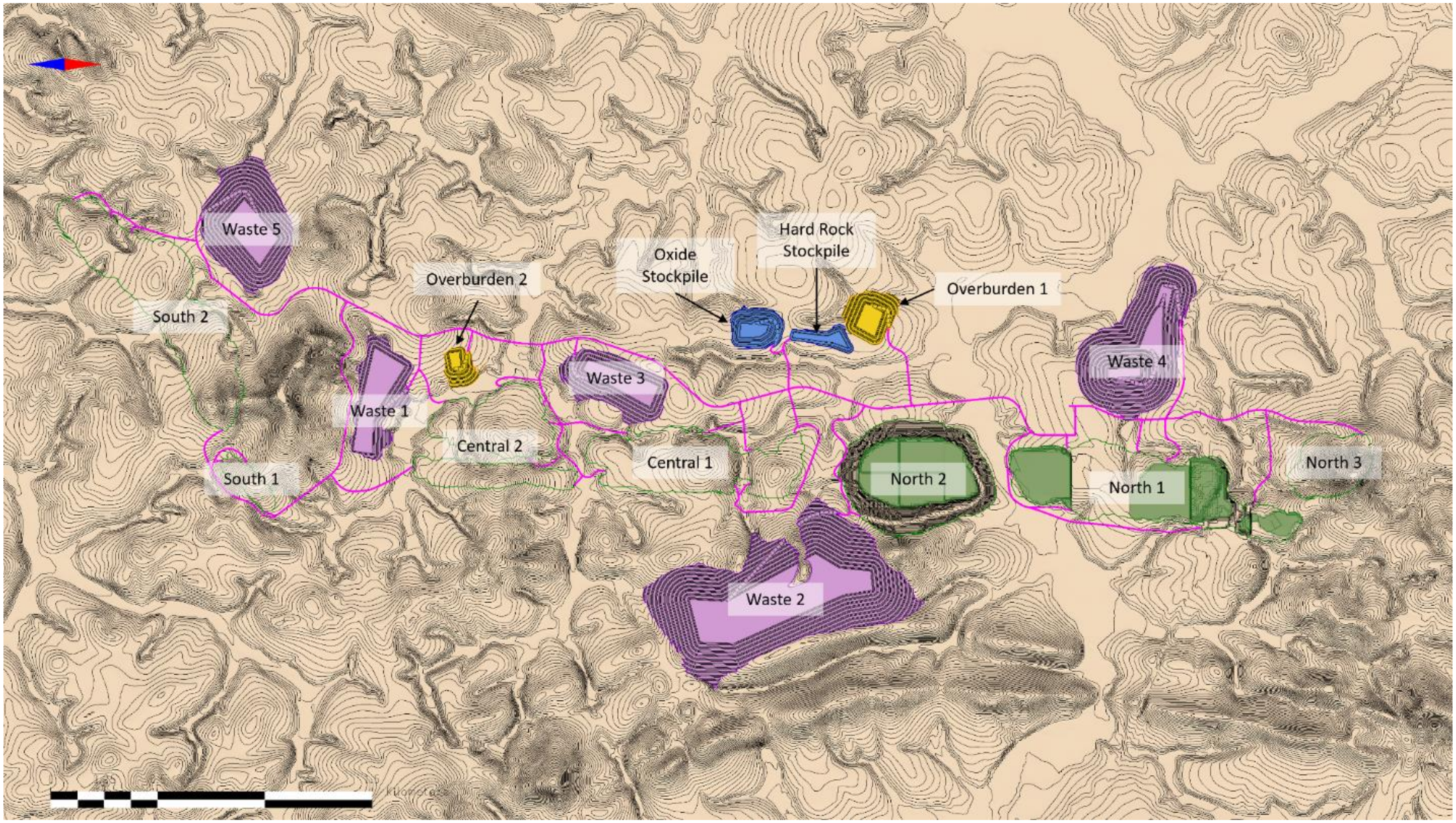
Source: DRA 2023

Figure 16.9 – End of Period Map – Year 4



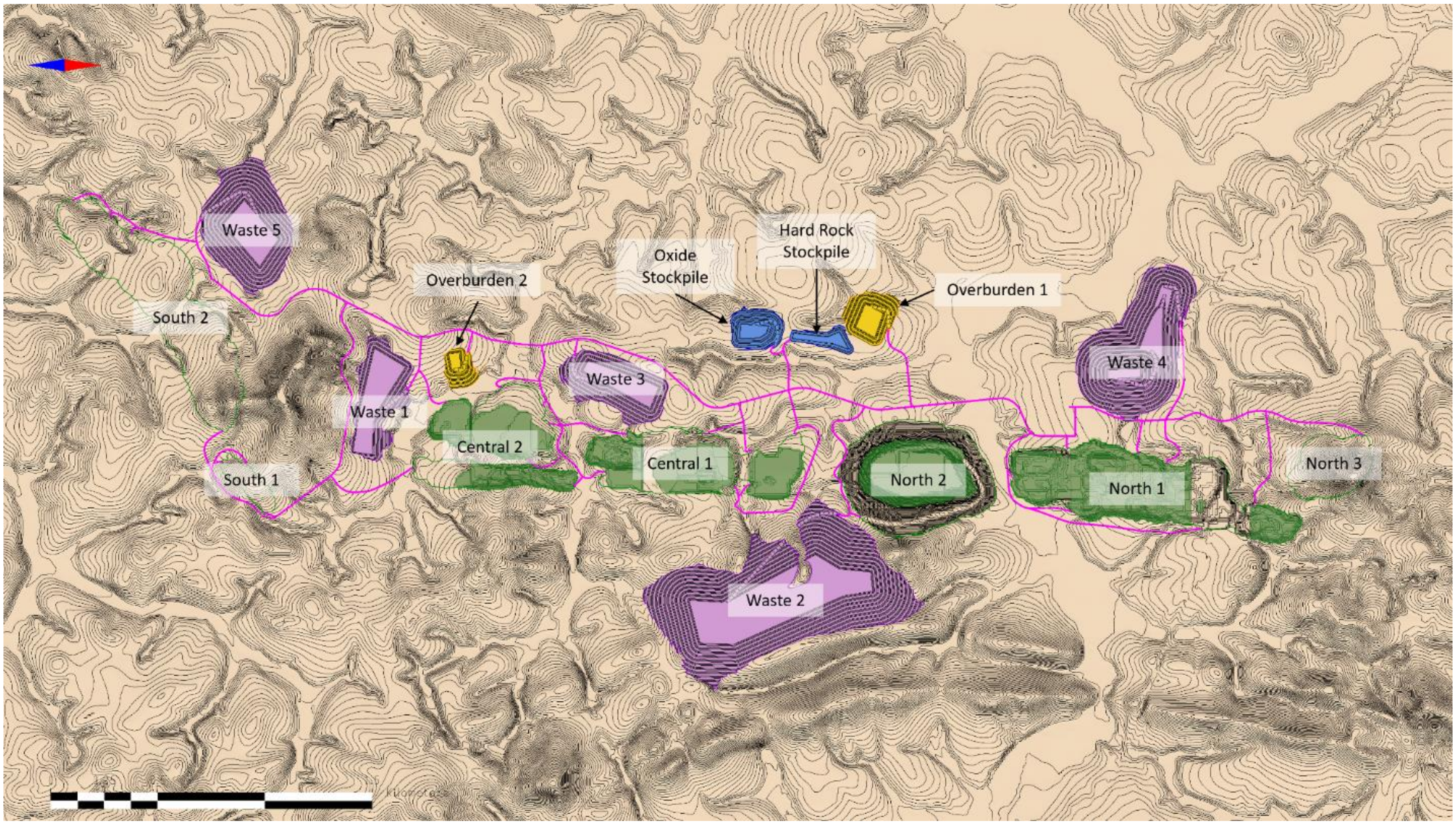
Source: DRA 2023

Figure 16.10 – End of Period Map – Year 5



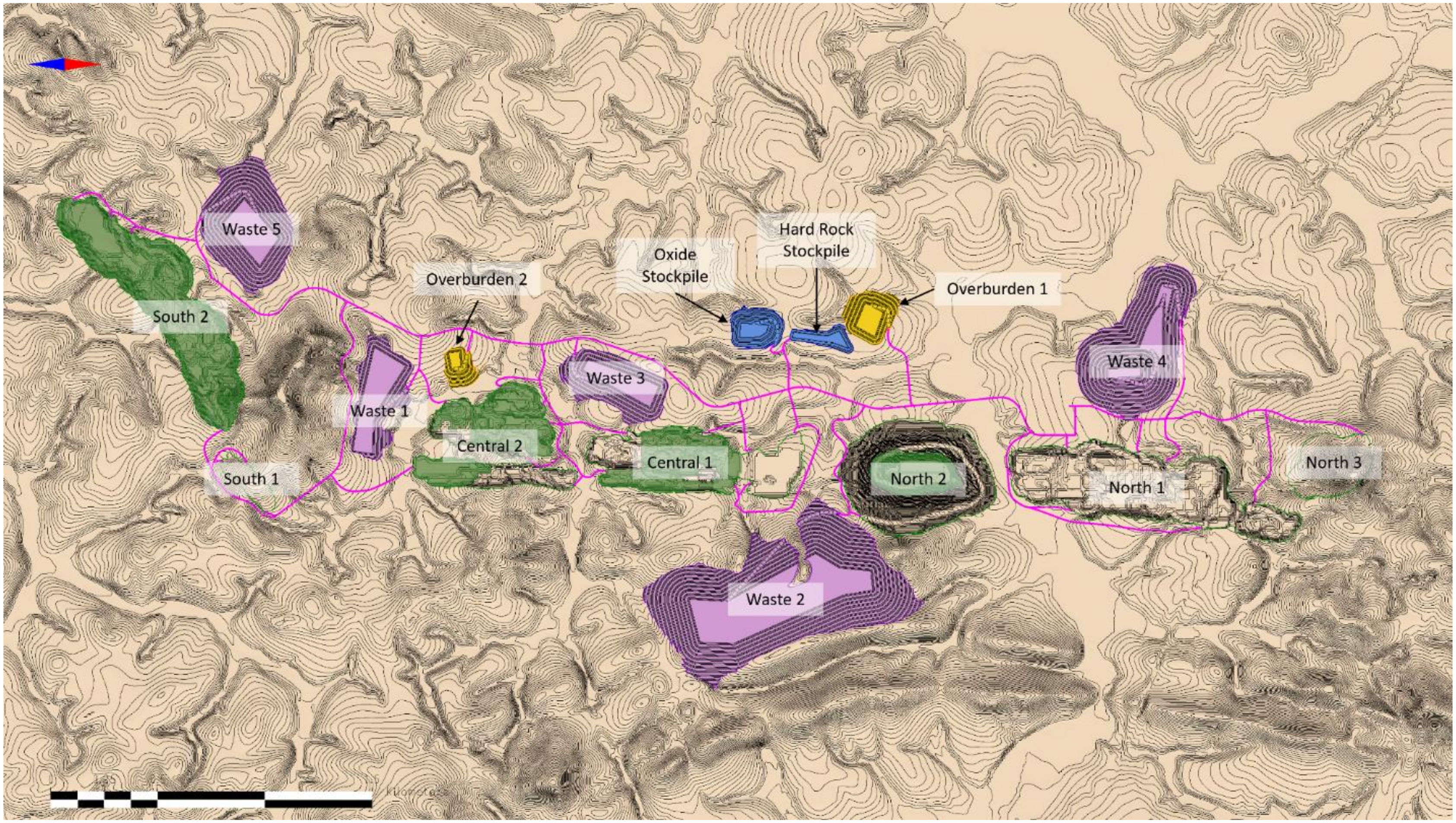
Source: DRA 2023

Figure 16.11 – End of Period Map – Years 6-10



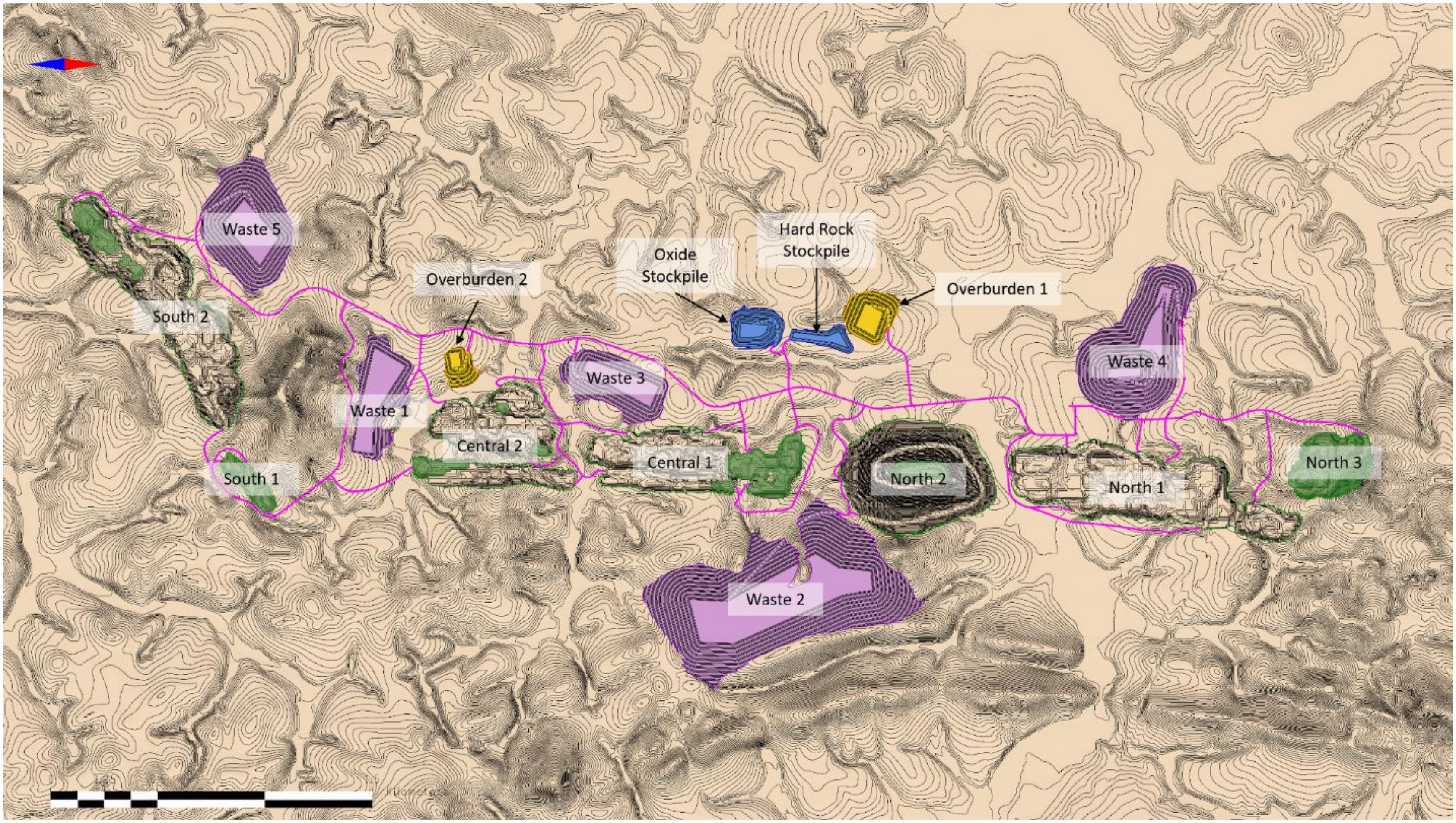
Source: DRA 2023

Figure 16.12 – End of Period Map – Years 11-15



Source: DRA 2023

Figure 16.13 – End of Period Map – Years 16-17



Source: DRA 2023

16.5 Mine Equipment

The following section discusses the fleet requirements to carry out the proposed mine plan. The mine will be operated by a contractor, who will be supplying their own fleet. The mine will operate on two (3) shifts per day, twelve (8) hours per shift, 350 days per year, including weather delays.

16.5.1 Haul Trucks

The contractor estimated their haul truck requirements based on the mine plan detailed in Section 16.4 and the haulage distances listed in Table 16.12.

The contractor has estimate that they will require between 6 and 15 40t articulated haul trucks, depending on the year.

Table 16.12 – Average Haulage distance (km; round-trip)

Source	Destination									
	Mill	Oxide Stock pile	Fresh Rock Stock pile	Over burden 1	Over burden 2	Waste 1	Waste 2	Waste 3	Waste 4	Waste 5
Central 1	3.2	2.0	2.1	2.8	1.9	2.4	3.4	1.7	5.0	3.8
Central 2	3.8	2.6	2.7	3.4	1.4	1.8	4.0	1.4	5.6	3.1
North 1	1.3	2.9	2.9	2.4	4.3	4.7	3.5	3.8	2.8	6.1
North 2	3.9	3.4	3.5	3.4	4.8	5.3	2.7	4.4	5.6	6.7
North 3	2.0	4.0	4.1	3.6	5.4	5.9	4.6	5.0	2.9	7.2
South 1	5.6	4.4	4.4	4.1	2.6	2.6	2.7	3.2	7.3	3.1
South 2	5.9	4.7	4.8	5.5	2.9	2..9	6.1	3.5	7.7	2.2
Oxide Stockpile	2.1									
Fresh Rock Stockpile	2.0									

Notes:
The average haulage distances were determined based on the average of multiple source points within each pit.

Source: DRA, 2023

16.5.2 Loading Equipment

The ore, waste, and overburden material will be loaded onto trucks using excavators with 6.2 m^3 buckets. Two (2) excavators will be necessary to allow for more flexibility in terms of active mining areas; however, the second excavator is not expected to be fully utilized.

Loaders will be used to support the excavators and for the ore stockpile rehandling.

16.5.3 DRILLING AND BLASTING

Production drilling will be carried out using down-the-hole drills. The oxide material will require minimal drilling and blasting; approximately 10% of the material will require it. All fresh rock material will require drilling and blasting. Two (2) drills will be required for the Project to accommodate different mining areas.

The drilling and blasting parameters for the fresh rock material are presented in Table 16.13.

Table 16.13 – Fresh Rock Drilling and Blasting Parameters

Description	Unit	Value
Bench Height	m	10
Subdrilling	m	0.8
Stemming Height	m	3
Blasthole Diameter	mm	127
Spacing	m	4.3
Burden	m	3.7
Explosive Type	-	Emulsion
Powder Factor	-	0.75

Source: DRA, 2023

16.5.4 SUPPORT EQUIPMENT

The contractor will supply their own support equipment, including grazers, dozers, water trucks, fuel & lube truck, maintenance truck, pumps, lights, etc. This equipment will perform tasks such as road maintenance, stockpile maintenance, load face clean-up, etc. The Owner will have its own fleet of pick-up trucks for its personnel. Table 16.14 presents the support equipment requirements for the Project.

Table 16.14 – Support Equipment Requirements

Type	Quantity
Dozer	2
Grader	2
Water Truck	1
Fuel & Lube Truck	1
Service Truck	1
Maintenance Truck	1
Owner Pick Up Trucks	6
Personnel Bus	1

Source: DRA, 2023

16.6 Manpower Requirements

The contractor will supply their own personnel, listed in Table 16.15, for operations and maintenance. The Owner's personnel, listed in Table 16.16, is based on management and supervision as well as geology and engineering requirements throughout the life of mine. Operations and maintenance staff are assumed to be working on a 7 days on/7 days off shift schedule while the Owner staff and supervisory roles are assumed to work on a 5 days on/5 days off schedule.

16.7 Mine Dewatering

Prior to mining activities, a ditch will be established around the perimeter of the pit to intercept water before it infiltrates the pit. Rainwater and groundwater collected in the pit will be collected in an in-pit sump and pumped to a tailings pond at surface.

A ditch system will be established around the footprint of the waste dump and stockpiles. Water collected in these ditches will be directed to tailings ponds. All water that is collected in the ditches and sumps will be sampled prior to discharge into the environment or treated, if required.

Table 16.15 – Contractor Manpower Requirements

Category	Year							
	1	2	3	4	5	6-10	11-15	16-17
Load & Haul	35	33	33	32	29	25	32	13
Ancillary	26	27	27	27	27	23	25	21
Fitters	36	33	33	33	33	32	33	27
Drills	6	6	6	6	6	6	6	6
Management – L&H	8	8	8	8	8	8	8	8
Management – Maintenance	1	1	1	1	1	1	1	1
Management – Support Labour	18	18	18	18	18	18	18	18

Source: DRA, 2023

Table 16.16 – Owner Manpower Requirements

Category	Year							
	1	2	3	4	5	6-10	11-15	16-17
Pit Foreman	1	1	1	1	1	1	1	1
Chief Mining Engineer	1	1	1	1	1	1	1	1
Mining Engineer	2	1	1	1	1	1	1	1
Mine Planner	2	2	2	2	2	2	2	2
Senior Mine Geologist	1	2	2	2	2	2	2	2
Mine Geologist	1	1	1	1	1	1	1	1
Production Geologist	2	1	1	1	1	1	1	1
Grade Control Technician	2	2	2	2	2	2	2	2
Surveyor	2	2	2	2	2	2	2	2
Senior Assayers	1	2	2	2	2	2	2	2
Lab Technicians	2	1	1	1	1	1	1	1

Source: DRA, 2023

17 RECOVERY METHODS

17.1 Processing Plant

The mineral processing plant consists of a crushing area and a concentrator where material beneficiation and concentrate dewatering, screening, and packaging takes place.

The process flowsheet includes crushing, grinding, desliming (for saprolite only), rougher flotation, polishing, and cleaner flotation. The back end of the concentrator includes tailings thickening, concentrate filtration and drying, dry screening and bagging of graphite products, and material handling.

All the tailings from the concentrator will be thickened and pumped to the tailings ponds. Reclaiming water from the tailings ponds has been considered in the process design to minimize freshwater makeup to the concentrator.

The graphite concentrate will be recovered by a conventional flotation process. The plant startup will have a saprolite only feed for approximately nine (9) months. Subsequently, blends with hard rock ranging from 25% to 45% will feed the plant for the remainder of the LOM.

Table 17.1 shows the expected recoveries for different feeds as well as for the LOM. Recoveries for saprolite only are lower than for blends, thus it is advantageous to start feeding blends as soon as possible. A graphite concentrate grade of 95.4% Cg is expected regardless of feed type. A suitable process flowsheet able to handle saprolite as well as blends with fresh rocks has been developed for the feasibility study update. Processing plant equipment have a design factor of 15% above the nominal production rate.

Table 17.1 – Expected Flotation Recoveries

Feed	Graphite Recovery (%)
25-45% Fresh rocks Blend	84.2
100% Saprolite	73.1
LOM	83.6

Source: DRA, 2023

Over the life of the mine, the plant will produce graphite concentrate divided into four (4) standard-size fractions: +48 mesh, -48+80 mesh, -80+100 mesh and -100 mesh.

17.1.1 KEY PROCESS DESIGN CRITERIA

Graphite concentrate quality is measured with flake size and purity. The design of the processing plant will target minimizing the graphite flakes degradation and production of the high-grade graphite concentrate. All nominal throughput rates are based on the production of 92,435 dry metric tonnes of 95.4%Cg concentrate. The average weight recovery for the LOM is 3.6%. The average graphite overall recovery of 83.6% for the LOM is used for the plant design. These figures are based on the applicable results of the test work completed on the blend of hard rock and saprolite as well as saprolite only run-of-mine.

The crushing plant and the concentrator will operate 24 hours per day, seven (7) days per week, 52 weeks per year. The crushing plant will operate at 90% as the mineral sizer selected for that duty has a run-time factor equal to that of the concentrator as per the equipment supplier. The concentrator run-time is 90%, typical for graphite processing facility operations.

Concentrator feed throughput has been established at an average rate of 7,029 dry tonnes per day or a nominal throughput rate of 325.4 dry metric tonnes of material per hour, accounting for a plant availability of 90%.

Table 17.2 summarizes the design basis for the processing plant.

Table 17.2 – Processing Key Design Criteria

Parameter	Units	Value
Total Run-Of-Mine Processing Rate	Dry Tonnes Per Year	2,565,443
Crusher Run Time	Percentage	90
Nominal Crushing Rate	Dry Tonnes Per Hour	325.4
Concentrator Run Time	Percentage	90
Nominal Processing Rate	Dry Tonnes Per Hour	325.4
Nominal Graphite Concentrate Production Rate	Dry Tonnes Per Year	92,435
Final Graphite Concentrate Grade	Percentage	95.4
Overall Graphite Recovery	Percentage	83.6

Source: DRA, 2023

17.1.2 MASS BALANCE AND WATER BALANCE

The process plant mass balance is summarized in Table 17.3, and is based on the key design criteria above and the process flowsheet as depicted in Figure 17.2. Throughput and flow rates in Table 17.3 are shown in metric tonnes per day (t/d) and cubic metres per day (m^3/d) where applicable.

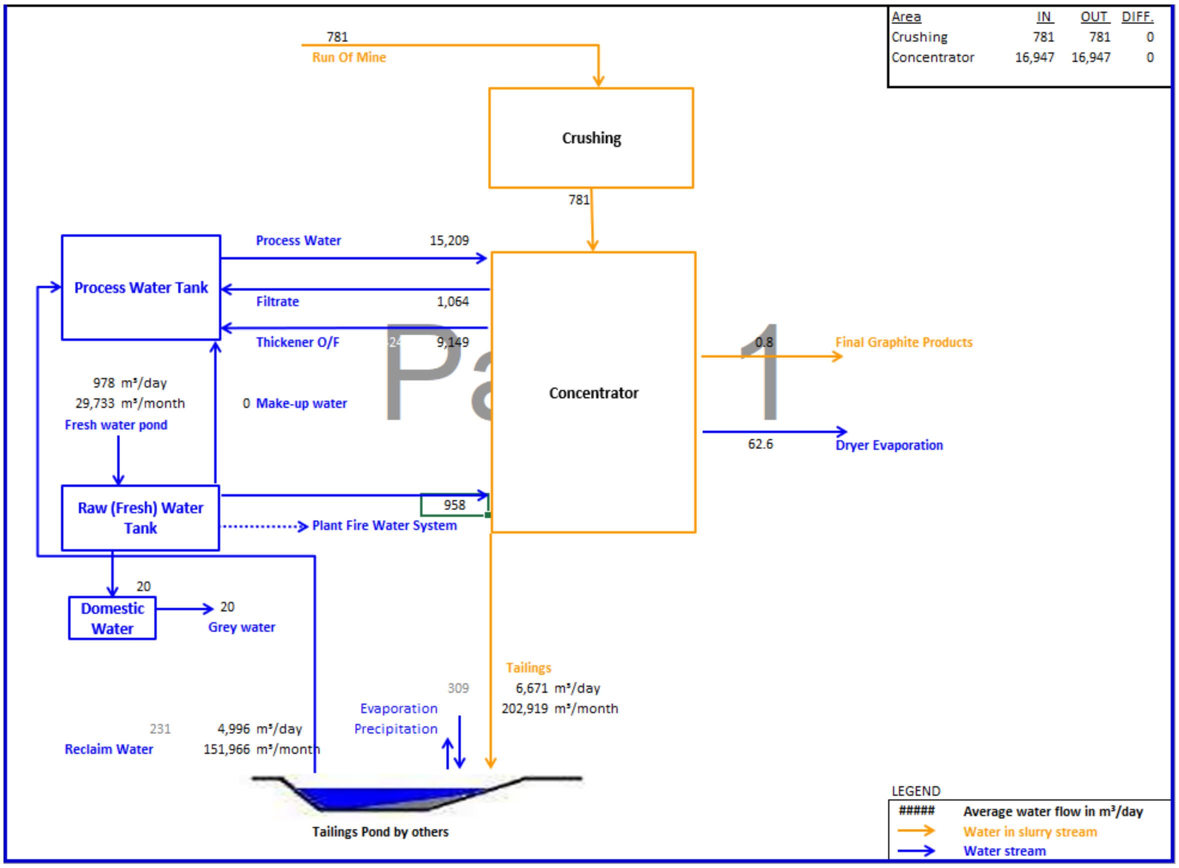
Table 17.3 – Concentrator Mass Balance Summary

Mass Entering Concentrator				Mass Exiting Concentrator			
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)
Material to Concentrator	7,029	781	7,810	Evaporation from dryer	—	63	63
Fresh Water	—	978	978	Grey water	—	20	20
Reclaim Water from Tailings Pond	—	4,996	4,996	Tailings to Tailings pond	6,775.3	6,671	13,447
				Final concentrate	253.3	1	254
Total Entering	**7,029**	**6,755**	**13,784**	**Total Exiting**	**7,029**	**6,755**	**13,784**

Source: DRA, 2023

The water balance summary is shown in Figure 17.1. The tailings pond is not considered as part of the concentrator water system and is only added for illustrative purposes.

Figure 17.1 – Water Balance Summary

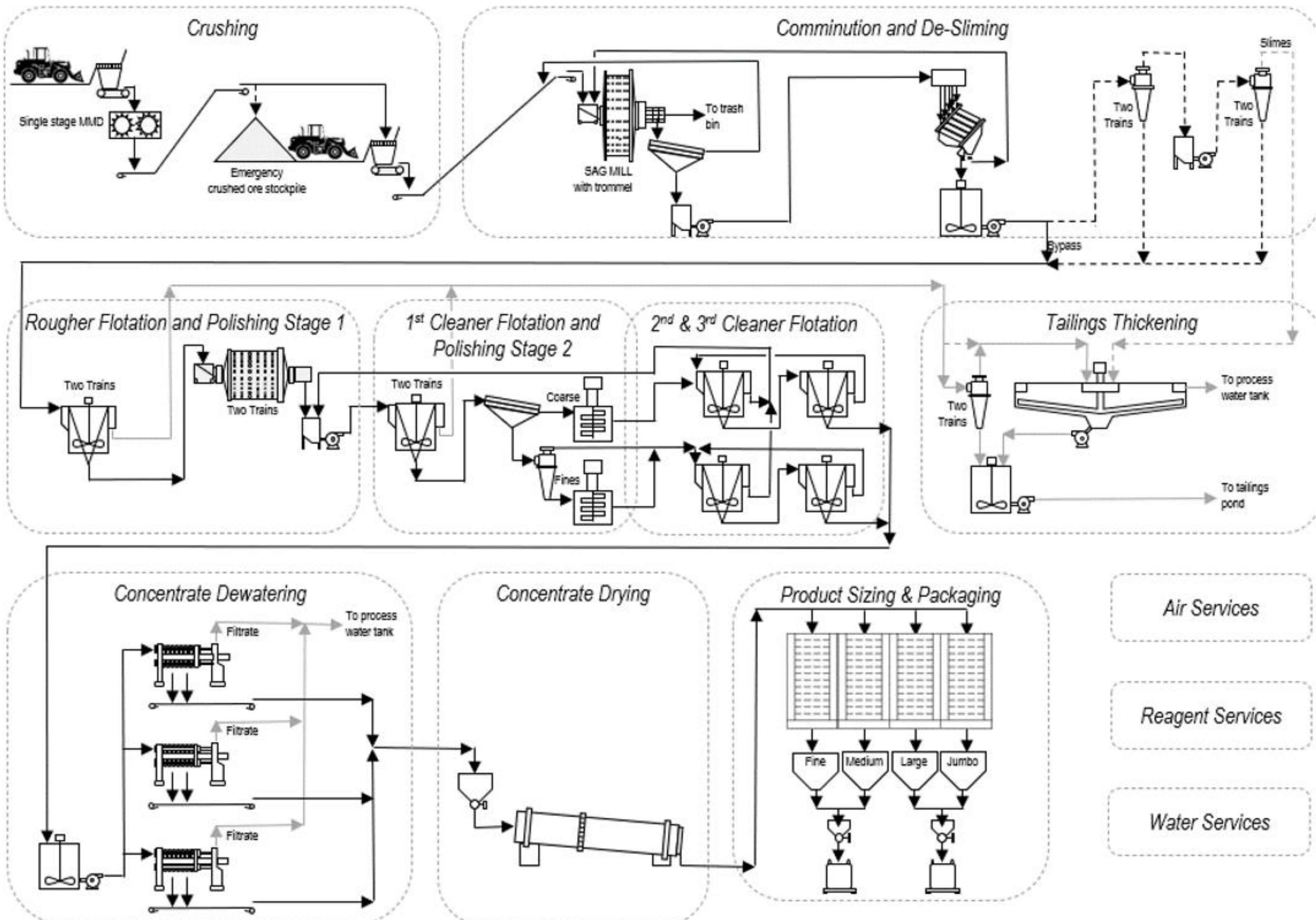


Source: DRA, 2023

17.1.3 Flowsheet and Process Description

A simplified process flowsheet (Figure 17.2) summarizes process flow routings within the major circuits of the processing plant.

Figure 17.2 – Simplified Flowsheet



Source: DRA, 2023

The processing area includes the following major facilities:

- Crushing and emergency crushed ore stockpile that will provide crushed material to the downstream concentrator;
- A concentrator that will include grinding, conventional rougher flotation, polishing, and conventional cleaner flotation;
- A graphite concentrate dewatering area that will consist of filtering and drying; this area will include a concentrate screening as per size specification and bagging as per customer's requirements;
- A tailing dewatering area that will consist of thickening.

The process description by area is described in the following sections.

17.1.4 Crushing and Storage

The Run of Mine (ROM) mineralized material will be deposited directly into a feed hopper using a front-end loader. From the hopper, an apron plate feeder will convey the material to the mineral sizer where it will be crushed by means of rotating toothed rolls reducing the material from a maximum of 24" (600 mm) to 8" (200 mm).

The crushed material from the mineral sizer is then conveyed past a self-cleaning permanent magnet where any tramp steels will be removed. The material will discharge onto a radial stacker. During normal operation, the stacker will discharge directly into the crushed ore hopper. A belt feeder, located under the hopper, will feed the crushed material onto belt conveyors to feed the SAG mill in the concentrator. Another self-cleaning permanent magnet will remove any tramp steel on the first of these conveyors.

When the plant is not operating and the mineral sizer is still operating, the radial stacker will feed an emergency stockpile. Crusher ore can be reclaimed from the emergency stockpile by a front-end loader to feed the plant while the mineral sizer is not operating. The front-end loader will dump material into an emergency hopper which discharges directly onto the first belt conveyor.

17.1.5 Grinding and Desliming

The SAG Mill operates in a closed circuit with a single deck screen to remove pebbles > 13mm. The pebbles are returned via two (2) conveyors to the plant feed conveyor for further grinding in the SAG mill. There is also the option to dump pebbles to an emergency pile if required. Undersize material from the single deck screen is pumped to four (4) multi-deck vibrating screens (three (3) operating and one (1) standby), also in a closed circuit with the SAG mill. The oversize material is returned by gravity to the SAG mill feed chute. The -0.8 mm screen undersize material discharges to a tank. Depending on the plant feed material, the material is directed to one of the two following:

- For a blended feed, the material is pumped directly to rougher flotation; or
- For saprolite only feed, the material is pumped to desliming.

There are two (2) parallel trains of desliming, each with two (2) stages. The first cyclone cluster in each train removes the fine slime particles reporting to the cyclone overflow. The deslimed material in the cyclone underflow will flow by gravity to the rougher flotation circuits for further upgrade. The first stage cyclone overflow is then pumped to the second desliming cyclone clusters. The cyclone overflow from this stage flows by gravity to the tailings thickener. The cyclone underflow from the second stage will flow by gravity to the rougher flotation circuits as well.

17.1.6 Rougher Flotation

There are two (2) parallel rougher flotation trains, each processing half of the material. The rougher flotation circuits recover graphite flakes early in the process to maintain as much of the large flakes as possible and to minimize flake degradation. To aid the flotation process, the reagents used are diesel as a collector and methyl isobutyl carbinol (MIBC) as a frother. The rougher flotation trains each consist of a bank of eight (8) conventional flotation cells of 16 m^3 each, which provides sufficient flotation residence time (sixteen (16) cells total). The rougher concentrate is expected to be approximately of 36% Cg grade. The rougher concentrate from each train is collected and pumped to its own polishing mill. The rougher flotation tailings from each train are pumped to its own tailings thickener guard cyclones cluster as final tailings.

Rougher concentrate cleaning is completed in three (3) stages.

17.1.7 First Polishing Stage and First Cleaner Flotation

Rougher concentrate from each train is fed to one of two (2) first stage polishing mills, which use ceramic media to scrub the graphite flake surfaces of the gangue minerals with a minimal size reduction. The polished rougher concentrate from each mill is combined in a tank. The rougher concentrate is re-split into two (2) trains of first cleaner flotation cells. Each train has a bank of four (4) conventional flotation cells (eight (8) cells total), 10 m^3 each, which provides sufficient residence time for the cleaning. It is expected to upgrade the rougher concentrate up to 83% Cg. The combined first cleaner flotation tailings are pumped to the two (2) rougher tailings pump boxes.

First cleaner concentrate is pumped to a high frequency multi-deck vibrating wet screen. The screen is the same model as the units in the grinding circuit, albeit with a different aperture on the screen decks. The feed is split into the two (2) fractions: one screen oversize coarse fraction (+100 mesh) and another screen undersize fines (-100 mesh).

17.1.8 Second Stage Polishing, Second, and Third Cleaner Flotation

Based on the knowledge of the graphite flotation circuits and applicable testwork results available to date, it is presently understood that the split between the coarse (+100 mesh) and the fine (-100 mesh) fractions for the first cleaner flotation concentrate are expected to be about 50%/50% weight ratio. After the screening, both the screen oversize (+100 mesh) and the undersize (-100 mesh) streams will be upgraded in the parallel polishing and cleaner flotation circuits, each dedicated to the respective size fraction. Each of the screen products will be polished through the second stage dedicated polishing mills to facilitate the graphite liberation. In the case of the screen undersize, the solids in the polishing mill feed will be controlled with the polishing mill dewatering cyclones installed in open cycle with the mill to obtain proper solids density during polishing.

The discharge of each second stage polishing mill is fed to second cleaners of the coarse and fines cleaner circuits, respectively. Second cleaner concentrates are cleaned through the dedicated third cleaners.

The third cleaner concentrate of each circuit (combined grade of 95.4% Cg) is pumped to filtration for dewatering. The tails from the second cleaners are recirculated upstream to the first cleaner flotation, and the tails from the third cleaner are recirculated upstream to the second cleaners feed.

The coarse and the fines second cleaner flotation is performed in the dedicated banks of three (3) conventional flotation cells of 2 m^3 each. Similarly, the third cleaner flotation for the coarse and the fines is performed in the dedicated banks of two (2) conventional flotation cells of 2 m^3 each.

17.1.9 Graphite Concentrate Filtering and Drying

Graphite concentrates from third cleaner flotation banks are pumped to a concentrate holding tank prior to being pumped to pressure filtration. The holding tank allows to de-couple the continuous operation of the flotation cleaners upstream from the pressure filtration downstream, which is a batch process.

The concentrate filtration circuit consists of three (3) vertical plate pressure filters and produces a graphite product filter cake that contains 20% moisture. The concentrate cake is gravity discharged onto dedicated conveyors for each filter which feed a common conveyor. The material is transported to the dryer via a feed hopper and a feed screw conveyor. The filtrate from the filter presses gravitates to a filtrate tank, which overflows to the process water pond.

Concentrate is dried by means of a diesel-fired indirect rotary dryer. The dryer reduces concentrate moisture content down to 0.3 %, which is required for efficient dry screening and packaging.

17.1.10 Graphite Dry Screening and Packaging

Four (4) size fractions will be produced from the graphite concentrate as shown in Table 17.4, from test F32.

After the dryer, dry graphite concentrate is pneumatically transported to a bulk graphite bin. From this bin, graphite is pneumatically transported to two (2) sifter screening systems. Each sifter system consists of eight (8) sections of 27 sizing screens each. The screened fractions discharging from the sifter systems gravitate to the four (4) appropriate dedicated bins.

Table 17.4 – Saprolite Graphite Concentrate Breakdown by Size

Graphite Concentrate Size Fraction	Weight (%)
+ 48 Mesh	13.4
– 48 + 80 Mesh	26.0
– 80 + 100 Mesh	9.0
– 100 Mesh	51.6

Source: DRA, 2023

Packaging of the graphite concentrate will be performed in the graphite bagging circuit. Dry-screened graphite concentrate will be fed from the dedicated bins to a semi-automatic bagging system. Concentrate will be loaded into one (1) tonne bulk bags. All bags are weighed, put on a pallet, and stretch wrapped. Bags can be stored as needed in a storage area prior to being loaded for shipment.

17.1.11 Tailings Dewatering

The flotation final tailings are from rougher flotation and 1st cleaner flotation. The flotation final tailings from each train are pumped to one of two tailings thickener guard cyclones clusters. Cyclones overflow reports to the tailings thickener and the cyclones underflow reports to the tailings disposal tank.

- The 50-m diameter tailings thickener receives the feed from the following streams:
  - De-sliming cyclone overflow when feeding the plant with saprolite only; and
  - Tailings thickener guard cyclone overflow.

These streams are combined in the thickener feed well where the flocculant is added to aid in the settling process. Thickener underflow is pumped to the tailings disposal tank, where it combines with the guard cyclones underflow. Thickener overflow is returned by gravity to the process water pond to be re-used in the plant.

The final tailings from the tailings disposal tank are pumped at 50% weight by weight to the tailings pond.

17.2 Processing Plant – Reagents and Utilities

17.2.1 Concentrator Reagents

17.2.1.1 Diesel

Diesel is used as collector for graphite flotation and as fuel for the diesel-burner rotary dryer. For the collector, there is a dedicated 30 m³ storage tank. For the rotary dryer, there is a dedicated 60 m³ storage tank.

17.2.1.2 Methyl Isobutyl Carbinol (MIBC)

MIBC is used as frother for graphite flotation. It is delivered in Intermediate Bulk Containers (IBC tote) and stored in a dedicated 30 m³ tank.

17.2.1.3 Flocculant

Flocculant is used in the thickener to aid the settling of tailings. A flocculant preparation system will provide the diluted flocculant. Flocculant is to be delivered in 25-kg bags and the total expected flocculant consumption is 15 bags per day.

17.2.2 Concentrator Water Services

The total plant water consumption is based on the concentrator nominal water consumption.

17.2.2.1 Fresh Water

A fresh water settling pond is being considered as the fresh water source for the processing plant. The water will be pumped to a fresh water/fire water tank at a nominal rate of 978 m³/d. Fresh water will be used as gland seal water, for plant utility purposes (not for drinking), for flocculant preparation and for fire protection.

The gland water is pumped from the fresh water/fire water tank and requires a flow rate of 897 m³/d.

Twenty (20) m³/d of fresh water has been allocated for various plant utility purposes.

Sixty-one (61) m³/d of fresh water is required for flocculant preparation system.

Fire water, sourced from the freshwater tank, will be distributed through the plant fire protection system by means of fire pumps and a dedicated fire water distribution network. Under normal circumstances, the flow rate is 0.

17.2.2.2 *Process Water*

Process water is recycled from the overflow of the tailings thickener and the filtrate tank. The balance of the make-up water is reclaimed from the tailings pond to the process water tank at a nominal rate of 4,996 m³/d.

17.2.3 Compressed Air

17.2.3.1 *High Pressure Air*

The concentrator will include two (2) compressors (one (1) operating and one (1) standby) to supply plant air and instrument air of 900 kPag. The system will include a plant air receiver, an air dryer, and an instrument air receiver.

The concentrate filtration circuit will have two (2) air compressor (one (1) operating and one (1) standby) and an air receiver to supply air of 700 kPag.

The concentrate pneumatic conveying circuit will have one (1) dedicated air compressor rated for 690 kPag, an air receiver, and an air dryer.

17.2.3.2 *Low Pressure Air*

Low pressure air for flotation will be produced by four (4) air blowers (two (2) operating and two (2) standby). The first two (2) units will supply air at 23 kPag to the rougher and 1st cleaners' cells. The other two (2) units will supply air at 12 kPag to the 2nd and 3rd cleaner cells.

18 PROJETC INFRASTRUCTURE

The Lola Project consists of both on-site and off-site infrastructure.

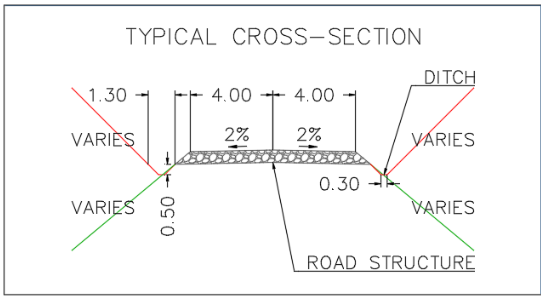
- The on-site infrastructure includes, but not limited to:
  - Site roads;
  - Water supply and distribution;
  - Fuel storage and distribution;
  - Warehouse;
  - Truck shop, maintenance facility, and mining offices;
  - Plant offices and control room;
  - Administrative offices;
  - Change house facilities;
  - Tailings storage facility (TSF);
  - Waste water treatment plant (WTP);
  - Site power generation and distribution; and
  - Telephone and internet communication systems.
- The off-site infrastructure includes but not limited to:
  - Road Lola – Yekepa;
  - Customs office at Bossou; and
  - Road Yekepa – Ganta.

18.1 Roads

18.1.1 Site Access Road

The existing highway N2 connects the town of Lola to Conakry, the capital of Guinea. A new road off highway N2 will be developed to provide access into the site. **Error! Reference source not found.**The access road will be 8 m wide and approximately 600 m long with a total road structure of 450mm (see Figure 18.1).

Figure 18.1 – Site Access Road Typical Cross-section



Source: DRA, 2019

18.1.2 Site Roads

Site and service roads will be six (6) m and eight (8) m wide with a total Road structure of 450 mm, except for mine roads. They will provide access to:

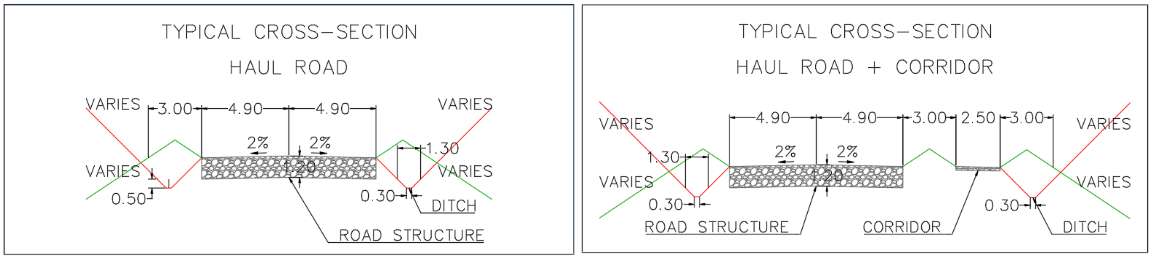
- Process facility from the Plant Terrace towards the main access road and main Haul Road;
- Administration offices, mine offices, and mine garage;
- Product storage warehouse;
- Tailings storage facilities to Main Haul Road; and
- Power plant.

18.1.3 Mine Roads

Provision for a network of 20 km of haulage roads has been made. Mine Haul roads will be 15.8 m wide including berms, and the Main Haul Road will include a pipe corridor for a portion of the length with a 21.3 m width (Figure 18.2). They will provide access to:

- Connection between the North, Central, and South pit exists and the Waste dumps and/or main Haul Road;
- ROM stockpiling area;
- Mineral sizers; and
- Mine truck shop.

Figure 18.2 – Main Haul Road Typical Cross-Sections



Source: DRA, 2019

18.2 Power Supply and Distribution

18.2.1 Power Demand

At full production, the power demand of the Lola Project has been estimated at 10,8 MW based on the estimated connected loads, running loads, and running power. Below table shows the power demand breakdown by sector.

Table 18.1 – Estimated Total Power Demand Consumption

Area	Mechanical Operating Power (kW_{mec})	Power Demand (kW_{elec})
100 Crushing	884	717
200 Comminution and Rougher Flotation	5,725	5,013
300 Polishing and Cleaner Flotation	1,908	1,632
400 Tailings Dewatering	2,626	1,414
500 Graphite Concentrate Dewatering	488	338
600 Graphite Sizing and Bagging	93	79
700 Reagent Systems	58	25
800 Plant Utilities – water and air services	2,388	1,161
Sub-total (Process only)[1]	**14,170**	**10,379**
Garage		100
Mine		40
Administration & Laboratory Buildings		50
Camp (60 people) & cafeteria		80
Lighting (All areas)		70
Power losses: transformers, feeders		93
Total[1]		**10,812**

Area	Mechanical Operating Power (kW_{mec})	Power Demand (kW_{elec})

Note:
[1] The power demand was calculated using an average efficiency factor, load factor and diversity factor

Source: DRA, 2023

18.2.2 Power Plant and Distribution

Electrical power will be provided by a power plant installed at the site and supplying power at 11 kV, 3 phases, 50 Hz. Power shall be generated using five medium-speed (750 rpm) generator sets for a total installed power of 12.5 MW (after consumption of the power plant auxiliaries), with four (4) units in operation and one (1) unit in stand-by. The gensets will run on Heavy Fuel Oil (HFO) but will be capable of running on diesel fuel if required. In addition, the plant will include two (2) "black-start" gensets of 1500 kVA each, running at 1,500 rpm on diesel fuel, providing additional power if two (2) main gensets are down, a situation which should not happen normally. The plant will include its own HFO and diesel storage tanks, heat recovery system, power transformers, control system, and other required auxiliaries.

The main components of the power plant are:

- Five main D/G units;
- Two Black Start D/G unit;
- Power distribution system including b2 1500 kVA transformers;
- Power control system;
- HFO storage and distribution system;
- Lubrification oil storage and treatment unit;
- Compressed air unit;
- Cooling system;
- Heat recovery system;
- Effluent treatment unit;
- Tank farm consisting of 7 HFO tanks and 3 diesel tanks.

The reticulation network is composed of a medium-voltage (MV) 11kV system and a low-voltage (LV) 0.4 kV system. When possible, electrical lines will be above-ground, either supported on poles or installed in cable trays. When above-ground distribution is not possible, cables will be buried in underground duct banks.

MV cables installed in cable trays will feed the process plant. Other services around the plant will be fed using pole supported MV overhead lines.

The 11-kV buried cable network starts at the output feeders of the main 11 kV switchgear at the power plant and runs to the step-down transformers installed in the electrical rooms at the Crusher and Concentrator areas. The 0.4 kV cable network branches off transformers connected to 11-kV pole line and supplies power to the mine buildings, administration offices and cafeteria, and lighting around the mineral sizer.

The 11-kV pole overhead power line also supplies power to remote areas in the site such as the Gate Houses, Administration offices, Camp and Cafeteria, Mine Office, and Mine Dry, Explosive Storage and the pumps from Tailing Storage Facility and Water Return Dam.

18.2.3 Main Electrical Equipment

Five (5) electrical rooms supply power to the plant and facilities as described below:

- 4110-EROOM-01: Power Plant electrical room containing the 11 kV feeders distributing power to the other electricals rooms.
- 4210-EROOM-01- Crushing area electrical room containing two (2) transformers, one of five MVA (11/3.6 kV) feeding the medium voltage SAG MILL VFD and one 2.5 MVA (11/0.4 kV) feeding 4210-MCC-01. It will be equipped with starters and VFDs to control the equipment in this area and different auxiliary services, including automation and lighting.
- 4210-EROOM-02: Flotation electrical room containing three (3) transformers connected to one MV Switchgear (11 kV), two (2) transformers 2.5 MVA (11/0.4 kV) feeding 4210-MCC-02, 4210-MCC-03, 4210-MCC-04, and a third transformer 2.5 MVA (11/3.6 kV) feed Switchgear 4210-SWG-04. This Switchgear feeds the MV VFD for polishing mills #1, #2 and air distribution 1 and 2. All Motor Control Centers (MCC) are equipped with motor starters, VFD and feeder for auxiliary services and lighting.
- 4210-EROOM-03: Tailings and Reclaim Water electrical room with one (1) transformer 2.5 MVA (11/0.4 kV) feeding 4210-MCC-05. This MCC is equipped with motor starters, VFD and feeder for auxiliary services and lighting.
- 4210-EROOM-04: Concentrate electrical room with one (1) transformer 2.5 MVA (11/0.4 kV) feeding 4210-MCC-05. This MCC is equipped with motor starters, VFD and feeder for auxiliary services and lighting.
- Additionally, two (2) overhead power lines (11kV) are deployed from 4110-EROOM-01 to feed different areas outside the process plant as the Mine office, Garage and Fuel station, Gate, Administration Offices, Camp and cafeteria, Explosive Storage, Water Reclaim, Warehouse and Mine Dry. 10 KVA to 250 KVA transformers feed the loads in each location.

All electrical equipment shall be designed, constructed, tested, and installed as per International Electrotechnical Commission (IEC) standards.

18.3 Tailings Storage Facility

After the original BFS was completed in 2019, SRG Mining Inc. (SRG) re-examined the mining production schedule and DRA presented Epoch with an update which led to a decrease in the Life of Mine (LoM) for the same total tailing tonnage stored in the TSFs. Epoch carried out an update to the overall TSF staged capacity and cash flow assessment to accommodate the new LoM, resulting in an amendment to the staged capacity and sustainable capital costs utilized within Sections 8 and 13 of the 2019 TSF BFS report. This is outlined in more detail in Epoch's Memo of 27 March 2023, Optimisation Study to the 2019 Lola Graphite Mine Tailings Storage Facility Bankable Feasibility Study. Considering that the same quantity of tailings is produced over the LoM and that the tailings will be stored in the same facilities, the overall deposition strategy developed in 2019 remains valid, although executed over a shorter time frame. The main implication is that the original TSF sustained capital expenditure occurs over a much shorter time intervals between various and distinct TSF Phases, and in the case of TSF 1 is continuous from one (1) year to the next for all its phases (1 to 3). It is recommended that the current phasing of the construction of TSF 1 and 2 be reassessed/optimised further going forward.

The 2019 design process is based on the following TSF guidelines, and the design criteria are summarized in Table 18.2:

- The CDA Dam Safety Guidelines (2018), and
- The South African National Standards 0286:1998 Code of Practice for Mine Residues (SANS).

Table 18.2 – Design Criteria for the Lola TSF (2019)

Item	Design Criteria	Value
1	Tailings Material	Graphite
2	Design Life of Facility	28.75 years
3	Tailings Deposition Rate	Varies but averages at 1,4 M dry tonnes/annum
4	Total Tailings Tonnage	40.5 million dry tonnes

Source: DRA, 2019Two (2) mineralogical ore types are to be mined, namely saprolite (soft ore) and fresh rock ore. Only the geochemical and geotechnical characterization of the soft ore and saprolite tailings has been received with the fresh rock tailings to be assessed at a later date.

The 2019 geochemical assessment of the saprolite tailings has been carried out under the supervision of Bishop-Brogen Associates, Inc. (BBA), the geochemical, water management and closure lead consultants, and indicated that:

- The composite tailings sample showed a 0.55% sulfide content.
- Static leaching tests showed a potential of leaching for copper, zinc, and manganese.
- Kinetic tests showed significant concentrations of copper, zinc, nickel, and manganese in the initial leachate (week #0). However, concentrations of copper, zinc, and nickel were significantly lower in the leachates collected from week #1 to week #30. Manganese showed an increase in concentrations from week #0 to week #30. With one (1) exception, pHs remain between 5.55 and 6.00 for the first 30 weeks. It should be noted that in the context of the 2023 study, material will be processed roughly twice as fast.
- Considering that the contents of environmentally sensitive metals (copper, nickel, zinc, etc.) in the ore and the tailings of the Lola deposit are low (close or below average content of surficial earth crust), metals leaching from the tailings should not be a potential issue for the respect of IFC/World Bank recommendations for mining effluents (there are no manganese recommendation for manganese).
- Control of pH level could be required for respect of IFC/World Bank recommendation (pH>6). Limited addition of lime in the tailings sedimentation pond or in the tailings box could be required to reach pH recommendation.
- Processing of fresh rock ore could raise the pH and decrease metals concentrations of TSF effluent.

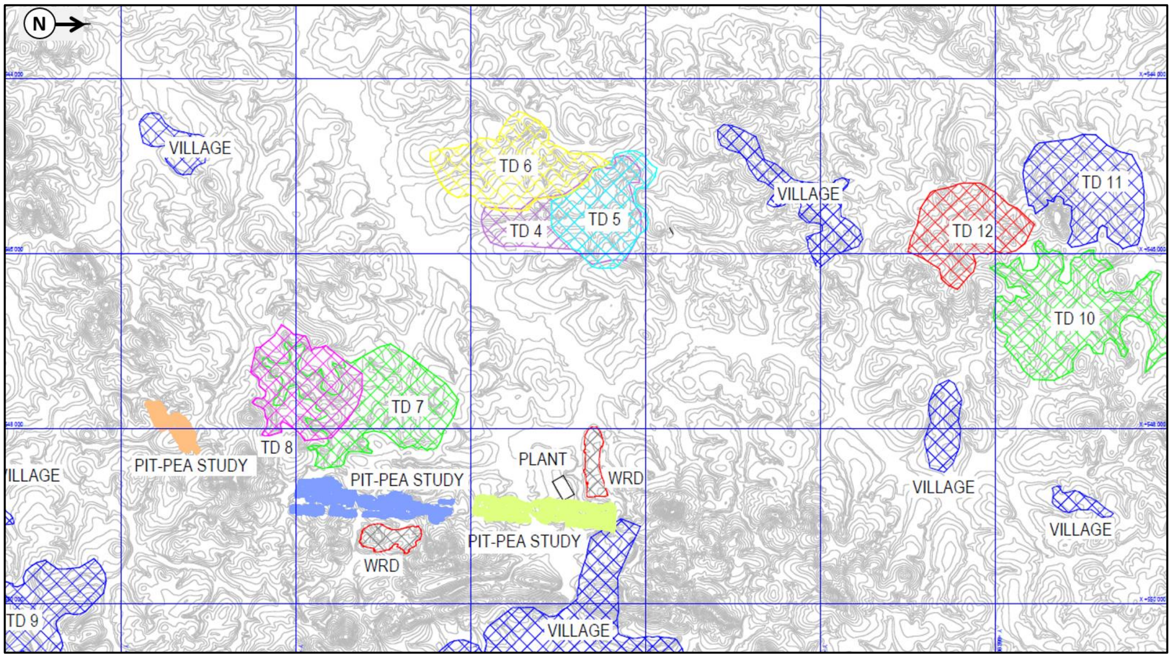
BBA has recommended that no liner is required for the TSF, based on the results of the geochemical assessment of the saprolite tailings. Their recommendation will be confirmed on completion of the kinetic testing of the saprolite tailings and the assessment of the fresh rock tailings, together with an assessment of the receiving water quality.

Within the current mine boundary tenement, 12 potential TSF sites were identified for consideration and assessed based on:

- An initial design storage capacity of 21 million dry tonnes of tailings (this was subsequently changed to 40.5 million dry tonnes of tailings later during the design process and post the TSF site selection).
- Full containment and a self-raising depositional method; and
- Various topographical, social, financial, and other technical factors.

These 12 potential TSF sites are shown in Figure 18.3.

Figure 18.3 – Final Sites Selected for Comparison (2019)



Source: DRA, 2023

The preferred site for the development of the TSF was selected based on:

- Its proximity to the plant, thereby minimizing the pumping distances and pumping head associated with slurry deposition pipeline and return water lines.
- There being no villages near the selected site.
- Its proximity to the pit, plant, and other mining infrastructure, which minimizes the mining footprint and impact on the environment.
- It being one of the more cost-effective sites to develop and operate; and
- Its capacity to accommodate increases in the tailings storage or deposition rate associated with changes to the LoM.

The final TSF site selected was revised from a singular Tailings Dam (TD) site option to a two (2) TD and in-pit deposition option based on the updating of the mine resource and subsequent revising of the tailings storage to 40.5 million dry tonnes.

A geotechnical site investigation of the selected TSF footprints was undertaken comprising 70 test pits. Typical soils encountered include a 0.5 m thick topsoil layer below which a 1 m thick transported horizon occurs in the form of a stiff, clayey sand. This is underlain by a thin gravel horizon separating it from the soils below, which have weathered in-situ from gneiss. These are typically clayey sands, occasionally silt or clayey silt, and extend to the bottom of the test pits. In the low-lying marsh areas, the soils encountered comprise clays and sand clay mixtures of alluvial origin and are underlain by residual gneiss.

The TSF at Lola comprises:

- Two (2) separate, but adjacent unlined, full containment valley TDs.
- Associated TD infrastructure includes slurry delivery/distribution pipeline, catchment paddocks, toe drain system, curtain drain system, solution trench, collection sumps and manholes, seepage cut-off trench, storm water diversion trenches, emergency spillways and access roads.
- In-pit deposition of the North Pit #2 consisting of a 3m high perimeter embankment wall, a slurry delivery/distribution pipeline, and an emergency spillway.
- Floating barges to decant supernatant tailings slurry water and storm water from the various facilities back to the plant or discharged, post settlement of the suspended solids, via settlement ponds.

The two (2) adjacent full containment TDs (referred to as TSF 1 & 2) as well as the perimeter embankment wall surrounding North Pit #2 are to be constructed in phases over the LoM as initial and ongoing sustained CAPEX.

Table 18.3 to Table 18.5 summarize the key MRDF layout parameters for TSF 1, TSF 2, and North Pit 2.

Table 18.3 – Key Parameters Associated with the Lola TSF 1 (2019)

Tailings Dam Parameter	Phase 1	Phase 2	Phase 3
Total Footprint Area of the TD within embankment wall and tailings (Ha)	35.7	51.9	70.00
Maximum Design Embankment Wall Elevation (m.a.m.s.l)	479.0	483.5	488.0
Maximum Design Embankment Wall Height (m)	23	28	33
Outer Side Slope of Embankment Wall	1V:3H		
Inner Side Slope of Embankment Wall	1V:2H		
Embankment Wall Crest Width (m)	6	6	6
Embankment Wall Material	Sourced soft borrow material	Soft Saprolite Open Pit Overburden material	
Time Period for Tailings to Reach the Embankment Wall Height (years)	2.8	5.2	7.7
Year in LoM Timeline for Tailings to Reach the Embankment Wall Height	2.8	5.2	7.7

Tailings Dam Parameter	Phase 1	Phase 2	Phase 3
Cumulative Tonnes of Dry Tailings Stored in TD (Mt)	3.5	6.9	10.2
Cumulative Tonnes of Dry Tailings Stored in total MRDF (Mt)	3.5	6.9	10.2

Source: DRA, 2019

Table 18.4 – Key Parameters Associated with the Lola TSF 2 (2019)

Tailings Dam Parameter	Phase 1	Phase 2	Phase 3
Total Footprint Area of the TD within embankment wall and tailings (Ha)	61.8	96.1	137.9
Maximum Design Embankment Wall Elevation (m.a.m.s.l)	472	478	482.5
Maximum Design Embankment Wall Height (m)	25	31	35.5
Outer Side Slope of Embankment Wall	1V:3H		
Inner Side Slope of Embankment Wall	1V:2H		
Embankment Wall Crest Width (m)	6	6	6
Embankment Wall Material	Soft Saprolite Open Pit Overburden material		
Time Period for Tailings to Reach the Embankment Wall Height (years)	4.3	8.3	11.4
Year in LoM Timeline for Tailings to Reach the Embankment Wall Height	12.0	16.0	19.1
Cumulative Tonnes of Dry Tailings Stored in TD (Mt)	5.8	11.3	15.7
Cumulative Tonnes of Dry Tailings Stored in total MRDF (Mt)	16.0	21.5	26.0

Source: DRA, 2019

Table 18.5 – Key Parameters Associated with the Lola North Pit 2 (2019)

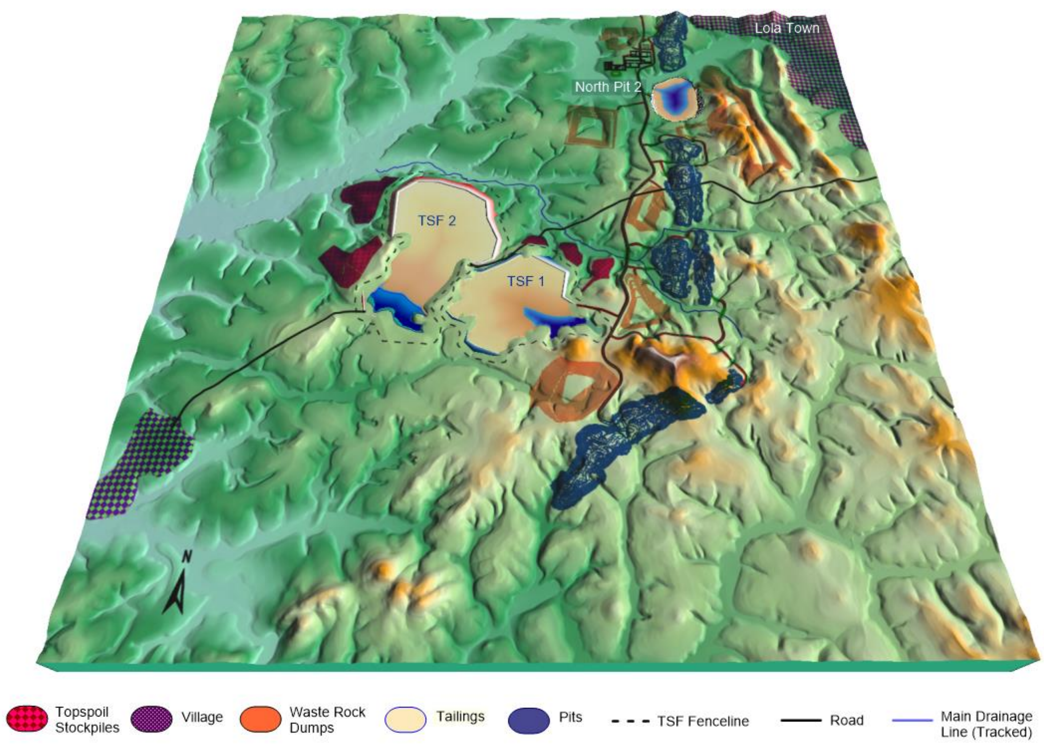
In-pit Deposition Facility Parameter	Value
Total Footprint Area of the TD within embankment wall and tailings (Ha)	26.60
Maximum Design Embankment Wall Elevation (m.a.m.s.l)	454
Maximum Design Embankment Wall Height (m)	3
Outer Side Slope of Embankment Wall	1V:3H
Inner Side Slope of Embankment Wall	1V:3H
Embankment Wall Crest Width (m)	6
Embankment Wall Material	Soft Saprolite Open Pit Overburden material
Time Period for Tailings to Reach the Embankment Wall Height (years)	9.7

In-pit Deposition Facility Parameter	Value
Year in LoM Timeline for Tailings to Reach the Embankment Wall Height	28.75
Cumulative Tonnes of Dry Tailings Stored in pit (Mt)	14.5
Cumulative Tonnes of Dry Tailings Stored in total MRDF (Mt)	40.5

Source: DRA, 2019

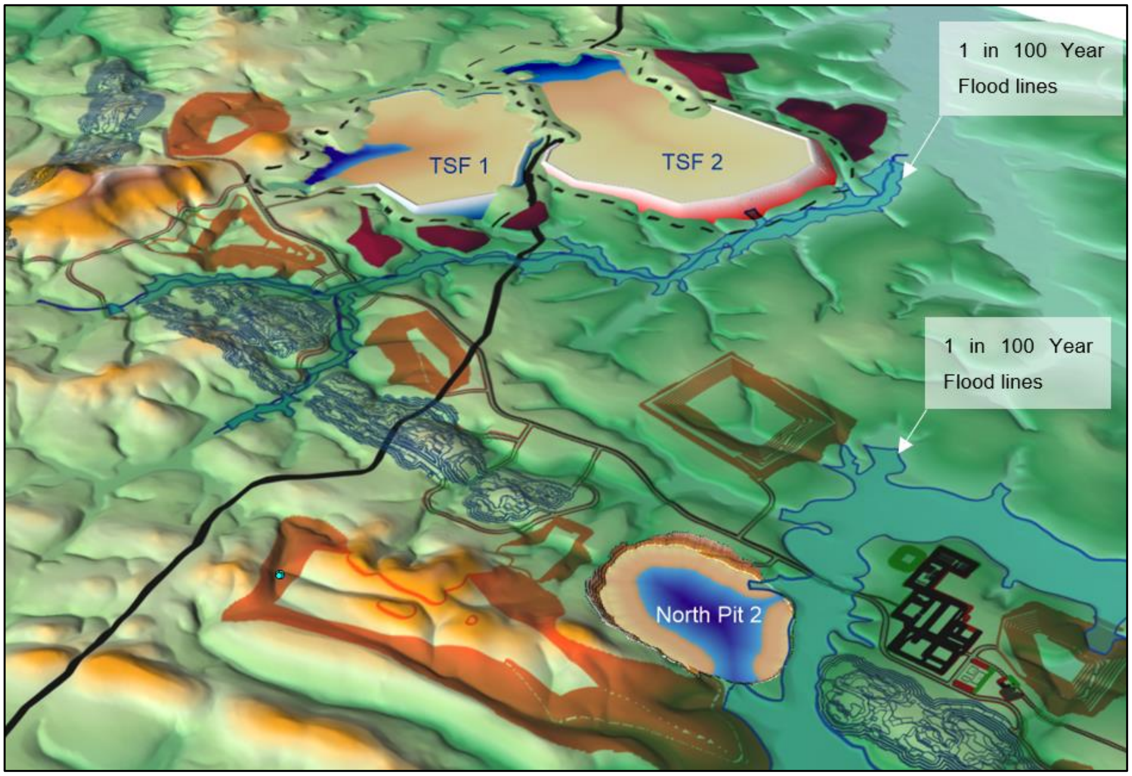
Figure 18.4 displays the general layout of TSF 1, TSF 2 and North Pit 2 within the mining site. Figure 18.5 shows a close up with 1:100-year flood lines and the covered Balemou Road.

Figure 18.4 – General Arrangement of the Lola Mine Site (2019)



Source: DRA, 2019

Figure 18.5 – General Arrangement of the Lola MRDF Site Close Up (2019)



Source: DRA, 2019

The preliminary high-level classification and zone of influence of the TSFs' have been carried out in accordance with the CDA Dam Safety Guidelines and the South African National Standard 0286:1998 Code of Practice for Mine Residues (SANS). Various failure scenarios were considered to determine the overall zone of influence delineation, achieved by the overlapping of the various breach scenarios. The zone of influence extent falls short of the mining pits and waste rock dumps and does not include any villages. Based on the assessment criteria outlined in the guidelines, the TSFs are, however, considered to be High Hazard Facilities, due to their potential impact at failure on adjacent public road infrastructure and the surrounding environment.

Seepage and slope stability analysis were conducted on the TSFs using the material parameters determined from the geotechnical investigation of the in-situ materials and the soft ore saprolite tailings. It is assumed that the hard rock tailings have similar geotechnical characteristics to that of the soft ore saprolite tailings. The slope stability factors meet, or are greater than, the prescribed values under normal, upset and seismic conditions, namely 1.5, 1.3 & 1.0 respectively.

A TSF deterministic monthly water balance has been developed in EXCEL, based on average normal year monthly, wettest year monthly, driest year monthly rainfall and evaporation figures, and simulates the flow of water between the various TSFs and plant over the LoM. The outcomes of the balance indicate that:

- The TSF water balance is a water positive balance resulting in the need to treat (suspended solids) and discharge water into the downstream environment anywhere between 2 and 8 months of the year, based on climatic variation and the stage of LoM.

18.4 Site Security and Gate House

A gate house measuring 100 m^2 will be located at the main entrance to the site and includes security access and offices. In addition, the process plant will be fenced using security fence. The pits and waste dumps will use cattle fences.

18.5 Camp Site Accommodations

As the Lola site will be located adjacent to the town of Lola, only a small operations camp has been planned for expatriate and out-of-town employees. Additional accommodations, if required, will be provided through the rental of villas in the towns of Lola and N'Zérékoré.

The camp facility includes a combination of single and double bed units for a total of 60 employees. Kitchen, dining, and recreational facilities have also been allowed.

18.6 Site Buildings

Infrastructure buildings have been designed as brickwork structures combined with steel and cladding where required.

18.6.1 Administrative Office, Dry-Change Facilities & Cafeteria

An administrative office building located southwest of the plant and measuring 756 m^2 will include a combination of single and open plan office spaces, boardrooms, storerooms, filing rooms, and washrooms.

A change house building measuring 220 m^2 has been sized to accommodate the process plant and mining crews.

A kitchen and dining building measuring 360 m^2 will be located close to the administration offices and will accommodate both process plant and mining crews.

18.6.2 Plant Offices

Plant offices and a control room measuring 190 m^2 will be located inside the concentrate filtering and drying facility.

18.6.3 Assay and Metallurgical Laboratory

An assay and metallurgical laboratory were constructed in 2018. The building is located East of North Pit #1 and it is accessible through Highway N2. The laboratory measures 264 m^2 and includes office space, assay and metallurgical laboratories, storage for samples and other associated facilities.

18.6.4 Product Warehouse

A warehouse structure of 1,500 m^2 for product storage will be located in front of the graphite bagging area. This warehouse will be able to store 1,408 bags of graphite product, equivalent to approximately 6 days of production.

18.7 Site Services

Provision has been made in the project for the following site services:

- Mine dewatering system and provision for pumping system towards plant;
- Fresh water intake system for the mill fresh water and fire protection water tank;
- Reclaim water system from the tailings storage facilities;
- Domestic water treatment;
- Sewage waste treatment; and
- Fuel storage tanks and a fuel dispensing station are provided adjacent to the power generation area.

18.8 Control System

18.8.1 Automation Process network

The Lola Process Control System (PCS) will be based on a redundant Ethernet backbone network in a ring-type topology. The network will link all the main automation equipment, such as Supervisory Control and Data Acquisition (SCADA) system, Historian, Human Machine Interface (HMI) and Process Control System processor.

The proposed network includes fibre optic linking of the following main areas of the Lola plant:

- Central Control Room
- 4110-EROOM-01 Electrical Room of the Power Plant;
- 4210-EROOM-01 Electrical Room for Crushing Area;
- 4210-EROOM-02 Electrical Room for Concentrator Area;

- 4210-EROOM-03 Electrical Room for Concentrator Area);
- 4210-EROOM-04 Electrical Room for Concentrator Area;
- Administration Office;
- Camp and Cafeteria;
- Mine Office;
- Concentrator Laboratory;
- Settling Water Pond;
- Tailing Pump Station.

Network automation communication services are:

- SCADA stations located in the central control room and in the field;
- Process Control System processors inter-communication;
- PCS/Remote Input/Output (I/O) communication;
- PCS direct interface to the Motor Control Centers (MCCs);
- IEC61850 interface to the power distribution equipment;
- Field device communication including communication with Third Party Programmable Logic Controller (PLC) supplied with mechanical equipment;
- Camera system installed in the plant for process control viewing purposes;
- Camera system installed in the plant for security purposes;
- IP phone system for plant site.

18.8.2 Process Control System

The process control system will be of PLC type. A PCS system will be supplied to control strategic areas of the plant with remote I/O racks located generally in the Electrical Rooms.

The main processors will control the following sectors: Crushing, concentrator (all areas), and remote loads connected to the 11-kV pole line.

Major equipment like the SAG mill could come with their own PLC and with a Local Control Panel.

The 400 V MCC’s should be equipped with an ″intelligent″ protection relay able to communicate.

The protection relays shall be equipped with Ethernet ports.

A local control station shall be installed near each motor.

The central SCADA system will have the capacity to control and supervise all remote PCS equipment. If a communication outage occurs, critical equipment will be controlled locally.

18.8.3 Wiring and Junction Boxes

All the field instruments and switches will be wired to the PCS through junction boxes up to remote I/O racks situated in the various electrical rooms.

The wiring system will include field junction boxes for instrument power supply as well as for digital and analog signals.

Motor thermistor signals will be wired directly to the related motor protection relays while equipment RTD signals will be connected directly to the PCS remote I/Os.

The junction boxes will be located and installed in all process areas of the plant. The junction boxes will be wired to the PCS I/O racks via multi-conductor cables.

18.8.4 SCADA

The SCADA system will be based on client/server technology and will include:

- Two (2) SCADA servers for redundancy;
- One (1) historian server;
- Two (2) HMI operator stations;
- One (1) engineering station;
- Five (5) thin client for each EROOM

18.8.5 SCADA and PLC Power Sources

In case of plant power outage, the PCS, switches, main servers, phone system, and security systems will be fed by Uninterruptible Power Supply (UPS). UPS status will be monitored.

18.8.6 Redundancy

For the automation network, the redundant ring topology design insure a second route in case of a communication outage on one (1) segment.

18.8.7 Process Analog Instruments

Traditional 4-20 mA loop cabling with enabled HART protocol will be used as base solution. Where available/requested, process analog instruments will support Modbus TCP/IP protocol and will be wired using industrial ethernet cables or wiring recommended by the equipment vendor till the connection point to the process communication network

18.8.8 Camera System

A camera system, with recorder and a viewer, will be installed in the main gate office. Aside from the gate cameras, other cameras will be installed in the plant for process control purposes. One (1) viewing station will be installed in each control room for process control purposes.

18.9 Lola Communication System (Local & External)

18.9.1 Telecommunications Local System

The telecommunications system will be based on Ethernet links throughout the plant buildings and administrative buildings following generally the electrical reticulation network (buried and/or installed on the pole lines).

18.9.2 Telecommunications and Mobile Radio Systems

The telecom service includes the tower located in a high elevation zone of the plant. It will be supplied by a Third-Party provider, and it will communicate with the Lola plant communication interface.

The telecom system will include:

- IP phones;
- Mobile Radio System Fire detection system;
- Access control system (gate, door).

The mobile radio system will be provided for the construction phase and the operation of the mine and plant site.

18.9.3 Telecommunication Services

The site will be connected to a local Internet Service Provider (ISP).

The back system will use a cellular modem or satellite technology.

The IP phone system will be connected to an internal private branch exchange (PBX).

18.9.4 Telecommunications Distribution

During the construction phase, all communication services, such as Internet and phone, will be distributed via Wi-Fi, Wimax and Microwave point-to-point radios to reach all areas of the plant site.

All mine trucks and pick-ups will be equipped with a Wimax/Wi-Fi antenna that shall also act as a Wi-Fi local access point.

The telecommunication distribution will be through the plant's fiber optic network covering the crushing and concentrator areas, Administration Office, Camp and Cafeteria, and Mine Office.

If necessary, wireless communication will be provided for other auxiliary buildings outside of the plant area.

18.10 Off-Site Facilities

18.10.1 Logistics

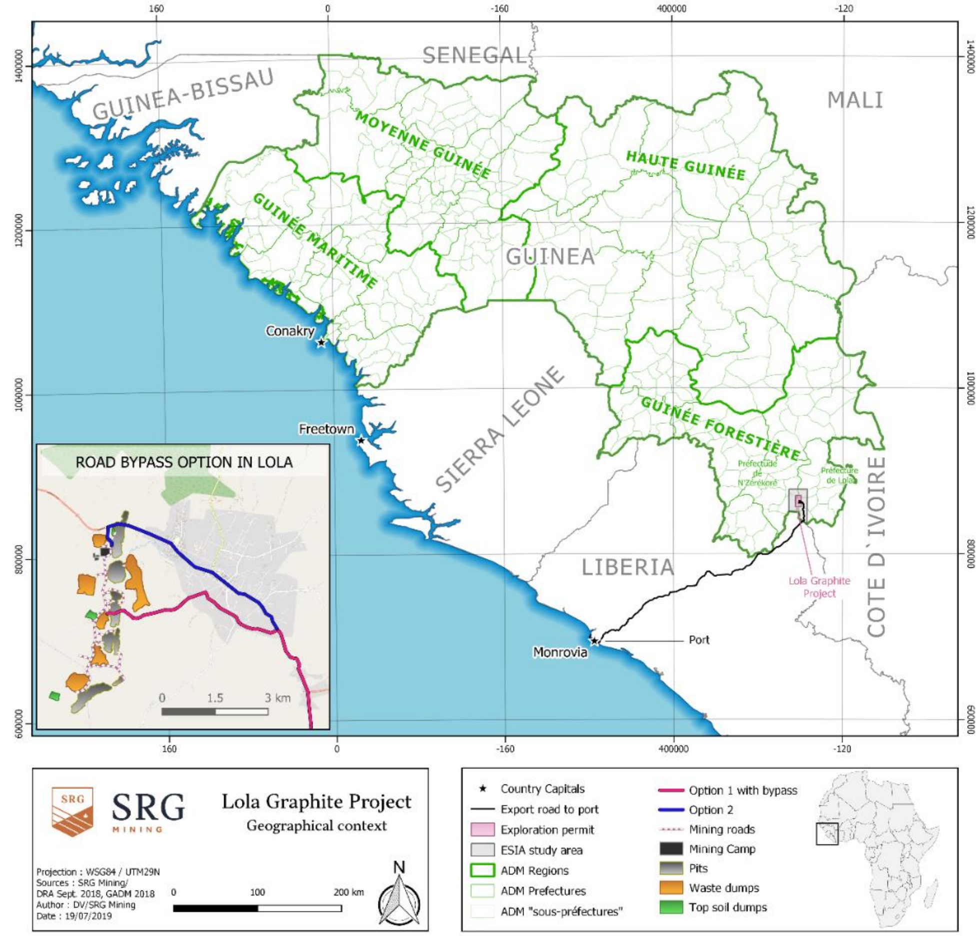
The Lola Graphite Project aims to produce approximately 94,000 tonnes of natural graphite flakes per year. To deliver the graphite to its diverse international client base, SRG will have to export its production continuously, quickly and at a low cost to remain competitive.

An assessment including reconnaissance and cost-benefit analysis was carried out by SRG to determine the best shipping route. The port of Monrovia, in Liberia, was selected ahead of Conakry (Guinea), Buchanan (Liberia) and San Pedro (Cote d'Ivoire). The roads are better, the travel time is considerably shorter, and the port terminal has all the necessary facilities and lower traffic.

18.10.1.1 Route

SRG has chosen the Lola-Monrovia route due to its short distance (368 km), 2-lane paved asphalt road, and low elevation gradients. Figure 18.6 shows the route to be used.

Figure 18.6 – Lola-Monrovia Supply Route



The reconnaissance tour done by SRG noted the following:

- Lola – Yekepa: 30-km road running from Lola to Yekepa, in Liberia. Most of this portion is done in Guinean territory. This road remains unimproved, and will require road grading and installation of ditches. An allowance for upgrading the Lola – Yekepa road and building a by-pass around the town of Lola has been made in the Project.
- Yekepa – Ganta: 71-km road in Liberia running between the towns of Yekepa and Ganta. There is significant roadbed rebuild currently underway by the Liberian government. The new road will include new culverts and all-weather surfacing. An allowance for building a bypass around Ganta has been made.
- Ganta – Monrovia: 267-km road in Liberia running between Ganta and Monrovia.

18.10.1.2 *Truck Fleet*

Tractor trucks pulling a train of two trailers - each carrying 40 tonnes - will be used to transport the 1-tonne bagged graphite from Lola to the port of Monrovia. The trucks will travel by day, leaving in the morning from Lola and arriving before sunset in Monrovia. They will return the next day to Lola, either empty, or carrying deliveries to the Project.

The bags will be protected from the elements by tarpaulin covers secured against the side of the trailer.

An active fleet of 8 road trains (tractor and 2 trailers) will be utilized, 6 days per week, with a daily capacity of 320 tonnes. In total, a fleet of 10 trucks will be required, accounting for 2 units in maintenance at all time. Support vehicles will include escort pick-ups (10), telehandlers (2) and all-purpose trucks (2).

Trailers will be standard semi's produced by Somerset trailer Company of Pittsburgh, linked together by trailer dollies. Kenworth C500 tractors, built in the USA by Paccar are preferred because of their proven sturdiness and reliability.

The vehicles will be licenced in Liberia to benefit from the ECOWAS transit regime in Guinea.

19 MARKET STUDIES AND CONTRACTS

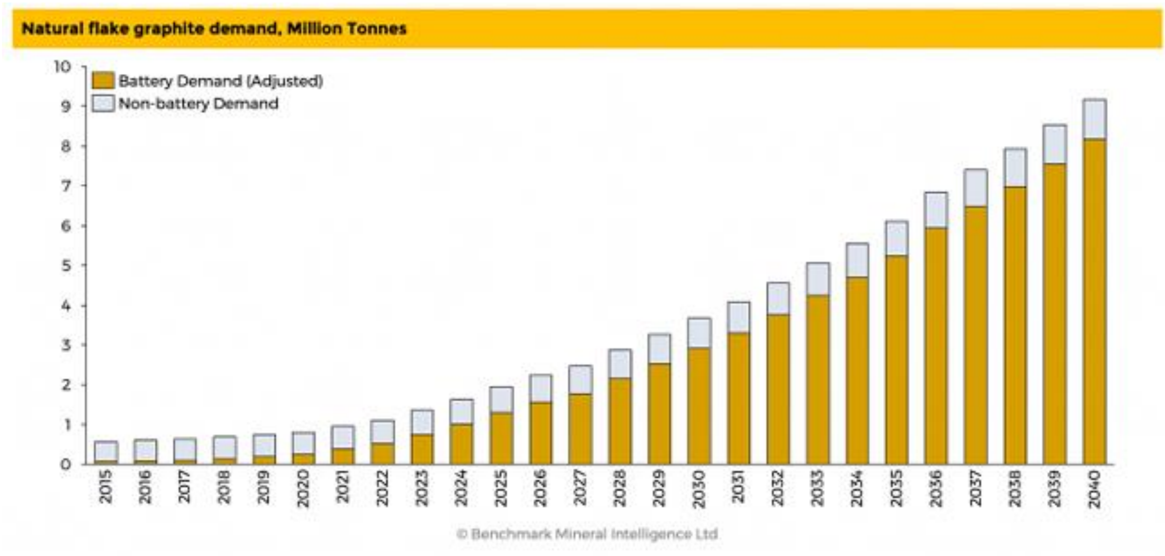
The information included in this section is extracted from a report by Benchmark Mineral Intelligence (BMI) titled "SRG Mining Graphite Lenders Market Report" dated November 30, 2022. The report was commissioned by SRG specifically for the Lola Graphite project.

19.1 Graphite Demand

Renewable Lithium-ion batteries, which are dominating the landscape for low-carbon technology applications, offer exponential demand growth potential as industries seek electric transformation. Across all categories, battery cell demand is forecast to significantly rise from current levels by a factor 4.5x to 2.7TWh by 2030 and 12.5x to 7.5TWh by 2040. Driven predominantly (~90%) by the transportations segment, technology and performance trends will be defined by roadmaps and consumer requirements from broad electric vehicles. While historic enhancements in battery cell performance have been influenced largely by cathode studies, targeting improved energy density and therefore range, consumers are prioritising fast charging convenience and cost competitiveness. These considerations are impacting the design and consumption for battery cell components, including anode active materials. Anode designs consider a blend of forms of carbonic graphite with additives to target enhanced specific capacity, including silicon, mesocarbon microbeads (MCMB) and lithium titanate (LTO). Most of the demand (>90% by 2030) from the active anode market is defined by the ratio between synthetic anode powder (manufactured via the graphitisation of petroleum coke or met coke) and natural anode powder (sourced via mining and refining). Benchmark forecast strong growth across all active anode materials, climbing from current levels by a factor 12x to 7.86Mt by 2040. The relative role of natural graphite materials is also expected to increase across the anode market, rising from 35% currently to 50% by 2030, to represent the dominant component within anode manufacturing, therefore creating significant and sustained demand for additional global natural flake supply.

Figure 19.1 below illustrates the demand growth for battery and no-battery applications.

Figure 19.1 – Demand for Graphite



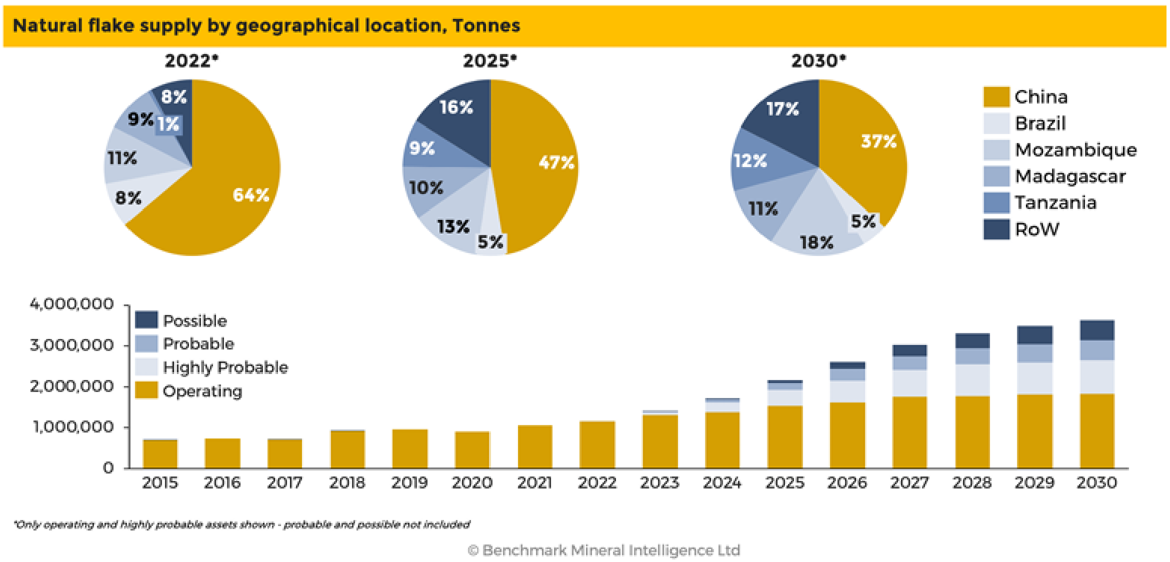
19.2 Graphite Supply

The current supply landscape is categorised with major geopolitical concentration of flake concentrate manufacture in China, representing 64% availability. However, during 2019 the region transformed into a net importer of flake supply, and combined with diminishing resource quality and output, will experience a shrinking market share to 37% by 2030. Supplementing the regional production, rapidly expanding resource development across Africa will govern the future graphite industry; predominantly Mozambique, Tanzania, and Madagascar with 18%, 12% and 11% share respectively.

Exploring the distribution of supply on a global basis, the market is characterised by Chinese dominance, responsible for almost two-thirds cumulative production. However domestic Chinese extraction is typically represented by low-grade ore (therefore high cost), with slowly falling resource quality, which limits the long-term potential of regional supply. With the introduction of additional ex-China greenfield production, the relative market share of China is forecast to fall to 37% by the end of the decade. Additionally, the role of Brazilian supply is expected to reduce over time. Despite absolute volumes almost doubling to 2030, rising to 151ktpa, the market share will fall from 8% to 5%. Most new supply is forecast to originate from the African continent, with cumulative supply rising by a factor of 7x from current output of 247ktpa to 1.67Mtpa by 2030. This increasing supply will be driven principally from the east-African deposits originating from Mozambique, Tanzania, and Madagascar – representing 18%, 12% and 11% respectively.

Figure 19.2 below shows the forecasted geographical distribution of natural flake graphite.

Figure 19.2 – World Graphite Forecasted Supply by Country of Origin

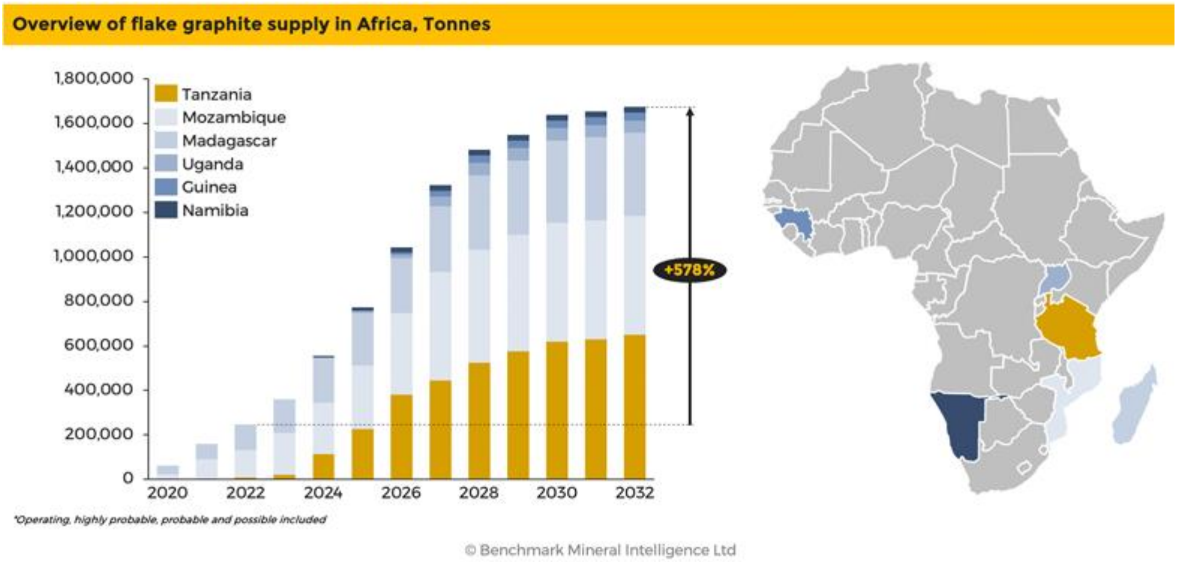


The growth of ex-Chinese production is forecast to be explosive, with cumulative output rising from 434ktpa in 2022 to 2.67Mtpa by 2030 – over 600% increase. Most of the growth will originate from Africa, with 56% new output from the continent, while Canadian and Australian projects have the potential to rise to 12% and 11% incremental supply respectively.

Africa has emerged as the new low-cost hub for natural flake graphite production, promising diversity of supply which has been historically controlled by China. Small-scale flake graphite projects have operated across Zimbabwe and Madagascar, with the latter recently becoming an area of significant graphite development, particularly for companies targeting large-flake supply. Syrah Resources' Balama project in Mozambique began production in 2017 and following a shutdown due to the low pricing environment, is currently ramping capacity back up. Neighbouring Tanzania also hosts several burgeoning graphite prospects, which are expected to play a major role in global supply by the mid-2020s. Ultimately the region has the potential to rapidly grow output by almost 600%, with a high concentration of resource development across the East African graphite belt with additional supply from Guinea and Namibia.

Figure 19.3 below shows the forecasted export of graphite flake from African origin.

Figure 19.3 – African Supply Forecast by Country



19.3 Graphite Prices

Graphite pricing is generally determined by flake size and purity. Jumbo and large flake sizes attract a price premium and are required for expandable applications, refractories, steel, and metallurgy markets. Smaller flakes are used in many different applications such as friction products, pencils, lubricants, linings, and battery applications.

Lola's graphite concentrate selling price was determined based on the BMI report, comparable concentrate prices from recent projects and information available in the public domain.

The LOM average sale price used in the economic evaluation was established at $1,400 USD/tonne based on the size fraction expected to be produced by the Lola project. This average price was estimated by factoring in the purity of the expected graphite concentrate and size fractions obtained during the metallurgical test work campaign detailed in Section 13 of this Report. The concentrate price was calculated as the weighted average of the sale price of each size fraction for given purity.

Table 19.1 summarizes the Lola's graphite concentrate pricing per size fraction.

Section 22 of the current Report includes a sensitivity analysis of the NPV and IRR against the selling price of the concentrate.

Table 19.1 – Graphite Concentrate Pricing per Size Fraction for Lola Project

Size Fraction	LOM Expected Distribution (%)	Price ($ USD/tonne)
+48 mesh	13.4	1,992
+80 mesh	26.0	1,750
+100 mesh	9.0	1,400
- 100 mesh	51.6	1,070
Weighted Average	**100.0**	**1,400**

Source: DRA, 2023

19.4 Contracts

No contracts have been established to date by SRG at the time this Report was published, but discussions are ongoing with potential clients worldwide with a strong focus on the Chinese manufacturing market. The Company has not hedged, nor committed any of its production pursuant to an off-take agreement.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

The information presented in this Section is, for the most part, translated and summarized from the report entitled "*Étude d'impact environnemental et social Projet de Graphite Lola*" by EEM Environmental & Social Impact Ltd. (EEM), issued on February 8, 2019, and referred to as the Environmental and Social Impact Assessment (ESIA) in the current Report.

Regulations applicable to impact assessments in Guinea are set out in the Code for the Protection and Development of the Environment (Ordinance No. 045/PRG/87 of May 28, 1987, as amended by Ordinance No. 022/PRG/89 of March 10, 1989, on the Code of Protection and Enhancement of the Environment), also known as the Environment Code. The Environment Code establishes fundamental legal principles to ensure the protection of environmental resources and the human environment. Article 82 of Title V of the Environment Code requires proponents of projects likely to have a significant impact on the environment to carry out an environmental impact assessment and submit it to the Minister Delegate for Environment, Water and Forests before beginning the project. This assessment must enable the Minister Delegate to assess the project's direct and indirect impacts on the ecological balance of Guinea's environment, on the quality of life of residents and on the protection of the environment.

Presidential Decree D/2014/014/PRG/SGG covers the adoption of a directive to perform an environmental and social impact assessment of mining operations. The directive is intended for companies, organizations and individuals who hold or wish to obtain mineral and quarry titles. It informs the proponent of the nature and scope of the environmental impact assessment and defines the principles for conducting ESIAs of mining projects up until the minister responsible for the environment grants the necessary environmental authorization.

This directive, intended to be a reference document for all mining projects, is organized into four main parts: types of mining operations, general criteria for the environmental and social impact assessment of mining projects, and the procedure for and content of environmental and social impact assessments of mining projects.

The integration of sustainable development objectives and the consideration of community concerns, from the outset to the end of the project, are presented as a goal to be achieved for responsible mining.

The two (2) main required licences for a mining permit in Guinea are: "Certificate of environmental conformity" and the "mining permit".

- SRG obtained its environmental certificate from the *Bureau guinéen d'étude et d'évolution environnementale* (BGEEE) in March 2019.

- SRG applied for its mining license in April 2019 and its application is currently under review by the S*ervice national de coordination des projets miniers* (SNCPM).

20.1 Stakeholder Consultations

The approach adopted by SRG and its consultants, GES and SIMPA, for stakeholder consultations on the Lola Project's environmental and social impact assessment (ESIA) is in line with the Guinean directive to perform an environmental and social impact assessment of mining operations, as described in Decree D/2014/014/PRG/SGG on the adoption of a directive to perform an environmental and social impact assessment of mining operations.

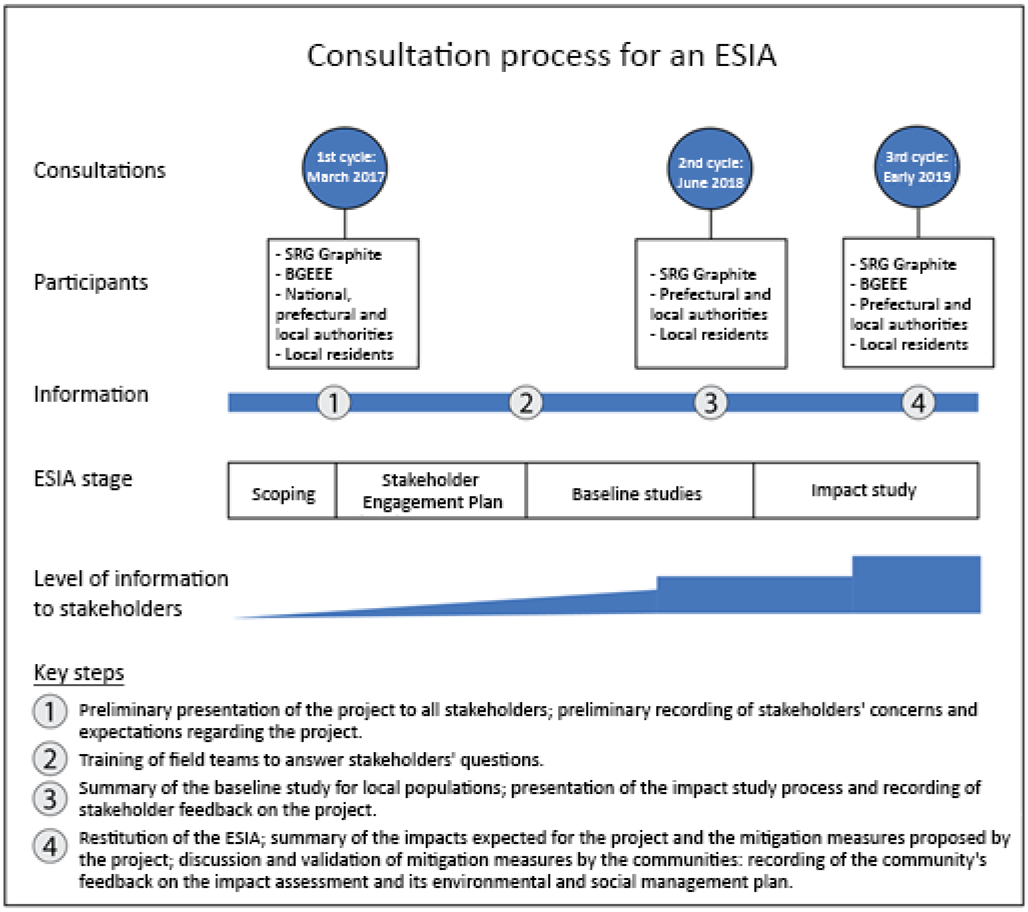
SRG's Stakeholder Engagement Plan (SEP), shared with EEM as part of the ESIA, summarizes existing stakeholder engagement efforts and those planned for the Project's upcoming phases. As described in the SEP, identification of the Project's stakeholders is originally based on the scoping survey conducted in March 2017, jointly by GES and SIMPA with the *Bureau guinéen d'études et d'évaluation environnementale* (BGEEE), and then on the baseline socioeconomic study and public consultations conducted in June 2018 by SIMPA as part of the ESIA.

The principles of public consultation are as follows:

- They are preceded by institutional consultations in order to prepare for public consultations and to inform the authorities;
- They are based on documents containing objective information;
- They are open to all;
- They are aimed at populations affected by the Project, in particular, where applicable, people to be relocated as well as host populations;
- Where appropriate, there should be a gap between consultations with the populations to be relocated and host populations. Expectations of people to be relocated should be shared with host populations;
- The consultations are organized in two (2) cycles:
  - The first is about reciprocal information;
  - The second is for presenting measures and collecting opinions, once the draft ESIA report has been submitted to the BGEEE for validation.

Figure 20.1 summarizes the consultations to date and how they fit within the public consultation process that informs the ESIA.

Figure 20.1 – Consultation Process for the Lola Project ESIA



Source: DRA, 2019

20.2 Summary of Public Consultations

The results show that almost all respondents are in favour of the Lola Project in their communities and are willing to transfer land ownership while respecting forthcoming commitments and protecting their interests. The results also indicate that respondents who own farmland have doubts as a result of negative experiences with some companies that have set up in the area and across the country in the past.

According to the respondents, implementing this Project must create employment for young people and open up their communities, as there is a notable lack of certain basic social services such as health, transportation, water and electrical services, and infrastructure. Throughout the public and individual consultations, specific requests were made for the construction of access roads, access to a potable water supply and employment in local communities.

20.3 Landscape, Soil and Water Resource Study

20.3.1 Baseline Study

The study deals with the following main topics:

- Physiography;
- Geology;
- Soil;
- Climate;
- Hydrology;
- Hydrogeology;
- Surface and groundwater quality.

20.3.1.1 Field Surveys

The following study reports were available at the time of writing of the ESIA:

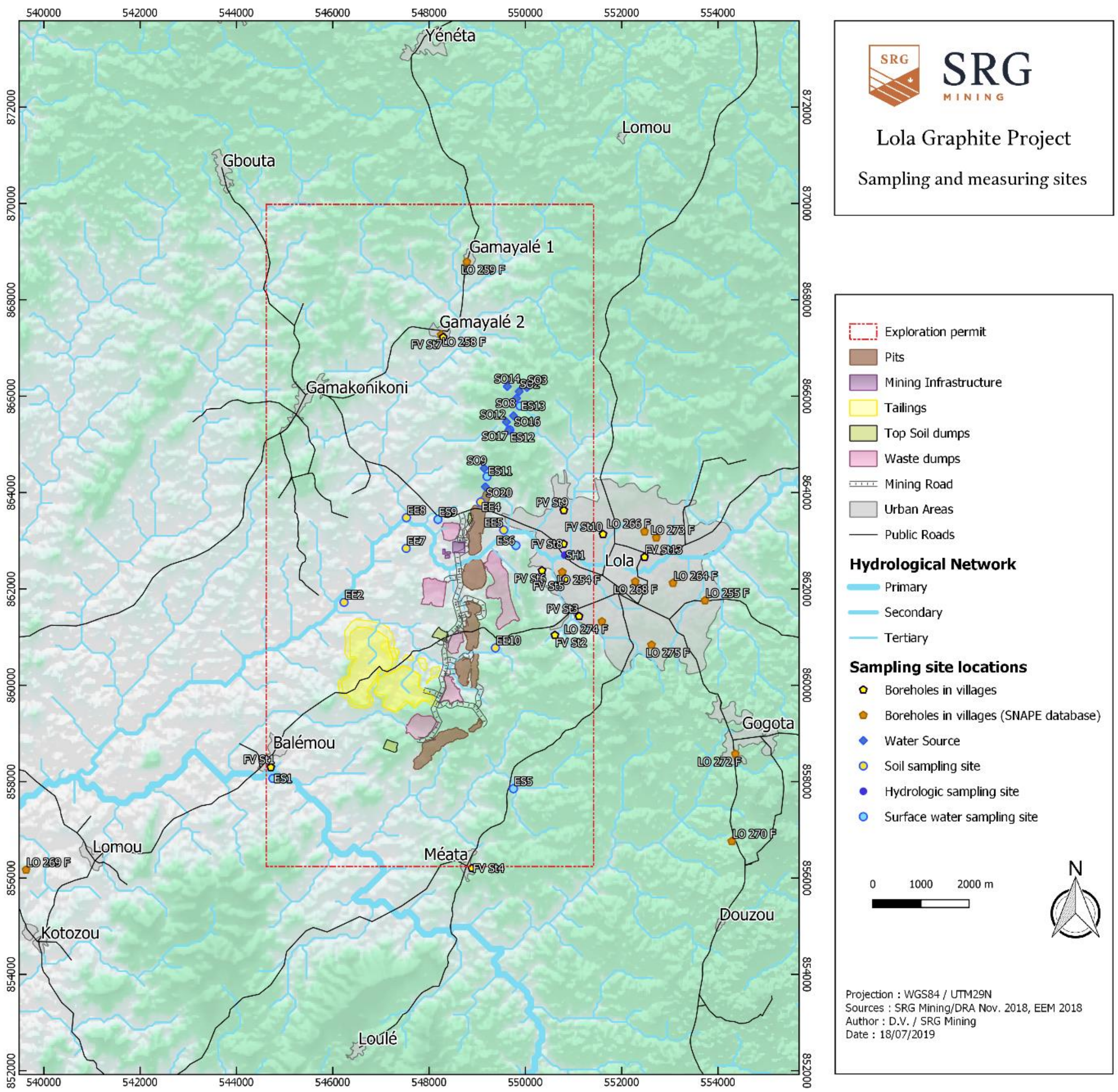
- Meteorology/climatology (SIMPA);
- Surface and groundwater quality (SIMPA);
- Hydrogeology (preliminary version, DRA).

The locations of surface water, groundwater, and soil sampling stations as well as of water measurement stations and boreholes relevant to the study are shown in Figure 20.2.

As a result of a variogram analysis, the following field surveys and laboratory tests were recommended by EEM and completed or begun in 2018 or planned for 2019 directly by SRG or through consultants:

- Meteorology: a weather station was installed at the mining camp.
- Hydrology: hydrological monitoring of stations on the Tighen stream and some small streams began in October 2018 and will continue during the dry season to assess low water flows.
- Groundwater: samples will be collected from the mining camp water supply wells and possibly from other boreholes at the mine site.
- Surveying: the drilling sites used in the hydrogeological study were surveyed to obtain precise elevations.
- Water balance: study was ongoing at the time of ESIA.
- Static and kinetic residue tests: assessments of acid generation risks were initiated in late 2018 and are ongoing through 2019.

Figure 20.2 – Locations of Drilling, Sampling and Measuring Sites



20.3.2 Assessment of the Main Impacts on Landscape, Soil and Water Resources

20.3.2.1 Landscape

The various types of mining infrastructure will impact the visual environment because of the modification of the landscapes that are familiar to the local population. In particular, EEM identified:

- Pits that will be dug at an extended plateau covered with a sparse forest. North pit #1 will be visible from the road between N'Zérékoré and Lola. The road between Balemou and Lola passes through the center of Central pit #1, which will be visible to locals. These pits will then be filled with rainwater and groundwater. Entrances to pits must be secured to prevent access.
- Waste rock dumps will change the land's natural topography. Dump 1 may be visible from the road between N'Zérékoré and Lola. Dump 2 may be visible from the west side of Lola.
- The tailings facility will be built in two phases on either side of the road between Balemou and Lola and will therefore be visible to road users.

20.3.2.2 Geology and Soil

There are four (4) types of impacts on soil and overburden to consider:

- Topsoil stripping at new mining sites and on mining roads;
- Burying of soil under tailings and waste rock;
- Soil erosion at new mining sites and mining roads;
- Unintended pollution related to accidental spills from equipment or leaking fuel tanks, which are considered technological risks.

20.3.2.3 Surface and Groundwater

The sources of impact on surface and groundwater are:

- Physical modification of the water system and reduced flow of waterways resulting from partial destruction of waterways;
- Reduced flow of waterways resulting from the drying of springs (resurfacing groundwater) near pits;
- Reduced flow of waterways resulting from dewatering (draining) pits;
- Modification of surface water quality (SWQ) resulting from soil erosion at the industrial production site and elsewhere;
- Modification of surface water quality (SWQ) resulting from drain water from waste rock dumps and the tailings facility;
- Groundwater contamination resulting from an accidental spill of petroleum products (fuel, hydraulic oil, lubricants) on the ground;
- Decrease in groundwater levels in village wells and boreholes because of dewatering pits.

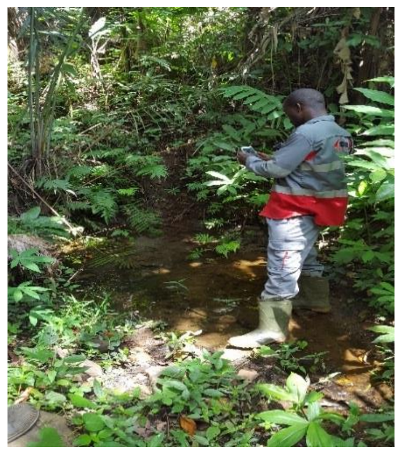
Figure 20.3 presents hydrogeological features in the Project area.

Figure 20.3 – Hydrological Features in the Project Area

1. Tighen stream that crosses the deposit and flows from the site to the Mano River.

2. “Bas-fonds” crossed by the Tiéta stream.

3. Kpaya Spring (seasonal).



4. Haraya Spring (perennial).

Source: DRA, 2019

Figure 20.4 –Traditional Well and Modern Borehole

Traditional well, Tighen-mo 1

Modern borehole, Tighen-mo 2

Source: DRA, 2019

Figure 20.5 – Vegetation Cover in the Project Area

Forest Galleries in the Project Site Area

Forest islets

Shrub savanna

Source: DRA, 2019

20.3.2.4 *Summary of the Impact Assessment*

Impacts on landscape, soil and water resources are presented in Table 20.1, Table 20.2, and Table 20.3 below. The main prevention and reduction measures are also summarized in the tables.

Table 20.1 – Summary of Impacts on Landscape, Mitigation Measures and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Landscape - pits		x	x	The pits will be dug where there are currently plateaus/ridges covered with sparse forest. Upon closure, they will be flooded, creating artificial lakes. Some pits will be visible from the N'Zérékoné-Lola and Bamelou-Lola roads.	High	The pits' surroundings will have to be reforested to act as a visual screen. They will also have to be secured.	Mitigation	High
Landscape - waste rock dumps	x	x		Waste rock dumps will alter the land's natural topography. Dump 1 may be visible from the road between N'Zérékoré and Lola. Dump 2 may be visible from the west side of Lola.	Medium	Maintain the vegetation north of Dump 1 and Dump 2 if possible, and improve it as needed. Recover the stripped soil, place it on the dumps as covering material and revegetate.	Rehabilitation	Medium
Landscape - tailings facility	x	x	x	The tailings facility will be built in two phases on either side of road between Balemou and Lola and will therefore be visible to road users.	High	Preserve the existing vegetation as much as possible on either side of the road. Recover the stripped soil, place it on the tailings facility as covering material and revegetate.	Rehabilitation	Medium
Landscape - industrial site	x	x	x	The plant site will include several buildings (some of which will be tall), tanks, etc. These structures will have a visual impact.	Medium	Maintain a visual screen of trees around the site. Dismantle buildings and other infrastructure at closure; reforest.	Mitigation/ rehabilitation	Low

Source: DRA, 2019

Table 20.2 – Summary of Impacts on Landscape, Mitigation Measures and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Soil and overburden - ecological environment	x			Excavation and stripping of soils in preparation for future pit sites as well as the industrial site (buildings, plants, offices, parking lots, garages, tanks, etc.) and for mining roads	High	Recover the stripped soil, store it near the disturbed site and use it at closure as a covering material to facilitate revegetation	Rehabilitation	Medium
Soil and overburden - ecological environment	x	x		Soil burial when filling low-lying wetlands at tailings facility sites and waste rock dumps	High	Recover the stripped soil, store it near the disturbed site and use it at closure as a covering material to facilitate revegetation	Rehabilitation	Medium
Soil and overburden - erosion	x	x	x	Erosion of bare soils by heavy rains and incidentally by wind	High	Vegetate bare soil quickly; build drainage ditches around the various types of infrastructure with a settling basin, and build settling ponds on either side of mining roads ahead of waterway crossings	Mitigation	Low
Soil and overburden - quality	x	x	x	Risk of spills or accidental releases of petroleum products such as oils, lubricants and hydrocarbons (gasoline, diesel) following mechanical breakdowns (hoses, pipes, etc.)	Medium	Procedures for the rapid recovery of hydrocarbons and contaminated soils; staff training; preventive maintenance of equipment	Rehabilitation	Low
Soil and overburden - quality	x	x	x	Risk of accidental spills or releases of petroleum products following the breaking of a tank (tank area and service station)	High	Equipment verification procedures; containment dikes around the tank area; procedures for the rapid recovery of hydrocarbons and contaminated soils; staff training	Rehabilitation	Low
Soil and overburden - quality	x	x	x	Risk of accidental spills or releases or human errors of petroleum products during mechanical maintenance and fueling of vehicles and other machinery (at the garage or the worksite).	Low	Field procedures, monitoring and control, waste oil and fuel management; staff training; procedures for rapid recovery of hydrocarbons and contaminated soils	Prevention/rehabilitation	Low
Soil and overburden - quality			x	Risk of accidental spills or releases of petroleum products during the dismantling of structures.	Low	Control of construction work; procedures for the rapid recovery of hydrocarbons and contaminated soils	Rehabilitation	Low

Source: DRA, 2019

Table 20.3 – Summary of Impacts on Water Resources, Mitigation Measures and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Integrity of the water system		x	x	Destruction of the heads of small waterways as waste rock dumps 1 and 6 are formed	Low	Arrange the dumps so that the overflowing water is poured into the initial waterway, while limiting the concentration of suspended solids	Mitigation	Low
Integrity of the water system		x	x	Destruction of a small tributary of the Gnahya River through the development of the tailings facility	Low	Arrange the tailings facility so that the overflowing water is poured into the initial waterway, and pour all drained water in it upon closure, while limiting the concentration of suspended solids	Mitigation	Low
Sources around the deposit, near future pits		x	x	Desiccation of sources located around the deposit	Medium	No possible mitigation measures		Medium
Sources north and south of the deposit, a few hundred metres from the pits		x		Reduction in flow up to and including temporary desiccation of sources located along the deposit, but away from the pits	Low	Set up one or more water distribution points to compensate users	Compensation	Low
Flow in small waterways adjacent to pits		x		Significant decrease in flow rates due to dewatering of pits (duration of dewatering)	Low	No possible mitigation measures, impact is time-limited		Low
Flow in large waterways such as the Tighen stream		x	x	Decrease in flows that can go, in the case of very small watercourses, as far as temporary desiccation (duration of dewatering)	Low	No possible mitigation measures, impact is time-limited		Low
Surface water quality (SS)		x	x	Erosion of bare soils by heavy rains and incidentally by wind could carry soil to waterways and increase concentrations of suspended solids	High	Vegetate bare soil quickly; build drainage ditches around the infrastructure with settling basin	Mitigation	Medium
Surface water quality (SS)		x	x	Drainage water from waste rock dumps and/or the tailings facility could be loaded with suspended solids and thus affect receiving waterways; also risk of dam failure	High	Adequate sizing of infrastructure (geotechnical, etc.) and settling tanks to control SS	Mitigation	High
Groundwater quality - accidental spills	x	x	x	Risk of spills or accidental releases of petroleum products such as oils, lubricants and hydrocarbons into the soil and infiltration down to the groundwater	Medium	Procedures for the rapid recovery of hydrocarbons and contaminated soils; staff training; preventive maintenance of equipment	Rehabilitation	Low
Groundwater in village wells		x	x	Decrease in water levels in some village wells, up to and including desiccation, caused by dewatering of pits	High	Drilling program to provide water in compensation for losing the use of certain village wells	Compensation	High

Source: DRA, 2019

20.4 Air and Noise Assessment

20.4.1 Baseline Study

The activities associated with the Project are expected to cause changes in atmospheric emissions, localized noise, and vibration levels due to mining activities and material-processing infrastructure. Increased atmospheric emissions are in addition to existing baseline conditions and could negatively impact humans and ecology depending on the proximity of activities to inhabited areas and recognized natural habitats[1]. Effect indicators, in the form of air quality, noise and vibration guidelines provided by international and Guinean organizations, were used in the assessment to determine whether the expected effects of the Project have associated mitigation measures.

If a comparison with the appropriate effect indicators shows that one of the Project's activities will likely have a negative effect, mitigation options are explored to eliminate or reduce the severity of the impact as much as possible.

Ambient air quality is characterized by measurable air concentrations of constituents of potential concern (COPC). The Project's activities have the potential to generate COPC emissions, including airborne dust (airborne particulate matter) and gaseous products of combustion (e.g., nitrogen oxides). COPCs are standard indicators of air quality:

- Particulate matter less than 10 microns (PM_{10}).
- Particulate matter less than 2.5 microns ($PM_{2.5}$).
- Nitrogen dioxide (NO_2).
- Sulfur dioxide (SO_2).
- Carbon monoxide (CO).

Existing air quality and ambient noise conditions were measured by SIMPA at several mining concession locations as well as in many communities in the town of Lola.

20.4.2 Assessment of the Main Impacts on Air and Noise Conditions

20.4.2.1 Results of Predictive Modelling

a. Atmospheric Dispersion

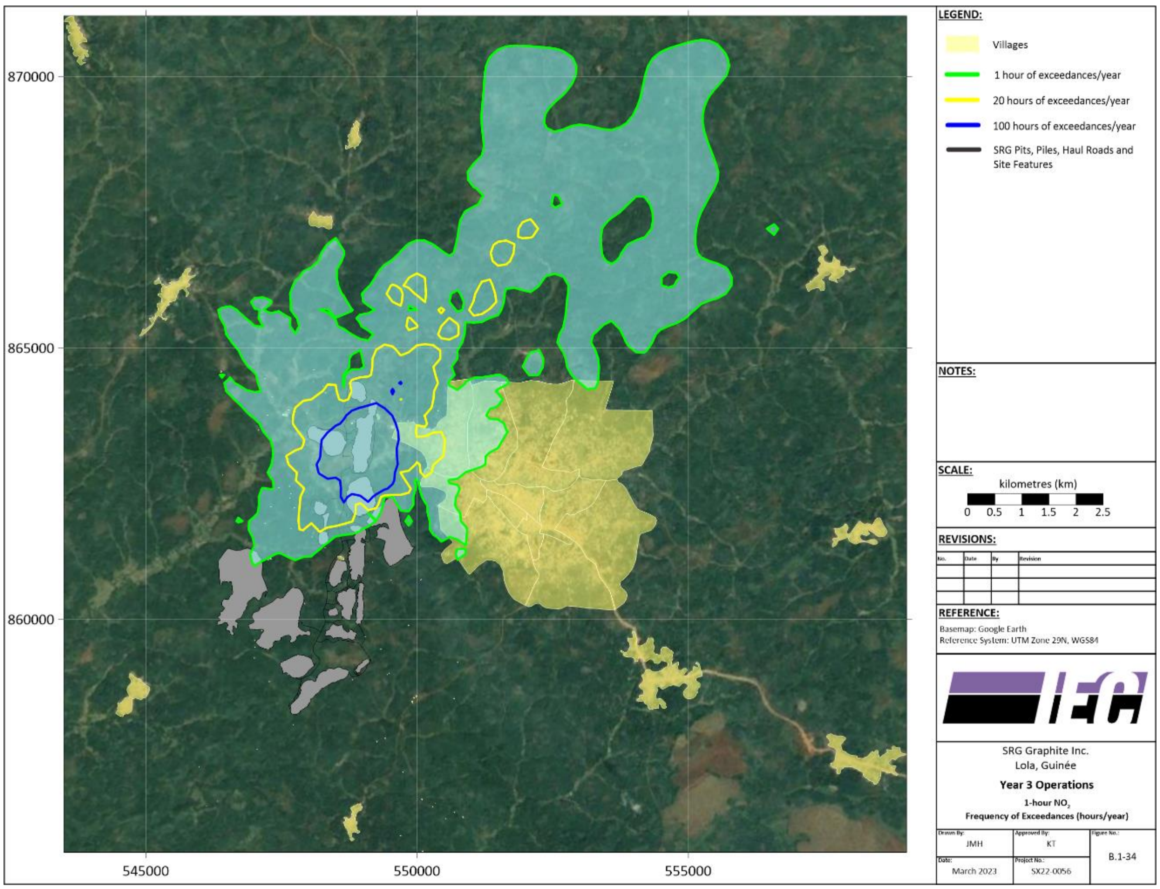
1. Based on current Project information, it appears that the in-stack concentrations of particulate matter (TSP), NO_2 and SO_2 for the proposed generator sets exceed the Guinean and IFC in-stack emissions limits outlined in Sections 3. Further, the current fuel proposed for generators (HFO @ 3.5% S) exceeds the IFC criteria of 1.5% S, which is recommended in the IFC General EHS guidelines. Up to 3% S is acceptable if a suitable justification can be provided (i.e., economic feasibility of using low sulphur fuel).
2. Most sensitive receptor locations included in the modelling were predicted to either comply with the established air quality criteria, or to have mostly i*nsignificant* or *low* impacts. For all modelling scenarios, the worst-case receptor for Lola (i.e., the receptor with the highest

[1] It should be noted that only impacts on humans were considered in the atmospheric environment assessment. Ecological impacts were evaluated in the biological environment assessment.

predicted concentrations for all of Lola), was predicted to have a *moderate* impact for 10-minute SO_2, and *high* impact for 1-hour NO_2.

3. Figure 20.6**Error! Reference source not found.** provides an example of the impact of the Project's north pit on NO_2 levels in the area surrounding the proposed mine.

Figure 20.6 – Expected Frequency of Exceeded 1-hr NO_2 Levels per Year – North Pit



b. Noise and Vibration Propagation

1. Airblast overpressure and ground-borne vibration from potential blasting operations were estimated using propagation equations that resolved the maximum allowable charge mass per delay (kg) over a range of distances to establish minimum separation distances from receptors that would ensure compliance with the project effects criteria. Sensitive receptors that are located within the established setback would be subject to potentially adverse noise effects from the Project. To mitigate potential effects, the charge mass per delay would either need to be reduced by an amount that would allow the criteria to be met, or the graphite material would need to be extracted via other means.

2. While most of the receptor locations were predicted to either comply with the established noise criteria, or to have Marginal or Low impacts (i.e., <5 dBA above the criteria), there were locations identified in each modelling scenario that had predicted Moderate impacts (i.e., 5 to 10 dBA above the criteria). These were identified as follows (accounting for the removal of receptors that are within 100 m of mine infrastructure, which were assumed to be resettled to an unimpacted area as part of the Resettlement Action Plan (RAP)).

- Scenario 1 (north pit): three (3) moderate impacts at locations.
- Scenario 2 (central pit): two (2) moderate impacts at locations.
- Scenario 3 (south pit): three (3) moderate impacts at locations.

20.4.3 Summary of the Impact Assessment

The impacts on air quality and noise conditions are presented in Table 20.4. The main prevention and mitigation measures are also summarized in the table.

Table 20.4 – Summary of Air and Noise Impacts, Mitigation Measures and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of Impact	Degree of potential impact	Mitigation Measures	Type of action	Degree of residual impact
Human health air quality		x		Impacts. on air quality associated with the operation phase: - Release of potentially concerning contaminants from ore mining, concentration and transport - Release of potentially concerning	Moderate to High	Develop and implement an air quality management plan, including appropriate monitoring and mitigation measures. Resettlement or compensation of affected communities.	Mitigation and Monitoring	Medium
Human health noise and vibration		x		Impacts on noise and vibration associated with the operating phase: - Noise from ore mining, concentration and transport - Noise and vibration from blasting	Moderate	Develop and implement an noise and vibratiob management plan, including appropriate monitoring and mitigation measures. Resettlement or compensation of affected communities.	Mitigation and Monitoring	Medium

Source: DRA, 2019

20.5 Biological Study

20.5.1 Baseline Study

This study deals with the following main topics:

- Botany and habitats.
- Large and medium-sized mammals.
- Birds.
- Herpetofauna (reptiles and amphibians).
- Aquatic fauna.

For each of these studies, an internationally recognized specialist was partnered with at least one senior national researcher.

20.5.2 Assessment of the Main Impacts on Air and Noise Conditions

The state of habitat degradation coupled with very high hunting pressure have had an extreme impact on the biodiversity of the Project area. Of the originally rich fauna of this region, only the small species that can withstand habitat disturbances and strong hunting pressure have survived. While bird life remains relatively abundant, the other taxonomic groups studied show the scarcity of fauna in the Project area. The few somewhat preserved forest habitats are very small, fragmented and disconnected, and do not support forest wildlife.

The Project area is home to only one conservation-related animal species, a locally common fish species, and to ten also locally common plant species that are threatened according to International Union for Conservation of Nature (IUCN) criteria.

The high resilience of tropical ecosystems could allow for the implementation of local forest habitat restoration programs. However, the current hunting pressure is a significant obstacle to the growth and maintenance of mammal populations.

20.5.2.1 Summary of the Impact Assessment

Table 20.5 presents the results of impact assessments for major biological species, habitats, and biological resources. Proposed mitigation measures and residual impacts are also shown, followed by expected residual impact levels.

Table 20.5 – Summary of Biological Impacts, Mitigation Measures and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Biodiversity - important species - a fish species with VU status	x	x		Risk of impacts on waterways and water quality	Medium	Measures to reduce impacts on waterways during construction and operation.	Mitigation	Medium
Biodiversity - important species - ten tree species with VU status	x			Eradication of treed areas potentially including these species	Medium	Measures during rehabilitation to plant local species, including these	Rehabilitation	Medium
Biodiversity - natural habitats - waterways and gallery forests	x	x		Eradication of these habitats and impacts during operation (water quality, dust, pollutants, noise)	Medium	Measures to reduce impacts on waterways and reduce dust, noise	Mitigation	Medium
Biodiversity - biological resources - wood	x	x		Eradication of areas where residents obtained firewood or lumber	Low	No definite measures. Possibility of improvement with rehabilitation but remains to be seen		Low
Biodiversity - biological resources - bushmeat	x	x	x	A significant increase in noise can affect people	Low	No definite measures. Possibility of improvement with rehabilitation but remains to be seen		Low

Source: DRA, 2019

20.6 Social Study

20.6.1 Baseline Study

Field research carried out by SIMPA in June 2018 made it possible to describe the socioeconomic environment over the entire local area of influence. Quantitative and qualitative methods were used to collect information and data: questionnaire surveys, focus groups and direct observations on the Lola Urban Community (UC), including the 12 central Lola districts (Tighen-Mo 1, Tighen-Mo 2, Woroya-Po, Souowala-Koly 1, Souowala-Koly 2, Tiéta, Kpèlè-Koly, Homeya-Koly 1, Homeya-Koly 2, Flaya-Po, Ghotey-Koly, and Maghan-Mo) and the three connected districts (Tokpanata, Balémou, and Gamayalé). The socioeconomic surveys targeted these communities in particular because of their physical and economic proximity to the Project area (as known in June 2018) and the presence of inhabitants considered as Project Affected Persons (PAP) and is part of a future Resettlement Action Plan (RAP) framework...

In all, 111 questionnaires, 15 focus group discussions and direct observations were conducted in these locations.

Figure 20.7 – Public Consultations in Some Districts during the Site Visit

Flayapo (UC)

Balémou

Gama Konikoni

Gama Yalé

Tokpanata

Tingha-Mo 2

Source: DRA, 2019

20.6.2 ASSESSMENT OF THE MAIN IMPACTS ON AIR AND NOISE CONDITIONS

The socioeconomic environment's valued components selected for this study stem from the structuring dimensions of the socioeconomic baseline study and the consultations conducted as part of the impact study. The choice of these components will make it possible to present the majority of the potential social impacts (positive and negative) that the Lola Project will create.

The six (6) components and their main sub-components analyzed as part of this study are presented in Table 20.6.

Table 20.6 – Main Valued Components of the Socioeconomic Environment

Main Ecosystem Valued Components Analysed	Sub-Components Considered
Demography and social dynamics	Issues associated with migration movements; and Social and family structure.
Population health and safety	Population health; Transport and road safety; and Public safety.
Employment and economic development	Local economy and supply; Direct and indirect job creation; Inflation/accentuation of social inequalities; Community development; and Increase in social inequalities.
Land rights and land loss	Loss of land (cultivated land, fallow land, pastures, etc.) and property; Changes in land rights and relationship to land; and Food security.
Cultural heritage and archaeology	Tangible (sacred and archaeological sites); and Intangible (languages, ritual practices).

Source: DRA, 2019

20.6.2.1 Summary of the Impact Assessment

Table 20.7 presents the results of the impact assessments for key aspects of the socioeconomic environment. Proposed mitigation measures and residual impacts are also shown, followed by expected residual impact levels.

Table 20.7 – Summary of Socioeconomic Impacts, Mitigation Measures and Residual Impacts

Socioeconomic Environment and Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Demography and social dynamics	x	x		Rural exodus and migration to economic centres	Medium	Measures to mitigate and manage the impacts arising from migration as described in Chapter 7, Section 7.5.2.1. Elaboration of a Migration Flow Management Plan in collaboration with competent authorities (prefecture, sub-prefectures, municipalities) that will address how the Project will: •Minimize the migratory inflow induced by the Project as much as possible; •Understand the context and the risks of migratory flow into the local area of influence; •Manage and guide the flow of newcomers in accordance with local and regional planning objectives; and •Develop and implement mitigation measures to address negative social and environmental impacts and optimize benefits; •Establish the necessary monitoring measures with key indicators to measure the Project's impact and the effectiveness of ongoing management measures.	Mitigation	Low
	x	x		Migratory inflow (direct and induced)	High		Mitigation	Medium
Population health and safety	x	x		Deterioration of air quality and noise conditions	Medium	Implement the measures detailed in Chapter 7, Section 7.5.2.2, including: •Measures to manage impacts as part of a Community Health and Safety Management Plan, covering aspects of safety, Project risks, disease prevention, and sanitation and hygiene practices; •Avoidance and mitigation measures discussed in Chapter 5 - Air and Noise Study and Chapter 4 - Soil, Sediment and Water Resources Study ; •Appropriate environmental emergency response procedures (including a Hazard and Emergency Management Plan) for spills and potential accidents; •Measures and procedures comprising a Transport and Road Safety Management Plan.	Mitigation	Medium
	x	x		Pressure on basic health services	High		Mitigation	High
	x	x		Increased propagation rates of communicable diseases	High		Avoidance Mitigation	Medium
	x	x		Increased propagation rates of malaria and waterborne diseases	Medium		Mitigation	Medium
				Dangers associated with the use of hazardous products	Medium		Avoidance Mitigation	Low
	x	x		Increased pressure on transport and road safety	Medium		Mitigation	Medium
	x	x		Deterioration of public safety	High		Mitigation	Medium
			x		Undetermined		n/a	Undetermined
Employment and economic development	x	x		Job creation	Medium	Measures to maximize the economic advantages of the Project for local communities as detailed in Chapter 7, Section 7.5.2.3: •Local, regional and national communication plan on hiring opportunities and the skills and training levels required for each of the open positions (direct and contract), in order to "democratize" access to employment; •Transparent hiring policy; •Training and skills development plan; •Local hiring plan based on Mining Code guidelines; •Implementation of a Community Development Plan (CDP) in collaboration with the affected municipalities, the use that will be made of the funds, according to the needs and priorities identified in the Local Development Plan (LDP) of the Lola UC.	Enhancement	High
	x	x		Increase in social inequalities	High		Mitigation	Medium
	x	x	x	Community development	High		Enhancement	High
Land rights and land loss	x	x		Weakening of traditional land management / modification of land rights	High	•Use the RAP Framework to guide the resettlement and livelihood recovery program implemented through a future Resettlement Action Plan (RAP). •Optimize the configuration of the Project in order to avoid disruptions on access roads. If the impact cannot be avoided, and in the absence of acceptable alternatives, reach an agreement with the communities on appropriate measures to mitigate losses and disruptions. The agreed-upon measures, including the provision of alternative routes (e.g. roads, trails, bridges, etc.) and compensation for loss of access, will be implemented through the RAP Framework. See Chapter 7, Section 7.5.2.4.	Mitigation	Medium
	x	x	x	Loss of land: - Physical displacement - Economic displacement	High		Avoidance Mitigation Compensation	High
	x	x	x	Disruption of access roads within the village and to the city	High		Avoidance Mitigation Compensation	Medium
Cultural heritage and archaeology	x	x		Risk of damage to the integrity of tangible cultural heritage sites	Non-significant	See detailed measures in Chapter 7, Section 7.5.2.5, including: •Conduct a document-based study of the archaeological cultural heritage by means of a general review of the regional literature; •Hire an archaeologist to carry out a study to identify the archaeological potential in the Project area in order to, at a minimum, suggest areas most likely to include sites; •If archaeological potential is identified, conduct a comprehensive archaeological survey in the study area; •Ensure avoidance of areas with high archaeological potential or, if this is not possible, conduct archaeological rescue excavations of any discoveries; and •Ensure the implementation of an effective Accidental Discovery Management Procedure from the beginning of construction.	Avoidance Mitigation	Non-significant
	x	x		Risk of damage to the integrity of intangible cultural heritage	Undetermined		n/a	Undetermined
	x	x		Risk of damage to the integrity of the archaeological heritage	Undetermined		n/a	Undetermined

Source: DRA, 2019

20.7 Environmental and Social Management Plan

20.7.1 Objectives

The Environmental and Social Impact Assessment (ESIA) conducted allowed for the collection of baseline data on the physical, biological, and social environment, among other things. Once this data was analyzed, a comprehensive environmental and social impact study was carried out. Systematic evaluations have made it possible to quantify the degree of expected impacts, and to prioritize the control and mitigation measures to be put in place to either eliminate, minimize, or control them.

This data, impact analyses and mitigation measures, provide a tool for identifying the main environmental and social issues associated with the Project and form the basis for the implementation process of the mitigation measures identified in the ESIA and the environmental audit, which are summarized in the Project's Environmental and Social Management Plan (ESMP).

One of the objectives of the ESMP is to ensure that the Project complies with applicable international and Guinean environmental and social legislation and requirements for the four identified phases of the Project: design, construction, operation and closure.

In Guinea, investment projects (both public and private) that may have an impact on the environment must do an impact assessment study and produce a management plan, as per articles 82 and 83 of the Code for the Protection and Development of the Environment (Ordinance No. 045/PRG/87 of May 28, 1987). The general guide for implementation of environmental and social impact assessment studies of the Republic of Guinea, adopted on March 11, 2013 (No. A/2013/474/MEEF/CAB), integrate the ESMP in the structure of the environmental and social impact assessment report.

The Lola Project will be carried out in compliance with the Guinean Mining Code (2011 Mining Code), in particular, the articles in of Title IV, Chapter III, Section III entitled "Relations with Third Parties".

The ESMP also allows SRG to aim for compliance with the International Finance Corporation's (IFC) standards on social and environmental sustainability, as well as the Equator Principles for managing the environmental and social impacts of international investment projects. This ensures the implementation of best practices in the industry to mitigate or improve the impacts of the Project. In this way, the management plan becomes a tool for managing both the environmental and socio-economic aspects related to the Project during its implementation and for minimizing/mitigating impacts.

Among others, it enables to:

- Apply measures to better protect the environment;

- Minimize the impacts of the Project on the biological environment;
- Minimize the impact on the health of populations as well as the multiple socioeconomic impacts;
- Reduce nuisances during construction;
- Facilitate the involvement or participation of local populations and organizations in the implementation of the Project;
- Maximize opportunities to improve and enrich living conditions;
- Reduce the risk of accidents;
- Ensure mining operations are consistent with the commitments made under the ESMP and that they protect/improve living conditions for the nearby communities affected by the Project; and
- Measure SRG's performance in terms of good environmental and social management.

20.7.2 Health, Safety, Environment, and Community Management

SRG has a general obligation on performance and compliance regarding health, safety, and responsible management of the environment and of community relations to ensure, among other things, that planned conditions are met and that employees work safely. In the event of an injury or environmental incident, the presumption of liability lies with SRG.

The following international guidelines have oriented the approach to managing risks to the health, safety, and security of communities:

- IFC Performance Standards;
- IFC General EHS Guidelines; and
- Guinean Mining Code: Title IV, Chapter VII - Environment and Health.

IFC Performance Standard #4 requires that an evaluation of the risks and health and safety impacts to which affected communities are exposed be conducted and that prevention and mitigation measures consistent with good industrial practices be identified.

The Lola Project must also comply with Title IV, Chapter VII of the 2011 Mining Code as well as with the Environment Code, or with international best practices in this area (Article 142). Appropriate techniques and methods must be used to protect the environment and to ensure the safety of workers and local populations in accordance with the Environment Code or international best practices in this area (Article 142).

20.7.3 Register of Avoidance, Mitigation And Compensation Measures

This section of the ESMP describes all the avoidance, mitigation and compensation measures that SRG will undertake over the life of the Lola Project. These actions result from the Lola Project ESIA and form the basis of the operational controls to be introduced into the Project's ESMP Framework. The monitoring and audit process (described above) will measure the Project's compliance with these actions.

The register of avoidance, mitigation and compensation measures presented in the ESIA is organized by subject and sub-item and indicates the phase and specific component to which these actions relate. The actions are divided into the following categories:

- Landscape;
- Soil;
- Water resources;
- Air quality;
- Noise and vibration;
- Biodiversity;
- Socioeconomic environment.

For each avoidance, mitigation and compensation measure, the table includes:

- The details of the commitment; and
- The phase to which the commitment applies: construction, operation, closure.

The ESIA provides a preliminary list of topics that require follow-up. Details regarding methods, measurement frequency and locations will be elaborated for all these parameters in detailed follow-up plans developed as part of the proposed environmental and social management plans. Follow-up requirements will be updated as new ones emerge and following a review of previous follow-up reports, audit results and summary reports. Follow-up requirements will also be updated if the Project scope changes or if there is a significant change to a Project component such that new mitigation measures are required to ensure appropriate management of the impacts and environmental and social risks.

20.8 Hydrogeology

Additional details about the hydrogeological site investigations and hydrogeological modelling can be found in the corresponding section of the 2019 NI 43-101 Report. The current section is extracted from the updated hydrogeological report titled "Hydrogéologie et dénoyage des fosses minières" prepared by Schadrac Ibrango, P. Geo, PhD, MBA, dated March 2023.

A conceptual model was developed to estimate ground water and rainwater inflow rates into the different pits and select the most suitable and cost-effective approach to conduct the pits dewatering.

Ground water inflow rates were estimated during the FS based on mine plans mining solely the ore from the saprolite. No mining was scheduled in the fresh rock. In this FS update it is scheduled mining part of the ore from the fresh rock in the north pit 2. It has become necessary to update the hydrogeological model integrating possible ground water income from deep fractured aquifers. Since no field hydrogeological investigation was undertaken targeting the characterization of hydrodynamical parameters of possible fractured deep aquifers, it was elected to extrapolate to the Lola project hydrodynamical parameters established for high flow rate boreholes recently drilled by the *Service des Eaux de Guinee* (SEG) to supply the city of Lola with drink water. Only few kilometers are separating the location of these boreholes with the location of the scheduled pits of the Lola graphite project. The extrapolation of the SEG's boreholes hydrodynamical parameters to the north pit 2 allowed estimating an ultimate maximum daily flow rate of 27,000 m^3/day originating from fractured deep aquifers. This deep aquifer flow rate was added to the flow rates estimated from the saprolite and alluvial aquifers during the FS by numerical modelling to result to a total maximum ground water flow rate of about 40,500 m^3/d.

Rainfall Intensity-Duration Frequency (IDF) curve for the Lola area was used to estimate an ultimate rainwater height with a period of return of 20 years (148 mm), since mining activities are scheduled to last 17 years. An infiltration rate of 15% of this estimated rainwater height was applied since the occurrence of such extreme event is supposed to coincide with a high saturation level of the soil. An evaporation rate of 1.5 mm was considered since this extreme event is supposed occurring during a cooler month of the season. A water balance model was used to result to a project water height of 124.3 mm which was applied to the exposed pit surfaces to result to an ultimate daily rainwater inflow rate of about 189,000 m^3/d.

Dewatering sizing is based on daily maximum ground water inflow rate and not on the maximum rain flow rate for cost efficiency. In the occurrence of an extreme event such as the project rainfall with a return period of 20 years the dewatering will have to be managed strategically focusing first on the more important pits o in terms of mine planning and operation efficiency. Additionally, it will not be possible to manage a so huge amount of ground water in one day only. It will take several days to remove the water. The dewatering sizing is targeting the removal of a total maximum volume of 43,200 m^3 daily using a combination of nine (9) submersible pumps. Water will be collected in sumps located at pit floors and pumped to the surface or to intermediate sumps located at higher benches to not disturb mining activities. Table 20.8 summarizes the characteristics of the selected pumps to achieve the targeted dewatering needs. Additionally, it is planned to acquire four (4) generators for power supply to the pumps. Two (2) will have a power capacity of 150 KVA each and the two (2) other a power capacity of 100 KVA each.

Table 20.8 – Characteristics of the Proposed Submersible Pumps

Pump Type	Discharge (m^3/h)	HMT (m)	Number to acquire	Daily pumping capacity (m^3)
Sakuragawa U-2606C	120	75	6	17,280
Sakuragawa U-4308KB	240	22	3	17,280
Sakuragawa U-4306D	120	33	3	8,640
			TOTAL	**43,200**

Source: DRA, 2023

It is anticipated that for a single isolated event all the generators could be used simultaneously to supply power to all the submersible pumps for a dewatering purpose. For an extreme event requiring pumping over several days the generators should be used alternately for more efficiency and durability.

Since the FS update timing did not allow performing field work and site deep hydrogeological investigations, it is recommended to perform the following works and update the pits dewatering study before starting to build the mine:

- Acquire aerial photographs covering the project area and conduct a detailed lineament analysis.
- Performed a ground geophysical investigation using electric methods to locate major faults around the different pits.
- Drill selected points to locate and assess the productivities of deep aquifers and determine their hydrodynamical parameters.
- Update the hydrogeological and pits dewatering model.

The achievement of these additional hydrogeological investigations will allow to have a better understanding of the deep hydrogeological condition. Drilling on expected productive points will allow to conduct pumping tests whose interpretation will permit determining the discharge and hydrodynamical parameters of the deep aquifers being intersected. Conducting a new modelling and updating the dewatering report will allow discussing the opportunity to keep or not the proposed dewatering scheme. Depending on the productivities of intersected aquifers it could be analyzed the opportunity of using peripheral holes to the pits to dynamically drawdown the water table below the pit floors instead of collecting the groundwater into sumps prior pimping it to the surface. A such alternative will help to improve pits walls stability and deliver clean water for plant and other operating uses. A budget of $90,000 is proposed to achieve these activities.

20.9 Geochemical Characterization

A geochemical characterization program has been carried out at SGS Laboratories on representative waste, ore, and tailings samples.

20.9.1 Waste

Four (4) individual waste samples have been selected according to the following lithologies: laterite, soft saprolite, hard saprolite and fresh rock. The samples have been submitted to the following tests/analysis:

- Whole rock analyses for total content of major elements;
- Environmentally available metals contents (partial digestion by aqua regia);
- Acid Rock Drainage (ARD) potential: Acidification Potential (AP) by sulfide content measurement and Neutralisation Potential (NP) by Modified Acid Base Accounting method;
- Acid Rock Drainage (ARD) potential by NAG method;
- TCLP (USEPA-1311), SPLP (USEPA-1312) and Shake Flask Extraction (SFE) static leaching tests.

20.9.2 Soft Waste

Laterite, soft saprolite and hard saprolite samples showed sulfide concentration lower or equal to analytical detection limit (≤ 0.02%) and therefore do not present ARD potential as confirmed by Modified ABA and NAG tests. Those samples also showed no metals leaching potential.

Leachates from a soft material waste pile should show low metals content with pH slightly higher than the IFC/World Bank recommendation (pH>6). Management of runoff waters from soft materials waste dump do not require special measures at the exception of suspended sediments.

20.9.3 Fresh Rock Waste

Sulfide content of the fresh rock waste sample was significant (1.35%) and could potentially generate ARD due to the low neutralisation potential as confirmed by Modified ABA and NAG tests. Static leaching tests showed significant leaching potential for copper and to a lesser extent for nickel and zinc. However, copper (160 mg/kg), nickel (75 mg/kg) and zinc (100 mg/kg) contents are low.

It should be noted that static leaching tests are very aggressive and therefore the leaching potential is usually largely overestimated. Kinetic testing which is more representative of the real conditions encountered on the field has not been carried out on fresh rock waste sample.

However, kinetic testing carried out on fresh rock ore composite sample showing similar neutralisation potential as well as sulfide and metals contents has shown that metals leaching is very low with a pH staying higher than 6.0 after 25 weeks of assay.

Moreover, static and kinetic tests are carried out on crushed samples and therefore the real active contact surfaces in a fresh rock waste dump which contains boulders is significantly lower than in laboratory testing.

Considering this limited contact surfaces, the limited contact between the percolating waters and the waste rock, the waste low metals contents and the results obtained with kinetic test performed on the fresh rock ore composite sample, it can be expected that leachate from a fresh rock waste pile should show low metals content but, pH could be slightly below IFC/World Bank recommendation (pH>6).

20.9.4 Ore

In addition to the tests carried out on the waste samples, an initial soft ore composite sample (mixture of laterite, soft saprolite and hard saprolite) and a fresh rock ore composite sample have been submitted to semi-quantitative X-ray diffraction for determination of the mineral species and kinetic leaching test as per humidity cell procedure. A second composite soft ore sample has also been produced and characterized.

20.9.4.1 Soft Ore

The original soft ore composite sample showed a 0.47% sulfide content and low metal content copper (200 mg/kg), nickel (96 mg/kg) and zinc (150 mg/kg) contents. However, the neutralisation potential is quite low and the sample is potentially ARD according to Modified ABA and NAG tests results.

Static leaching tests showed a potential of leaching for copper, nickel, and zinc. Kinetic testing commenced in January 2019. Kinetic test which is more representative of the real conditions encountered on the field showed significant concentrations of copper, zinc, nickel, and manganese in the initial leachate (week #0). First flush of contaminants is very often observed in kinetic test. Concentrations of copper, zinc, and nickel were significantly lower in the leachates collected from Week #1 to Week #20, but remains higher than IFC/World Bank recommendation especially for copper and to a lesser extent for zinc. The pH remains close to 3.7 between Week #15 and Week #20.

The second soft ore composite sample showed characteristics similar to the original composite sample: 0.65% sulfide content and low metal content (Cu: 323 mg/kg, Ni: 121 mg/kg and Zn: 166 mg/kg). The neutralisation potential is quite low and the sample is also potentially ARD according to

Modified ABA and NAG tests results. Static leaching tests showed very low copper, nickel, and zinc concentrations in leachate from laterite composite sample, but significant concentrations were observed in leachates from soft saprolite and hard saprolite composite samples.

Kinetic testing has commenced in late April 2019 for 42 weeks. The pH level remained close to 4.2 between Week #2 and Week #5 but was lower than 3.5 from week #26 and even lower than 3.5 from week #36. Sulfate concentrations were significant when pH was lower than 3.5 (120 mg/l to 250 mg/l) which indicate that sulfide oxidation was still on-going at the end of the test (week #42).

Significant concentrations of copper, zinc, nickel, and manganese have been observed in initials leachate (Week #0 and Week #1). Following the first flush, copper concentrations decreased but remains significant (0,72 mg/l at week #40). From week #15, nickel, zinc and manganese concentrations showed a constant decrease, reaching 0,316 mg/l, 0,288 mg/l and 1,71 mg/l, respectively at week #40. Iron concentrations showed a constant increase following the first flush reaching 2.46 mg/l at week #40. Copper and iron concentrations at week #40 were slightly higher than World Bank corresponding recommendations. Levels of pH were constantly not respecting World Bank recommendation (pH<6.0).

Globally, the results obtained with the two (2) soft ore composites are similar. Mitigation measures should be put in place at soft material ore stockpile locations in order to project groundwaters from potential metals contamination.

Dewatering waters from soft materials pits could show pH lower than the IFC/World Bank recommendation (pH>6) even considering the low contact of precipitation and runoff with the ore, the relative proportion of pits walls containing ore and in pH of the inflowing groundwaters. However, metals concentrations should respect World Bank recommendations in dewatering waters.

20.9.4.2 *FRESH ROCK ORE*

The fresh rock ore composite sample showed low copper (120 mg/kg), nickel (110 mg/kg) and zinc (150 mg/kg) contents. Sulfide content is significant (1.65%) and the neutralisation potential is quite low and therefore the sample is potentially ARD according to Modified ABA and NAG tests results.

Kinetic test has been carried out for 60 weeks on a fresh rock ore sample. From week #28 to week #50, remained lower than 6,0 for most leachates. From weeks #51 to week #60, pH lower than 5,0 were observed in four samples. Sulfate concentrations remained low but higher when pH was lower than 5,3. Copper concentrations were low (<0,01 mg/l). However, from week#40 to weeks #60, constant increases of nickel and zinc concentrations could be observed. At week#60, leachate showed concentrations of 0.072 mg/l and 0,044 mg/l for nickel and zinc, respectively.

Dewatering waters from fresh rock materials pits could show pH lower than to the IFC/World Bank recommendation (pH>6) even considering the low contact of precipitation and runoff with ore, the relative proportion of pits walls containing ore and in the pH of the inflowing groundwaters. However, metals contents should be lower than World Bank guidelines in dewatering waters.

20.9.5 TAILINGS

A tailings composite sample produced from processing of soft ore has been submitted to the same list of tests/analysis carried out on the ore samples. The sample showed copper (280 mg/kg), nickel (83 mg/kg), zinc (230 mg/kg), and sulfide (0.55%) contents similar to soft ore composite samples contents. Semi-quantitative X-Ray diffraction identified higher contents of Mn-containing chlorite (3.7%) and biotite (7.1%) in tailings than in soft ore. Neutralisation potential is quite low, and the sample is potentially ARD according to Modified ABA and NAG tests. Static leaching tests showed a potential of leaching for copper, zinc, and manganese.

Kinetic testing which has commenced in December 2018 for 65 weeks. Results showed significant concentrations of zinc and manganese in the initial leachate (week #0). However, concentrations of copper, zinc and nickel were significantly lower than the corresponding IFC/World Bank recommendation in the leachates collected from Week #1 to Week #65. At the opposite, manganese showed a constant increase in concentrations from the beginning to the end of the test, reaching 15.3 mg/l at week #65. There are no IFC/World Bank recommendation for manganese concentration in mining effluent.

The pHs have remained generally between 5.5 and 6.0 for the 65 weeks. Neutralisation potential of chlorite and biotite is lower than carbonates potential but is significant. The presence of those minerals can explain the higher pH in tailings kinetic test than in the soft ore kinetic tests.

Considering that the contents of environmentally sensitive metals (copper, nickel, zinc, etc.) in the soft ore and the corresponding tailings of the Lola deposit are low, metals leaching from the TSF should not be a potential issue for the respect of IFC/World Bank recommendations for mining effluents. However, control of pH level could be required for respect of IFC/World Bank recommendation (pH>6). Moreover, processing of fresh rock ore could raise the pH and decrease metals concentrations of TSF effluent.

20.10 Water Management

Water management for the Lola project concerns mining activities (ore and waste extraction) and graphite production (mill and tailings storage facilities).

Water reclaimed from the tailings storage facilities (TSF) will be sent to a Process Water Pond which will also collect water from the tailings thickener overflow, raw water make-up and concentrate filtrate. A second pond, the Fresh Water Settling Pond, will collect runoff water which will be pumped to a Raw Water Tank feeding the process plant.

Inputs to the TSF will include water contained in the slurry, direct precipitation, and runoff from the upstream watersheds. The TSF will comprise two cells which will be operated sequentially. Outputs will include evaporation, water captured in tailings voids, seepage, and reclamation to the mill. Surplus water will be discharged in the receiving environment (Gnahya River, a tributary of Tighen River) during the rainy season. To comply with IFC/World Bank recommendations for mining effluents, pH adjustment will also be carried out before discharge.

The industrial site will comprise various infrastructure and buildings (mill, camp, generators, diesel reservoir, road, parking, etc.). A network of ditches will collect contact water and send it by gravity to the Fresh Water Settling Pond.

Waters from the mine pits walls and direct precipitation will be collected in sumps located at the bottom of the pits and pumped to the collection ponds to comply with IFC/World Bank total suspended solids recommendation for mining effluents. In addition, pH adjustment will be made before discharge. Whenever possible, surface runoff from upstream watersheds will be diverted from the pits.

Runoff water from the waste dumps will be collected in ditches and sent to the sedimentation ponds to comply with IFC/World Bank total suspended solids recommendation for mining effluents. In addition, for the fresh rock dump, pH adjustment will be made before discharge. Due to the unconsolidated nature of the laterite and the saprolite, explosives utilization will be limited and therefore nitrates and ammonia concentrations in mine waters will be low. An explosive management plan will be put in place for North Pit #2 in which fresh rock will be mined.

Waters for domestic and sanitary uses will come from the Fresh Water Settling Pond. A sanitary wastewater treatment unit will be installed. Discharge will comply with IFC/World Bank recommendation for sanitary effluents. Water treatment facilities will also be installed for domestic waters (potable and showers). Treatment installations will comprise cartridge filtration, UV disinfection, and chlorination.

20.11 Closure and Reclamation

At the end of the life-of-mine, SRG will either sell the project to another mining company or offer to hand it over to governmental authorities with first right of refusal. In case the project is sold, the transaction will ensure all environmental liabilities and closure responsibilities are transferred to the Buyer. If the mine is handed over to the local authorities, SRG will transfer to them the ownership of project installations, buildings, power plant, equipment, and inventory.

Rehabilitation works will include buildings dismantling and revegetation of impacted area such as the infrastructure's footprints. Rehabilitation works will also include revegetation of the tailings storage facilities (TSF), the waste rock dumps, the topsoil stockpiling site and the sedimentation ponds.

20.11.1 Dismantling Buildings and Other Infrastructure

Buildings and infrastructure specifically erected for the operation of the mine will be dismantled to retrofit the sites to a state compatible with the surrounding environment. Other infrastructure may be maintained for the benefit of the local communities, such as roads and camp.

During the dismantling operations and disposal of the Project buildings, all buildings and surface infrastructures not required for the closure plan follow-up process will be taken apart by a certified contractor. Waste material resulting from the dismantling operations will be transported to authorized recycling sites. During the dismantling operations of the buildings and infrastructures, rehabilitation work will include the following activities:

- Salvageable material and equipment will be set aside and then either given or sold to recycling sites.
- Any process, production, or service equipment, such as silos, reservoirs, tanks, pipelines, and pumps will be drained and cleaned. The wash water will be collected for treatment (settling, water/oil separation if needed) before being discharged into the environment.
- Any equipment containing oils or other potentially contaminating liquids, such as electrical equipment and vehicles, will be drained and cleaned before being discarded.
- Management of chemical products, waste materials, and dangerous goods will be carried out safely according to Guinean regulations in effect or with international best practices.

20.11.2 Revegetation of Impacted Areas

All impacted areas such as laydown areas and industrial work bay, as well as the various dismantled buildings footprint areas, will be revegetated. A 15 cm topsoil layer will be placed on the ground before seeding.

20.11.2.1 Tailings Storage Facilities

TSF #1 and TSF #2 will be revegetated with a 15-cm topsoil layer placed on the tailings surface before seeding. The tailings stored in North pit #2 will be covered with water when the mine waters pumping will be completed. No revegetation will be required.

20.11.2.2 *Waste Dumps*

When no longer in use, the dumps will be rehabilitated. A 15-cm topsoil layer will be placed on dump surface (top and slope) before seeding. For Dump 4 which contains fresh rock waste (including boulders) a 30 cm of soft waste will also be placed at the surface of the dump to obtain continuous surfaces before placement of topsoil.

20.11.2.3 *Water Management*

A breach will be realized in all sedimentation ponds when they will no longer be required for water treatment. Topsoil will be placed inside the pond and revegetation will be carried out.

To the extent possible, original drainage will be restored. Most culverts and bridges will remain in place since the roads will be required for post-closure monitoring and will be transferred to the communities.

At closure of a given pit, the dewatering activities will be stopped; and the water will reach the groundwater level and even freely discharge to the environment during rainy season.

20.11.2.4 *Site Safety*

At closure, a berm will be placed around North pit #2 because of the steep slope of the pit walls and the possible presence of significant height of water. All others pit walls slopes will be gentle and therefore, no safety measures are deemed necessary. Pits could be a water source for the communities.

20.11.2.5 *Heavy Mobile and Stationary Surface Equipment*

Whenever possible, heavy mobile and stationary surface equipment, including the pipelines will be sold on the used equipment market. The remaining unwanted equipment will be sold as scrap metal or disposed of at designated dump sites. Excessively worn or old parts will be sent to scrap metal recyclers or disposed of at designated dump sites.

20.11.2.6 *New and Used Controlled Products*

Petroleum products, fuels, diesel, oils, and greases will be spent out at the end of the LOM. All petroleum products reservoirs and associated piping used on site to store will be drained, cleaned and dismantled. Soils contiguous to the reservoirs or containers will be characterized and corrective measures will be taken in compliance with applicable Guinean regulation.

All reagents and other chemical products will be spent at the end of the LOM, except those required for water treatment during the environmental post-closure follow-up period. Residual reagents and chemical products not required for that purpose will be put into properly labelled containers and transported to an approved site for recycling.

No residual hazardous materials will be found on the Property after the cessation of the mining operations. All used oils will be sent to an approved recycling/burning site and the other residual dangerous goods will be collected, packaged, labelled, and transported at approved sites for elimination. Residual non-dangerous materials will be sorted; and recyclable materials will be sent to an authorized recycling facility.

20.11.2.7 Soils and Contaminated Materials

At cessation of mining activities, the properties will be characterized and rehabilitated if the characterization study reveals presence of contamination. Incidents associated with handling of petroleum products or other chemical products could occur, especially at the following sites:

- Petroleum products storage facility.
- Point of use locations of petroleum products.
- Reagents and chemical products storage facility.
- Near plants and mechanical shops.

All soils affected by petroleum hydrocarbons shall be excavated and disposed of at an authorized site.

21 CAPITAL AND OPERATING COSTS

21.1 Capital Cost Estimate (Capex)

21.1.1 Project Description

SRG Mining is developing a graphite deposit near the town of Lola, located approximately 950 km northeast of Conakry, capital of Guinea. The Project consists of the construction of an open pit mine, processing facilities, tailings management, as well as all necessary ancillaries designed to process 2.565 Mt/y of run of mine saprolite and produce 94,000 t/y of graphite concentrate in the nominal case.

21.1.1.1 Purposes of this Basis of Estimate

The purpose of this Basis of Estimate is to outline the methodology used for the development of the initial and sustaining capital cost (Capex) estimates in 2019 and the subsequent update to Q4 2022 prices whilst also increasing the process plant throughput from 50,000 tpa to 94,000 tpa which will form part of the Report for the execution of the Lola project.

21.1.1.2 Purpose of this NI43-101 Report Update

The purposes of this Report, along with the NI43-101 report, is to support SRG in further developing the project definition, to help SRG in deciding to further pursue the project and to help build stakeholder confidence in the project and to update the 2019 estimate.

21.1.1.3 Scope Covered by the Capex

The initial Capex estimate includes all Projects' direct and indirect costs to be expended during the implementation of the Lola project, inclusive of an upcoming basic engineering as well as the execution phase, complete with detailed engineering. The Capex is deemed to cover the period starting at the approval by SRG Graphite of this Report and finishing after commissioning is achieved. It should hence be understood that this Capex excludes transfer to SRG operations, performance test, start-up, ramp up and operations.

The sustaining Capex estimate includes all Projects' direct and indirect costs to be expended throughout the life of mine.

21.1.1.4 Mandate

For this Report, DRA is responsible for updating the 2019 FS estimate to Q4 2022 prices whilst also increasing the process plant throughput from 50,000tpa to 94,000tpa.

21.1.1.5 *CAPEX PRESENTATION*

All capital costs are expressed in United States Dollars (USD). Currency exchange rates are dated 1Q 2023. Inflation and risk are not included in the estimate.

A cost summary of the initial Capex is presented below.

Table 21.1– Initial Capex Summary

Description	Total (USD
MINING	8,221,664
Tailings & Water Management	3,560,996
On-Site infrastructures	10,761,494
Concentrator	61,694,960
Preliminary and General Expenses (Contractor)	16,096,695
Electric	35,675,737
Indirect costs	25,369,273
OWNER'S COSTS	6,363,845
Contingency, escalation, and risk	16,933,883
Grand Total	**184,678,547**

Source: DRA. 2023

Table 21.2 – Initial Capex Summary by WBS

WBS	WBS Breakdown	Sum of Total
1100	Crushing, stockpile & reclaim	6,278,221
1200	Comminution and Rougher Flotation	14,297,192
1300	Polishing & cleaner flotation	6,613,084
1400	Graphite tailings dewatering	4,466,688
1500	Graphite concentrate dewatering	6,214,122
1600	Graphite sizing and bagging	2,185,785
1700	Reagent system	1,118,728
1800	Plant Utilities - Water and Air	2,457,762
2100	Tailings pond	2,175,448
2200	Tailings piping and return lines	831,192
3300	Access Roads	81,812
3400	Non-Process Building	1,034,864
3610	Plant Mobile Equipment	4,100,331

WBS	WBS Breakdown	Sum of Total
3800	Camp	1,766,618
4100	Power plant	1,181,641
4200	Concentrator	27,477,410
4400	Pole line 11 kV Site distribution	406,293
6100	P & G's Bulk Earthworks	6,390,000
6300	P & G's SMP (Structural Steel, Mechanical & Piping)	6,748,313
7100	Pre-production	7,665,273
7200	EPCM services	14,347,871
7300	Vendor commissioning	396,880
7500	Spares	2,959,249
8700	Owner costs	6,363,845
9110	Contingency, escalation and risk	16,933,883
4000	Electric	115,361
6200	P & G's Concrete	781,104
6400	P & G's Buildings	1,481,000
1120	Mineral Sizer and crushed ore stockpile	130,107
1140	Crushed ore reclaim and Mill Feed	956,792
1210	SAG Mill	3,062,222
1260	Rougher Flotation	1,090,530
1310	Polishing Mill #1 & 2	659,699
1320	1st Cleaner Flotation	479,445
1330	Polishing Mill #3	557,976
1340	2nd Cleaner Flotation (Coarse)	449,388
1420	Tailings Thickening	2,471,075
1540	Concentrate Filtering	3,611,389
1760	Floc	229,278
1820	Process Water	5,943
1840	Raw Water (Fresh Water)	267,761
1860	Air Distribution	97,672
4510	Fuel station (HFO & LFO)	256,783
0221	Support Equipment	270,000
0611	Mine development	549,129

WBS	WBS Breakdown	Sum of Total
1910	Concentrate Transport Equipment	3,812,000
0121	Main Haul Road	5,651,541
0441	Road to Explosives	36,082
2121	Tailings Access Road	88,961
3211	Plant Site Terrace	3,548,060
0451	Explosives Terrace	34,101
3316	Security and access control, c/w gate #1 & #2	54,004
3210	Site Development	175,805
2511	Plant Sedimentation Pond	456,521
0123	NP6: Branch from Main to Overburden Dump 1	1,680,810
4210	Concentrator	5,160,615
4310	Crusher	1,077,633
2512	Access Road to Water Settling Pond	8,874
6600	P & G Mining	696,278
1900	Concentrator Plant Services	182,104
Grand Total		**184,678,547**

Source: DRA, 2023

Table 21.3 – Initial Capex Summary by Commodity

Row Labels	Sum of Lab mh sum	Sum of Lab $ sum	Sum of PE $ sum	Sum of BM $ sum	Sum of SC $ sum	Sum of Other $ sum	Sum of Total $
Site Works	-	-	-	-	-	-	-
Earthworks	-	-	-	280,751	13,629,457	-	13,910,208
Concrete	-	-	-	-	8,253,086	-	8,253,086
Structural Steel	-	-	-	4,595,912	3,426,089	-	8,022,001
Architectural and Unit Building	-	-	-	246,170	3,311,628	297,376	3,855,174
Mining	-	-	-	-	819,129	-	819,129
Mechanical Platework and Tanks	4,970	67,321	1,283,050	-	-	-	1,350,372
Mechanical Equipment	192,741	2,610,731	38,024,445	-	-	-	40,635,175
Piping	41,957	568,317	-	3,916,360	-	-	4,484,676
Electrical Equipment	15,360	-	-	21,738,982	4,503,781	-	26,242,762
Conduit and Cable Tray	8,513	-	-	1,434,687	145,785	-	1,580,473
Wire and Cable	9,351	-	-	4,749,466	841,207	-	5,590,673
Instrumentation	4,819	65,268	-	1,235,712	58,141	-	1,359,121
Field Indirect	-	-	-	-	-	31,733,118	31,733,118
Contingency, Escalation and Risk	-	-	-	-	-	16,933,883	16,933,883
Other Indirect	-	-	-	-	3,812,000	-	3,812,000
Preliminary & General Expenses (Contractor)	-	-	-	-	16,096,695	-	16,096,695
Grand Total	**277,711**	**$3,311,637**	**$39,307,495**	**$38,198,040**	**$54,896,998**	**$48,964,377**	**$184,678,547**

Source: DRA. 2023

21.1.1.6 *Capex Estimate Accuracy*

The accuracy of the initial Capex estimate is assumed at ±15.

21.1.1.7 *Deliverables*

The Capex is developed based on the following list of deliverables:

- Project description;
- Mine plan, complete with initial mining equipment and pre-production costs;
- Mechanical equipment list;
- Material Take-Offs (MTO) for all the civil works, earthworks, concrete, structural and miscellaneous steel, buildings;
- MTO for major electrical equipment, including the power plant;
- MTO for tailings storage, including tailings' roads, as well as tailings and reclaim water pipelines;
- Overall general arrangement plan.

21.1.1.8 *Estimate Coding*

All estimate line items were coded using the developed Work Breakdown Structure (WBS). some adjustments were made to better encompass the scope of work. Also, discipline codes were used to group the various activities, and to enable the use of standard unit hours and material rates.

21.1.1.9 *Currency Exchange Rates*

All costs were expressed in their native currency. Currency exchange rates were based on the XE.com website. The following table lists the currencies used for the estimate along with currency exchange rates dated January 17, 2023.

Table 21.4 – Currency Exchange Rates

Source Currency	Description	Base Currency	Currency Exchange Rate	Reverse Currency Exchange Rate
USD	United States Dollar	USD	1.0000	1.0000
CAD	Canadian Dollar	USD	0.7463	1.3400
EUR	European euro	USD	1.0870	0.9200
CNY	Chinese Yuan Renminbi	USD	0.1477	6.7700
AUD	Australian dollar	USD	0.6922	1.4447
ZAR	South African rand	USD	0.0588	17.0000

Source Currency	Description	Base Currency	Currency Exchange Rate	Reverse Currency Exchange Rate
GNF	Guinean Franc	USD	0.0001	9,090.9091
CFA	Franc BEAC	USD	0.0017	580.7201
GBP	Great Britain Pound	USD	1.2701	0.7873
MAD	Moroccan Dirham	MAD	0.1048	9.5459

Source: XE.com, January 17, 2023

21.1.1.10 *Estimating Software*

The Capex estimate was developed using MS Excel.

21.1.2 Methodology

21.1.2.1 *Plant Equipment and Bulk Quantities and Material Costs*

A mechanical equipment list was developed by the engineering team of DRA. Quantity estimates, supplemented by general arrangements drawings, were used for civil works, including earthworks, concrete, and structural steel. To ensure the entire scope coverage, some allowances were added, based on DRA's experience. Piping as well as instrumentation and controls, were factored from mechanical costs.

21.1.2.2 *Reference Documents*

The estimate is developed in accordance with the project criteria. Specifically, the estimate was based on the following:

- Project EPCM Schedule;
- Process Design Criteria;
- Engineering Discipline Design Criteria;
- Process Flow Sheets;
- Single Line Diagrams;
- Mechanical and Electrical Equipment Lists;
- General Arrangement and Stockpile Layout Drawings;
- Discipline MTOs;
- Vendor Quotations;
- Historical Data;
- Specific unit rates computed from adjudicated contractor's bids;
- Drawings.

21.1.3 Estimate Execution

The capital cost estimate is organized in accordance with the Project Work Breakdown Structure (WBS) defined for both direct and indirect areas,

21.2 Basis of Estimate – Direct Costs

21.2.1 Quantities

Engineering MTOs are based on "neat" quantities derived from project drawings and sketches. No allowances are included in the MTO's, for any discipline. Quantities are estimated where drawing information is not available.

Metric units are assumed throughout the estimate except for piping. Pipe sizing is defined in inches of nominal diameter.

21.2.2 Unit Quantity Preparation

Quantity preparation is the responsibility of the discipline engineering leads. The MTOs, by discipline, are reviewed on an on-going basis as MTO assumptions are defined.

MTOs are produced primarily from drawings generated during the Project.

21.2.3 Civil

All earthworks' quantities are taken off neat in place, with no allowance for swell or compaction of materials.

Mass earthworks estimates are based on soil studies information, Autodesk, land desktop models, drawings, and sketches. Waste allowance is included as per discipline by the estimating team. Production rates for mass earthworks are not used, rather all-in rate prices for the local area as obtained from adjudicated all-in direct cost rate obtained from updated bids received vendors were utilized. It is assumed that the all-in rate included for material cost if needed, equipment, small tools, labour and benefit cost, contractor's overhead, and profit.

Detailed excavation and backfill quantities for buildings and structures were developed for each area, based on estimated foundation sizes. An allowance for hauling materials one (1) kilometre is included. Costs include loading, crushing, screening and delivery to the area of operation.

21.2.4 Concrete

Concrete MTOs are taken off neat, without allowances for over pour or wastage. No allowance for these items within the concrete supply price is included. Production rates for concrete are not used, rather all-in rate prices for the same sub-region (Cote d'Ivoire) obtained from a project currently under execution.

It was assumed that the all-in rate includes for material cost, equipment, small tools, labour and benefit cost, contractor's overhead, and profit. Quantities for rebar, formwork and miscellaneous steel have their all-in price build-up calculation separate from the concrete pricing.

MTOs are developed based on concrete shape and forms. Each concrete shape includes concrete, rebar, formwork, and additives. Inserts, embedded material, coatings, liners, and painting are itemized separately in the estimate.

21.2.5 Structural Steel

Structural steel MTOs are developed from sketches taken from general arrangement and layout drawings. A Discipline allowance is applied for cut and waste, connections, clips, and hardware.

A supply only (delivery cost excluded) rate for the local area as obtained from updated adjudicated all-in direct supply rate obtained from bids were utilized and installation production rate was then multiplied by the productive factor and the unit labour rate for structural steel. The supply cost and installation cost were then added together to arrive at the total cost for all the various steel profile including light, medium, heavy, and extra heavy. Structural steel delivery cost is added to the project freight cost.

21.2.6 Architectural

Architectural MTOs are developed from general arrangement and layout drawings for the appropriate area as required.

All building components (i.e., interior partitions, doors, windows, toilets, and accessories, etc.) have been quantified and priced.

All buildings are assumed stick-built with separate allowances for plumbing, electrical, furnishings and grounding.

A supply only rate for the local area as obtained from adjudicated all-in direct supply rate obtained from updated bids were utilized and installation production rate was then multiplied by the productive factor and the unit labour rate for architectural buildings. The supply cost and installation cost were then added together to arrive at the total cost for all the various items including walls, roofing, block-walls, bricks, partitions, hardware, etc. Required foundations and detailed earthworks were also provided in the MTO's and priced accordingly.

21.2.7 MECHANICAL

The mechanical equipment descriptions, quantities, sizes, capacities, equipment specifications and powers are provided in the project Mechanical Equipment List.

Budgetary quotations were obtained for almost all process plant equipment and plateworks, totalling $39.3 MUSD and all the power plant and major electrical equipment which is equivalent to 98% of total direct equipment costs. The balance of the plant equipment costs was generally developed based on an internal database, representing 2% of total direct equipment costs. Some equipment costs were estimated based on experience where no relevant data was available.

Detailed budgetary pricing from at least three (3) vendors for each process equipment vendor were solicited. Then a detailed technical and commercial adjudication was carried out to select the cost carried in the estimate for each process equipment. A similar methodology was adopted for the mining and electrical equipment to arrive at the preferred cost adopted in the estimate.

No allowance is included in the estimate for HVAC equipment as most of the buildings are open, where air conditioning is needed, it has been included in the architectural account.

21.2.8 ELECTRICAL

Electrical costs within battery limits by WBS area are based on single line diagrams, engineering lengths, size, cable types and cable tray run from equipment to the various MCCs and electrical panels as applicable.

Supplier budgetary quotations for major electrical equipment including switchgear, transformers and MCC and the power plant from at least two (2) vendors suppliers and installation of bulk materials companies were obtained and analyzed both for technical and commercial compliance. The recommended supply costs and rates were utilized in the estimate.

Day tanks for HFO and diesel were included in the estimate whilst the power plant price includes the supply of a dedicated fuel tank farm.

21.2.9 INSTRUMENTATION

The cost estimate of instrumentation within battery limits is based on equipment factor allowances.

The plant distributed control system (DCS) is based on equipment factor allowances and includes vendor support for programming and system configuration.

21.2.10 Piping

Process and service piping within the battery limits of the process plant is estimated on an equipment factor allowance basis. Base documents are plot plans, flow sheets and general arrangement drawings.

Tailings and reclaim water piping runs were estimated from engineering drawings and subsequently priced in detail from the pipe size and specifications provided.

21.3 Labour Costs

Labour manhours were developed from adjudicated contractors' bids as well as obtained from pricing for each site scope of work. The productivity factors (PF) vary as a function of the expected qualifications, as well as of the building height and the congestion; they vary from 1.00 to 1.25. It should be noted that a PF of 1.0 refers to projects being executed with better-than-average skill, based on a 40-hour workweek, within reasonable commuting distance, limited in-plant movement, favorable weather, etc.

Labour rates were developed based on salary information reflecting local Guinean labour. They are inclusive of salaries, allowances for vacation, overtime, and premium work, and exclusive of tools and consumables, construction equipment, overhead and profit, see **Error! Reference source not found.**. Contractors' indirect costs, namely mob and demob, small tools, construction equipment, consumables, PPE, temporary site establishments, supervision, and administration, as well as overhead and profit are provided for in the preliminary and general expense (P&G) carried in the estimate as a separate line item.

It is assumed that the local community of Lola can accommodate the direct and indirect workforce estimated for the Project, including occasional site visits and vendor representatives. The workforce is estimated to reach 240 at peak with an average of 170. Local accommodation and rotational transportation costs are included as part of construction field indirect costs.

Table 21.5 – All-in Crew Rate Table

Crew Code	Description	Base Crew Rate	Allowance for Vacation	Allowance for OT	Allowance for Premiums + Bonus (25%)	Tools & Consumables	Other contractors' indirect	Overhead & Profit	Rate (GNF) Guinean Franc	Rate ($ USD)
A	Site development	8.00	0.74	0.39	2.28	0.00	0.00	0.00	103695.92	11.41
B	Earthworks	8.00	0.74	0.39	2.28	0.00	0.00	0.00	103,695	11.41
C	Concrete	9.00	0.83	0.43	2.57	0.00	0.00	0.00	116,657.91	12.83
E	Structural steel	10.00	0.92	0.48	2.85	0.00	0.00	0.00	129,619.90	14.26
F	Architecture	9.00	0.83	0.43	2.57	0.00	0.00	0.00	116,657.91	12.83
J	Mining	10.00	0.92	0.48	2.85	0.00	0.00	0.00	129,619.90	14.26
K	Pipeline	9.50	0.88	0.46	2.71	0.00	0.00	0.00	123,138.90	13.55
L	Mechanical platework	9.50	0.88	0.46	2.71	0.00	0.00	0.00	123,138.90	13.55
M	Mechanical equipment:	9.50	0.88	0.46	2.71	0.00	0.00	0.00	123,138.90	13.55
P	Piping:	9.50	0.88	0.46	2.71	0.00	0.00	0.00	123,138.90	13.55
Q	Electrical equipment:	7.00	0.65	0.34	2.00	0.00	0.00	0.00	90,733.93	9.98
R	Conduits and trays	7.00	0.65	0.34	2.00	0.00	0.00	0.00	90,733.93	9.98
S	Wires and cables	7.00	0.65	0.34	2.00	0.00	0.00	0.00	90,733.93	9.98
T	Instrumentation:	9.50	0.88	0.46	2.71	0.00	0.00	0.00	123,138.90	13.55

Source: DRA, 2023

21.4 Preliminary and General Cost (P & G's)

P & G's are contractor's indirect cost but are accounted for as part of the project or owner's direct cost. These costs were provided by each contractor as part of their bid by scope of work. These costs typically include:

- Contractor's contractual requirements such as plans, procedures, security and all other expenses incurred in executing this contract.
- Contractor's mobilization cost for all temporary works, labor, equipment and mobile equipment, facilities, supplies, materials, tools, personnel, medical, testing including cleaning services. Fuel storage if needed will be included in this account as well as vehicles, generators, portable washrooms and washing facilities.
- Contractor's demobilization of all temporary equipment and facilities
- Management supervision, field engineering, etc.

21.5 Indirect Cost

Table 21.6 – Indirect Cost

WBS	Description	Total ($ USD)
7122	Temporary Buildings & Facilities	1,443,708
7123	Temp Construction Utility Services	2,200,00
7124	Dust Suppression & Loss of Productivity	277,160
7132	Construction Site Supports & Operations	82,500
7133	Construction Camp, Catering & Services	244,100
7134	HSE Program & Training	200,000
7125	Construction Fuel	823,315
7511	Spare Parts	2,119,594
7521	Initial Fills	839,655
7110	Freight	4,374,490
7311	Vendor's Representatives	396,880
7210	Detail EPCM	13,496,702
7260	Third Party Engineering	300,000
7250	Commissioning & Start-up	551,168
	Total Indirect Costs	25,369,272
8711	Owner's Cost	6,363,845

WBS	Description	Total ($ USD)
9110	Contingency, escalation, and risk	16,933,882
	Total Indirect Costs, C & E and Owner's Cost	**48,667,000**
	Numbers may not add up due to rounding	

Source: DRA, 2023

21.5.1 Construction Field Indirect

This component includes all temporary buildings and services required during construction and commissioning. These costs are normally estimated in the construction execution plan but are factored as a percentage of total direct cost and include if needed, for the following:

- Offices;
- Temporary warehouses;
- Temporary construction services;
- Construction water supply;
- Sewage facilities;
- Construction communications;
- Laydown areas;
- Roads and maintenance;
- Heavy lifting cranes rentals (including mobilization & demobilization above 30 t);
- Materials handling management (off-loading and loading);
- Vehicles.

21.5.2 Construction Support

Temporary construction services include office janitorial and garbage services for the EPCM and Owner's project teams; QA surveying; site access control; security services; personnel physicals, safety induction and badges, safety, first aid, medical supplies, and services. The costs for these services are based on the EPCM and Owner's organizational charts, project construction schedule, and experience with projects of similar size and duration.

An allowance is made for soils, concrete and piping NDT (non-destructive testing), freight and duty rates for construction management.

Allowances for personnel protective equipment (PPE) for the EPCM and Owner's project teams including hardhats, safety glasses, and safety shoes are included in the Owner's cost.

This item is calculated as a percentage of the total direct cost.

21.5.3 Dust Suppression and Loss Productivity

Dust control is a normal site condition in this region of world and in a hot climate, provision has been made in the estimate for dust suppression particularly on the roads around the process plant during construction. In-plant dust suppression within scope areas is assumed to be included in the scope of work within that area.

21.5.4 Construction Camp, Catering and services

As site is within short proximity to local towns, no allowance is included for construction camp and catering. It is assumed that the construction crews will have or find local accommodations. Provision to accommodate for the site EPCM and Owner's team in nearby rent villas (3) for the duration of the construction period has been provided at the current rate of $1,000 USD per month per villa paid by the owner. Catering and accommodations services has also been computed using the current rate of $10 USD per man-day paid by the Owner.

21.5.5 Health, Safety and Environmental Protection

An allowance is provided in the estimate to provide for HSE program.

21.5.6 Construction Fuel

Diesel fuel needed to operate the diesel generators at the EPCM staff accommodation (3# 60kW gen set) and 1 # 150 kW gen set at the construction site have been computed based on each generator's consumption rate and duration of day operation multiplied by the anticipated construction duration to arrive at the total volume of fuel required. Added to this is an allowance to provide fuel for the construction equipment. The total volume is then multiplied by the current negotiated delivered to site price for diesel. Additional cost is carried as an allowance for the storage tanks.

21.5.7 Spare Parts

Major spares as defined as critical spares needed for the smooth operation of the plant. The price for recommended critical spares by the various process equipment vendors have been reviewed by the project team and appropriate values carried in the estimate. Where there are no recommendations from vendors and critical spares are deemed necessary, 3% of the initial equipment cost is assumed. Yearly operational spares are not included as they are part of the Opex. An allowance for electrical and instrumentation spares have been included at 3% of the equipment cost for the pieces deemed essential.

21.5.8 First Fills

The estimated cost to supply plant first fills include such items as ball charge, lubricants, fuels, and reagents. First fills do not include general warehouse inventory and staff. First fills are calculated based on specification and data provided by the process engineering team.

21.5.9 Freight

Freight costs as provided with vendor quotations are included. The remaining freight costs are factored as a percentage of the equipment cost based on 6.0% ocean freight, and 1.0% overland to site as the project strategy is to procure the graphite transportation fleet ahead of time and use these to conveying the process equipment and other materials from the port of Monrovia to the Lola site in Guinea. Allowances have also been included for port charges at 0.5%, forwarding fees at 0.5% and custom brokerage fees at 0.5% of the equipment cost based on experience on other projects.

It is assumed that all bulk material prices include transportation, i.e., delivered to site basis with the exception for structural steel which is priced ex-works. Freight cost for structural steel has therefore been included in the estimate based on the above assumptions.

Duties are not included in this estimate.

21.5.10 Vendor Representatives

Costs for Vendor representatives at site are developed based on information provided by vendors. Travel time to or from site of one day is included with the time required on site. Airfares, lodging, and other out-of-pocket expenses are allowed for in the rate per round trip. All-in daily rates provided by vendors with their equipment pricing are adjusted to reflect the planned construction work week circle (?).

Vendor representative costs are included where vendors state they must be on-site for installation to maintain equipment warranty. Vendor representative assistance have also been included during commissioning for some major equipment.

21.5.11 Owner's Costs

Owner's costs have been included in the estimate as provided by SRG.

21.5.12 Engineering and Procurement Services

The engineering and procurement (EP) costs are costs to design all elements and processes for the scope of work defined within the project and to procure all equipment and services necessary to construct, commission and operate the new facilities. This also includes office engineering support during the construction phase. EPCM cost estimated at 8.75% of total direct cost.

21.5.13 CONSTRUCTION MANAGEMENT

The construction management (CM) estimate is based on previous DRA project experience. The execution basis of the CM estimate is that multiple contractors will work on unit price, or lump sum contracts.

The CM estimate covers the field- or site-based services required for constructing and commissioning the process facilities and associated infrastructure.

The CM estimate includes the following site-based services:

- Project management;
- Field engineering;
- Site document control;
- Construction management;
- Industrial relations;
- Construction supervision to general superintendent;
- Health, safety, environment, and community;
- Site administration;
- Field human resources;
- Site quality assurance and control;
- Site project controls (cost control and schedule);
- Field accounting;
- Site computers and information technology services;
- Site procurement;
- Field receiving and warehousing;
- Field contract administration.

The CM costs are calculated as a percentage of the total direct cost and indirect cost excluding engineering and procurement, contingency and Owner's Cost.

Support expenses for CM staff are included in the construction indirect field costs. These expenses include offices, vehicles, communications, and transportation.

21.5.14 PRE-COMMISSIONING AND COMMISSIONING

The commissioning estimate includes trade crews to support commissioning for a period of three months. The cost for commissioning assistance by the EPCM contractor, based on providing technical staff, is determined based on the execution schedule and man-power plan. This also includes an allowance for commissioning spares, which are based on vendor recommendations and, where not provided, a factored allowance on each equipment. The account is based allowed for as a factor of the total mechanical equipment cost.

21.5.15 THIRD PARTY ENGINEERING

This allowance is included in the Estimate to allow for if needed third party engineering for items such as additional soil test for roads, equipment foundations, etc.

21.5.16 CONTINGENCY

Contingency is a monetary provision in the estimated cost of a project to cover uncertainties or unforeseeable elements of time and cost within the project scope as estimated. Contingency is also meant to cover normal inadequacies that are inherent in design definition, execution definition, and

estimating deficiencies, but it does not cover scope changes. Inadequacies are inherent in any project, due to the dynamic nature of project engineering and construction.

Contingency is developed for the estimate based on the degree of definition of scope and budgetary bids from vendors. The recommended contingency is a percentage of total direct and indirect costs as per **Error! Reference source not found.**. The final project contingency in this case is 9.15% of t he total cost.

Table 21.7 – Project Contingency Analysis

Item	Description	Direct Costs	Contingency $	Cont. %
Process Plant				
	Mining (Area 0000)	8,221,664	822,166	10%
	Concentrator (Area 1000)	61,694,960	5,244,072	8.50%
	Tailings & Water mgt. (Area 2000)	3,560,996	534,149	15%
	On-site Infrastructure	10,761,494	1,076,149	10%
	Electric Power Plant (Area 4000)	35,675,809	1,783,790	5%
	Off-site Infrastructure (Area 5000)		-	15%
	P & G Expenses (Area 6000)	16,096,695	1,609,670	10%
	Subtotal Direct Costs	*136,011,618*	*11,069,997*	

Item	Description	Direct Costs	Contingency $	Cont. %
Indirect Costs				
7122	Temporary Buildings & Facilities	1,443,708	360,927	25%
7123	Temp Construction Utility Services	220,000	55,000	25%
7124	Dust Suppression & Loss of Productivity	277,160	69,290	25%
7132	Construction Site Supports & Operations	82,500	20,625	25%
7133	Construction Camp, Catering & Services	244,100	61,025	25%
7134	HSE Program & Training	200,000	50,000	25%
7125	Construction Fuel	823,315	205,829	25%
7511	Spare Parts	2,119,594	423,919	20%
7521	Initial Fills	839,655	167,931	20%
7110	Freight	3,899,516	779,903	20%
7311	Vendor's Representatives	396,880	79,376	20%
8711	Owner's Cost	6,363,845	1,272,769	20%
7610	Taxes and Duties	-	-	25%
7210	Detail EPCM	13,455,143	2,018,271	15%
7260	Third Party Engineering	300,000	60,000	20%
7250	Commissioning & Start-up	551,168	137,792	25%
	Subtotal Indirect Costs	*31,216,584*	*5,762,657*	
	Total Direct & Indirect Cost	*167,228,202*	*16,832,654*	
	Contingency calculated	*9.15%*		
	TOTAL FOR PROJECT	**184,061,000**		

Numbers may not add up due to rounding

Source: DRA, 2023

21.6 Qualifications

All estimates are developed within a frame of reference defined by assumptions and exclusions, grouped under the estimate qualifications. Assumptions and exclusions are listed in the following paragraphs.

21.6.1 Assumptions

The following items are assumptions concerning the Capex:

- Estimate is based on rotations schedule of 4 and 2, i.e., 4 weeks in and 2 weeks R&R, with traveling during the 2 weeks R&R.
- Estimate is based on 6 days at 8 hours per day workweek.
- Estimate assumes that labor skills will be medium.
- Estimate assumes all equipment and materials will be new.
- Estimate assumes aggregates used for fill, adequate both in terms of quality and quantity, will be available within a 5 km radius from site.
- Estimate assumes overburden disposal will be within a 5 km radius from the construction site.
- Estimate assumes fresh water, adequate both in terms of quality and quantity, is available locally at no costs and does not need any treatment to be used for concrete mix, leak/hydro testing, flushing, cleaning, etc.
- Estimate assumes drinking water will be bottled.
- Estimate assumes EPCM and Owner's teams will be in sufficient quantity so as not to delay contractors.
- Estimate assumed smooth coordination between contractors' battery limits.
- Estimate assumes 40% of manual labor will be sourced within the Lola area, while 60% will be a combination of remote Guinean workers and expats from neighboring countries.
- Estimate assumes no labor decree is in effect in Guinea.
- Estimate assumes no camp or catering.
- Estimate assumes no limitation to site access.
- Estimate assumes construction contract types will be either lump sum, cost plus, or unit rates.
- Estimate assumes no underground obstructions of any nature.
- Estimate assumes no hazardous materials in excavated materials.
- Estimate assumes no delay in Client's decision-making.
- Estimate assumes no delay in obtaining permits and licenses of any kind.
- Estimate assumes no interruption in job continuity.
- Estimate assumes normal BFSk workforce.
- Estimate assumes engineering progress prior to the execution will be sufficient to avoid rework.

21.6.2 Exclusions

The following items are not included in the Capex:

- Currency fluctuations;

- All scope changes;
- Cost related to any force majeure;
- Operating cost;
- Working capital;
- Inflation beyond the Capex estimate base date;
- Expected Monetary Value (EMV) of identified risks;
- Financing and interest charges during construction;
- Changes to design criteria;
- Scope changes or accelerated schedule;
- Delays resulting from community relation, permitting, project financing, etc.;
- All taxes, customs charges, excises, etc.;
- Changes in Guinean, Liberian or Canadian law.

21.7 Sustaining Capital

For the sustaining Capex, no mining equipment replacement was considered as the project assumes a contractor-mining approach. Life of Mine (LOM) expansion of the mine haul roads was provided by the mining group. Also included in the sustaining capital is the cost of the overhauls of the power plant generators as recommended by the supplier. Phased concentrate transportation equipment and off-site infrastructure cost as well as phased land acquisition cost were also included in the estimate.

As the total quantity of tailings is the same as that of the 2019 project, the tailings area estimate was based on the 2019 cost plus an inflation factor of 15%. The total cost was distributed over the LOM, proportionally to the tailings volume generated each year as compared to the total.

No closure costs were included as it is assumed that at the end of the LOM, all project t equipment, materials, and installations will be handed over to local authorities in lieu of any cost associated with the closure of the mine.

A 10% contingency was added.

The sustaining capital distribution is shown in Table 21.8 below.

Table 21.8 – Project Sustaining Capital

Description	Total ($ USD)
Owner Mine Equipment & Contractor demobilization	601,943
Mine Haulage Roads	6,652,823
Power Plant	7,386,837
Tailings Management	54,621,759
Concentrate Transportation Equipment	10,322,400
Off-site Infrastructure *	4,634,122
Land Acquisition	1,010,020
Contingency (10%)	8,522,990
Total Sustaining Capital	**93,752,895**
Closure Costs	none

* Lola Road improvement and Customs building

Source: DRA, 2023

21.8 Operating Cost Estimate (OPEX)

21.8.1 Introduction

This Section describes the basis of estimate and approach taken in calculating the operating costs for the Project.

The Opex is presented in United States Dollars (USD). DRA developed these operating costs in conjunction with SRG, with specific inputs provided by external consultants for concentrate transportation.

The following are examples of cost items specifically excluded from the Opex:

- Value Added Tax (VAT);
- Project financing and interest charges.

Table 21.9 presents the operating costs summary by major project area over the LOM.

The average operating cost, without transport for the first 16 years is $447/t and increasing thereafter.

Table 21.9 – Operating Costs Summary

Description	Average Annual Costs ($)[1]	Cost / tonne of concentrate ($/t)	Total Cost (%)
Mining	15,577,900	170.75	29.1
Process	30,065,524	325.26	55.4
General & Administration	4,791,723	51.84	8.8
Sub-Total[2]	50,435,147	547.9	93.2
Concentrate Transport	3,673,161	39.74	6.8
Total[2]	**54,108,308**	**587.6**	**100.0**

1. Excludes first and last year
2. Figures may not add due to rounding

Source: DRA, 2023

21.8.2 Mining Operating Costs

The mine operating cost was estimated for each period of the mine plan. This cost is based on equipment operation costs, mine-related manpower, explosives cost as well as the costs associated with dewatering, road maintenance and other activities. The breakdown of these costs is summarized in Table 21.10. To determine the operating cost, the following assumptions were used: Diesel Fuel Price: $ 1.09 / L.

The mine operating cost was estimated average $ 3.24 /t moved for the life of the open pit, an average $ 170.75/t of concentrate.

Table 21.10 – Summary of Estimated Annual Mining Operating Costs

Type of Material	Average Annual Cost ($/year)	Cost ($/tonne moved)	Cost ($/tonne of concentrate)	Total Costs (%)
ROM – Oxide	4,611,100	0.96	50.54	34.1
ROM – Fresh Rock	3,655,800	0.76	40.07	18.1
Waste Oxide	3,626,200	0.75	39.75	28.1
Waste Fresh Rock	3,489,400	0.73	38.25	17.9
Rehandling	195,600	0.04	2.14	1.8
Total Operating Costs	**15,577,900**	**3.24**	**170.75**	**100.0**

Source: DRA, 2023

21.8.3 Processing Operating Costs

Based on nominal annual production of 92,435 tonnes of graphite concentrate, the estimated process operating costs are divided into eight (8) main components: Manpower, electrical power, grinding media and reagent consumption, dryer fuel consumption, consumables, and wear items, bagging system, mobile equipment and spare parts and miscellaneous. The breakdown of these costs is summarized in Table 21.11 and in Table 21.12. An important distinction between the two summaries is that saprolite in Table 21.11 represents only the first 9 months of production of the plant. It does not represent a yearly cost. Additionally, the period includes the plant startup, thus, the first few months of production are not at full capacity.

Table 21.11 – Summary of Estimated Process Plant Opex for Saprolite feed based on 1.82 Mt feed throughput (9 months)

Operating Cost	Cost ($ for first 9 months)	Cost ($/tonne of feed)[1]	Cost ($/tonne of concentrate) [2]	Total Costs (%)
Manpower	2,287,975	1.26	36.94	10.8%
Electrical Power	9,341,279	5.14	150.83	44.2%
Grinding Media and Reagent Consumption	1,853,273	1.02	29.92	8.8%
Dryer Fuel Consumption	3,048,800	1.68	49.23	14.4%
Consumables and Wear Items	2,417,129	1.33	39.03	11.4%
Bagging System	1,024,860	0.56	16.55	4.8%
Mobile Equipment	878,936	0.48	14.19	4.2%
Spare Parts and Miscellaneous [3]	294,686	0.16	4.76	1.4%
Total Operating Costs	**21,146,937**	**11.64**	**341.45**	**100.0**

1. Based on feed throughput of 1,816,876 t for the first 9 months of production
2. Based on production of 61,933 t of graphite concentrate for the first 9 months of production
3. Strategic spare parts, estimated as 1% of total equipment capital cost + transport cost.
4. Figures may not add due to rounding

Source: DRA, 2023

Table 21.12 – Summary of Estimated Annual Process Plant Opex for a feed blend of 45% Fresh rocks and 55% Saprolite based on 2.57 Mt/y feed throughput

Operating Cost	Cost ($ for first 9 months)	Cost ($/tonne of feed)[1]	Cost ($/tonne of concentrate) [2]	Total Costs (%)
Manpower	3,050,633	1.19	33.00	10.1%
Electrical Power	12,924,294	5.04	139.82	43.0%

Operating Cost	Cost ($ for first 9 months)	Cost ($/tonne of feed)[1]	Cost ($/tonne of concentrate) [2]	Total Costs (%)
Grinding Media and Reagent Consumption	3,633,466	1.42	39.31	12.1%
Dryer Fuel Consumption	4,065,067	1.58	43.98	13.5%
Consumables and Wear Items	3,297,641	1.29	35.68	11.0%
Bagging System	1,529,595	0.60	16.55	5.1%
Mobile Equipment	1,171,914	0.46	12.68	3.9%
Spare Parts and Miscellaneous [3]	392,915	0.15	4.25	1.3%
Total Operating Costs	**30,065,524**	**11.72**	**325.26**	**100.0%**

1. Based on feed throughput of 2,565,443 t/y
2. Based on production of 92,435 t/y of graphite concentrate
3. Strategic spare parts, estimated as 1% of total equipment capital cost + transport cost.
4. Figures may not add due to rounding

Source: DRA, 2023

21.8.3.1 Manpower Costs

It is estimated that there will be 114 employees. This includes:

- One (1) mill superintendent.
- Fifty-Eight (58) personnel dedicated to mill operations.
- Forty-Four (44) personnel dedicated to mill maintenance.
- Eleven (11) metallurgy personnel.

Table 21.13 depicts the manpower for the process facility.

Table 21.13 – Concentrator Plant Manpower Opex

Description	Number	Cost ($/year)
Administration	1	206,840
Operations	58	1,217,478
Maintenance	44	1,280,004
Metallurgy	11	346,311
Total	**114**	**3,050,633**

Source: DRA, 2023

The total annual cost for manpower is estimated at $ 3.05 M per year.

21.8.3.2 *Electrical Power Costs*

Electrical power is required to operate equipment in the processing plant such as conveyors, crushers, mills, screens, pumps, agitators, bagging system, services (compressed air and water), etc. The unit cost of on-site generated electricity was established at $ 0.186/kWh. The total annual cost for process plant electrical power is estimated at 12.9 M per year. For the first 9 months of saprolite, the estimated cost is $ 9.3 M.

The electrical power consumption was derived from the mechanical equipment list and from equipment suppliers power requirements. The estimated electrical operating costs is based on the plant operating 24 hours per day, 7 days per week, with a run time of 90% operating percentage, for a nominal annual production of 92,435 tonnes of graphite concentrate.

Table 21.14 shows the electrical consumption for the 9 months of saprolite feed and for the remainder of the LOM when processing fresh rocks in the feed blend.

Table 21.14 – Concentrator Electrical Power Costs

	Consumption (kWh/year)	Electricity ($/kWh)	Cost [3] ($/year)
Saprolite [1]	50,221,931	0.186	9,341,279
Fresh rocks feed blend [2]	69,485,454	0.186	12,924,294

1. Based on feed throughput of 1,816,876 t and production of 61,933 t of graphite concentrate for 9 months
2. Based on feed throughput of 2,565,443 t/y and production of 92,435 t/y of graphite concentrate
3. Figures may not add due to rounding

Source: DRA, 2023

21.8.3.3 *Grinding Media and Reagent Consumption Costs*

The SAG mill will need addition of steel balls to replace the worn balls to maintain the steel load in the mill and to perform proper size reduction on the material. Also, the polishing mills will require addition of ceramic media to replace the worn media. Consumption of the steel balls and ceramic media is based on abrasion index, power consumption and experience.

Diesel as graphite collector and MIBC as frother are the reagents required throughout the various stages of flotation. Flocculant is required for both thickeners' operation. The quantities were determined based on the test work.

The total annual cost for grinding media and reagent consumption is estimated at $ 3.6 M per year. For the first 9 months of saprolite, the estimated cost is $ 1.9 M.

Table 21.15 shows the costs related to grinding media and to plant reagents for the 9 months of saprolite feed and for the remainder of the LOM when processing fresh rocks in the feed blend.

Table 21.15 – Concentrator Grinding Media and Reagents Costs

	Saprolite [1] Cost ($/year)	Fresh rocks feed blend [2] Cost ($/year)
Grinding Media	414,902	1,205,245
Plant Reagents	1,438,371	2,428,221
Total	**1,853,273**	**3,633,466**

1. Based on feed throughput of 1,816,876 t and production of 61,933 t of graphite concentrate for 9 months
2. Based on feed throughput of 2,565,443 t/y and production of 92,435 t/y of graphite concentrate
3. Figures may not add due to rounding

Source: DRA, 2023

21.8.3.4 *Dryer Fuel Consumption Costs*

Diesel is used as heating source and supplied to the burners to heat the rotary tube of the graphite concentrate dryer. To dry the nominal 92,435 tonnes of graphite concentrate, the total annual cost for the dryer fuel consumption is estimated to be $ 4.1 M per year. Table 21.16 shows the yearly fuel consumption and fuel cost. For the first 9 months of saprolite, the estimated cost is $ 3.0 M.

Table 21.16 – Concentrator Dryer Fuel Costs

	Fuel Consumption (litre/year)	Fuel Cost ($/litre)	Cost ($/year)
Nominal 92,435 tonnes of graphite	3,729,419	1,090	4,065,067

Source: DRA, 2023

21.8.3.5 *Consumables and Wear Items Costs*

The consumption and costs for the mineral sizers wear parts, grinding mill liners, polishing mill liners, flotation cell wear parts, screen deck panels, 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 total annual cost for consumables and wear items is estimated at $ 3.3 M per year. For the first 9 months of saprolite, the estimated cost is $ 2.4 M.

21.8.3.6 *Bagging System Costs*

The costs of the big bags, wood pallets and stretch wrap related to the bagging system have been obtained from the equipment suppliers and from experience with similar operations. The total annual cost for bagging hardware is estimated at $ 1.5 M per year. For the first 9 months of saprolite, the estimated cost is $ 1.0 M.

21.8.3.7 *Mobile Equipment Costs*

The mobile equipment costs include diesel fuel for mobile equipment, maintenance, and replacement of worn part. The total annual cost for mobile equipment at the process plant is estimated at $ 1.2 M per year. For the first 9 months of saprolite, the estimated cost is $ 0.9 M.

21.8.3.8 *Spare Parts and Miscellaneous Costs*

The strategic spare parts and miscellaneous costs were estimated as 1.0% of the total equipment capital costs. The total annual cost is estimated at $ 0.4 M per year. For the first 9 months of saprolite, the estimated cost is $ 0.3 M.

21.8.4 Tailings Management Costs

The operating costs associated with the TSF have been integrated in G&A costs and in the Sustaining Capital cost. They include the costs associated with the maintenance of the TSF as follows:

- Day-to-day depositional management;
- Maintaining the pool wall;
- Maintenance and repairs to the slurry delivery pipeline and valves;
- Monitoring and cleaning of the toe drains, leakage detection;
- Seepage collection sump and seepage cut off trench manhole pump monitoring;
- General maintenance (cleaning trenches);
- Monitoring various components (freeboard, drain flows, water returns, rainfall, tonnes deposited, etc.);
- Maintenance and repairs to the slurry delivery pipeline and valves; and
- Quarterly inspections, monitoring and quarterly reports by the design engineer.

21.8.5 General and Administration Costs

The General and Administration (G&A) costs include the following categories:

- Manpower;
- General Services;
- Site Services.

The overall G&A annual costs are estimated at $ 4.8 M per year or 51.84 $/t of graphite concentrate. Given the nature of G&A costs, plant operations and throughput have little to no impact on these costs. As a result, G&A was assumed to be constant over the LOM except for the last year. Table 21.17 summarizes the G&A breakdown.

Table 21.17 – G&A Costs

Description	Annual Costs ($ USD) [1]
Manpower	2,464,523
General Services	1,396,700
Site Services	930,500
Total	**4,791,723**

1. Excludes last year

Source: DRA, 2023

21.8.5.1 MANPOWER

Project labour costs include management, finance, procurement, IT, site services (warehousing, kitchen, and camp operations), health & safety, security, environment, and power plant personnel for the site. No allowance is made for corporate staff members in Montreal.

The G&A labour complement and estimated annual compensation are summarized in Table 21.18.

Table 21.18 – G&A Manpower Costs

Description	No of employees	Total Cost ($ USD/y)
Management & Admin	13	586,344
Health, Safety & Environment	32	583,475
Site Services (Camp, Logistics, Surfaces Warehouse)	43	510,430
Maintenance (Mobile Equipment & General Site)	22	391,857
Power Plant	22	392,418
Total	**139**	**2,464,523**

Source: DRA, 2023

21.8.5.2 GENERAL SERVICES

General services include costs associated mining leases, insurance, safety supplies, legal services, community, and employee relations, among others. It also includes lodging and travel expenses for expatriate and non-local (i.e. Guinean employees coming from outside Lola or N'Zérékoré area) employees.

A summary of general services costs is provided in Table 21.19.

Table 21.19 – General Services Costs

Description	Annual Cost ($ USD)
Management, Administration & Accounting	
Mining leases and local taxes	7,079
Site insurance	270,000
Lodging	332,442
Travel expenses	176,963
Telecommunications	51,750
Garbage collection & disposal	23,000
Office supplies & misc. costs	17,250
IT maintenance & supplies	23,000
Purchasing & Warehousing	
Purchasing & warehousing supplies	17,250
Human Resources	
Training	57,500
Safety – equipment & supplies	180,000
Medical & first aid	34,500
Employee Relations	17,250
Community Relations	57,500
Legal	28,750
Miscellaneous supplies	23,000
Environmental supplies	57,500
Surveying supplies	23,000
Total	**1,396,733**

Source: DRA, 2023

21.8.5.3 Site Services

Site services includes various services for upkeeping of the site such as road maintenance, freshwater system maintenance and power costs for the site (excluding process plant which is priced under the Process operating costs).

Table 21.20 – Site Services

Description	Annual Cost ($ USD)
Fuel farm maintenance	220,800
Road maintenance	43,700
Fresh water system consumables	28,750
Onsite building & infrastructure maintenance	28,750
Power (excluding process plant)	302,725
Power line & substation losses	305,820
Total	**930,544**

Source: DRA. 2023

21.8.6 Graphite Transport Costs

Graphite will be transported from Lola to Monrovia using road trains. Each road train will be able to carry 80-tonne of graphite. Shipment frequency has been estimated at four (4) road trains per day, 6 days a week.

The logistics costs to export graphite from Lola through the port of Monrovia in Liberia have been estimated at $39.74 USD/t, "free on board" (FOB) Monrovia. Table 21.21 below summarizes the cost breakdown.

Table 21.21 – Export Logistics Cost Breakdown

Description	Average Annual Costs ($)	Cost / tonne of concentrate ($/t)
Fuel	463,469	5.01
Maintenance (Included in sustaining capital)	0	0.00
Manpower	224,687	2.25
Liberia transit cost	361,074	3.91
Guinean customs support	138,750	1.39
Terminal charges	1,513,378	16.37
Lading charges	999,297	10.81
Total	**3,700,655**	**39.74**

Source: DRA, 2023

21.8.6.1 Fuel

Fuel consumption has been estimated at 50 L/100 km. Given that the distance between Lola and Monrovia is 369 km, for a round trip of 738 km, annual fuel costs are estimated at $463,469 USD.

21.8.6.2 *MANPOWER*

Table 21.22 below summarizes the estimated manpower required to run the fleet of four (4) road-trains.

Table 21.22 – Graphite Transport Manpower Breakdown

Description	No of employees	Total Cost ($ USD/y)
Supervisors	1	17,687
Truck drivers	23	207,000
Total	**25**	**224,687**

21.8.6.3 *LIBERIA TRANSIT COSTS*

The port of Monrovia was chosen by SRG after a cost/benefit analysis exercise comparing it to the port of Conakry as well as two (2) other regional ports. The Liberian tax code provides a legal frame for transit. Transit tax was estimated at $250 per road-train for a total of $3.91 USD /t of graphite for an 80t payload road train.

21.8.6.4 *GUINEAN CUSTOMS SUPPORT*

The customs support cost is $1.39/tonne, as shown in the breakdown below.

Table 21.23 – Guinean Customs Support

Description	Total Cost ($ USD/y)
Manpower	101,250
Office expenses (IT, electricity, maintenance)	37,500
Total	**138,750**

Source: DRA. 2023

21.8.6.5 *TERMINAL AND LADING CHARGES*

Terminal and lading charges include document flow management, container tracking, freight administration and lading charges. Based on quotes provided by AP Moeller Terminal Company (APMT), these charges amount to $804.62 per container. SRG aims to ship graphite using forty-foot containers able to carry 29.6 tonnes of graphite each.

Table 21.24 – Terminal and lading charges

Description	US$/FEU	Cost / tonne of concentrate ($/t)
Terminal charges	484.62	16.37
Lading charges	320.00	10.81
Total	**804.62**	**27.18**

Source: DRA. 2023

22 ECONOMIC ANALYSIS

The project has been evaluated using discounted cash flow analysis (DCF). Cash inflows were estimated based on annual revenue projections. Cash outflows consist of operating costs, capital expenditures, royalties, and taxes. In addition, the economic assessment assumed the project was financed entirely through equity.

The Net Present Value (NPV) of the project was calculated by discounting back cash flow projections throughout the life-of-mine (LOM) to the Project's valuation date using three (3) different discount rates, 6%, 8%, and 10%. The base case used a discount rate of 8%. The internal rate of return (IRR) and the payback period were also calculated.

Table 22.1 summarizes the economic/financial results of the Project for the base case. All figures are in USD currency.

Table 22.1 – Base Case Financial Results

Financial Results	Unit	Pre-tax	After-tax
NPV @ 8%	M USD	388.8	217.8
IRR	%	33.3	24.8
Payback Period	Year	2.7	3.2

Source: DRA. 2023

22.1 Economic Criteria

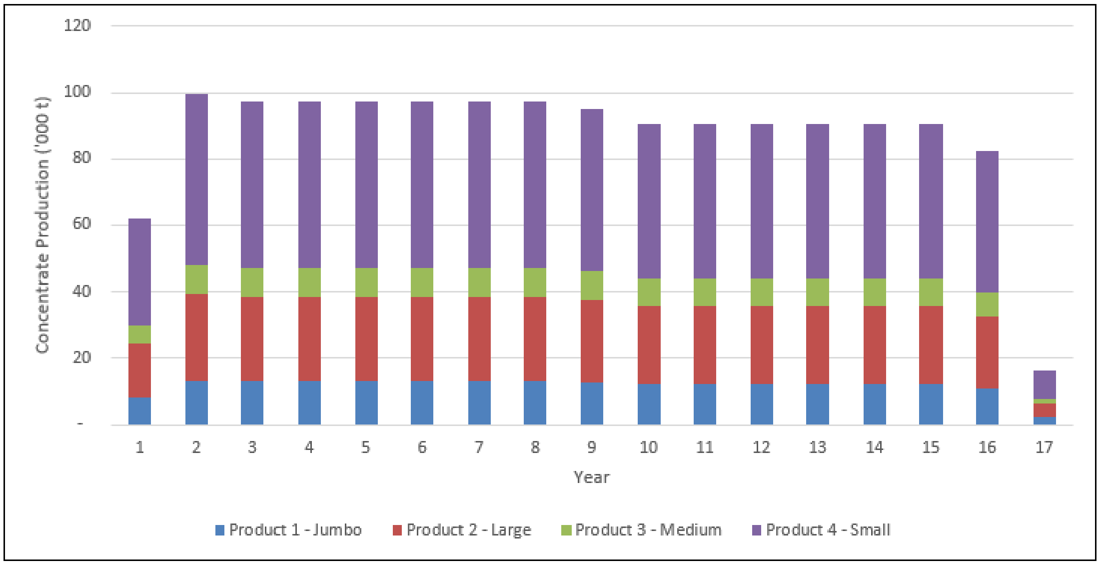
The Project's cash inflows were estimated based on annual revenue projections. Cash outflows consisted of operating costs, capital expenditures, royalties, and taxes.

22.1.1 Revenue

Revenue was estimated based on the production of four (4) graphite products according to their particle size distribution. Annual production of each of these products has been calculated based on the mine plan and process design parameters described in Sections 16 and 17, respectively.

Based on the mining plan, during the first year of operation, only saprolite material will be processed. Year 2 onwards, feed to the plant will consist of a blend of saprolite and fresh rock. The figure below represents the expected production profile.

Figure 22.1 – LOM Concentrate Production Profile



Source: DRA, 2023

Table 22.2 below summarizes the LOM size fraction profile.

Table 22.2 – Size fraction profile

Product	Size Fraction (mesh)	LOM Expected Distribution (%)[1]	LOM Production (tonnes)[1]	Grade (% Cg)
Jumbo	+ 48	13.4	198,645	97.0
Large	-48 + 80	26.0	385,431	96.0
Medium	-80 + 100	9.0	133,418	94.5
Small	-100	51.6	764,932	94.9
Total		**100.0**	**1,482,426**	**95.4**

[1] Figures may not add due to rounding

Source: DRA, 2023

The following graphite prices were used to estimate revenue.

Table 22.3 – Graphite Concentrate Pricing per Size Fraction for Lola Project

Size Fraction	LOM Expected Distribution (%)	Price ($ USD/tonne)
+48 mesh	13.4	1,992
+80 mesh	26.0	1,750
+100 mesh	9.0	1,400

Size Fraction	LOM Expected Distribution (%)	Price ($ USD/tonne)
- 100 mesh	51.6	1,070
Weighted Average	100.0	1,400

Source: DRA. 2023

22.1.2 Production Costs

The operating costs included consisted of mining, process, tailings management, general and administrative costs and concentrate transport. Table 22.4 summarizes these costs and it is compiled from information detailed in Section 21.8.

Table 22.4 – LOM Operating Costs

Item	Units	LOM Average Costs
Mining	USD/tonne moved	3.28
Processing	USD/tonne milled	11.72
General & administration	USD/tonne milled	1.87
Concentrate transport	USD/tonne conc.	39.7

Source: DRA, 2023

22.1.3 Capital Investment

Capital expenditures for the Lola Project are detailed in Section 21. These include initial pre-production capital, sustaining capital and closure costs as shown in Table 22.5.

Table 22.5 – LOM Capital Expenditure

Item	Value ($M)
Initial Pre-production Capital	184.7
Sustaining Capital	93.8
Closure Costs	-

Source: DRA. 2023

Working capital cash outflows and inflows were also included in the financial model. These were calculated based on the assumption that accounts receivables will be received within 45 days and accounts payable will be paid within 30 days.

22.1.4 Mineral Royalties

There are no private royalties applicable to the Lola Project.

22.1.5 Taxation Regime

Annual corporate tax liabilities were calculated under the Guinean tax regime. These are based on Guinea's Mining Code and the *Code General des Impôts* published in 2004 and the amendments and revisions that have followed since.

22.1.5.1 Extraction Tax

The government of Guinea applies a tax on extraction of mineral substances (Extraction Tax). The extraction tax rate applied depends on the mineral substance, ore grade and quantity extracted. Table 22.6 summarizes the extraction tax rates included in article 161 of Guinea's mining code.

Table 22.6 – Extraction Tax Rates in Guinea

Mineral Substance	Taxation Unit	Extraction Tax Rate
Iron Ore	Metric tonne	3.0%
Base Metals	Metric tonne	3.0%
Bauxite	Metric tonne	0.075%
Diamonds	Carat	3.5 – 5%
Gemstones	Carat	1.5 – 5%

Source: DRA, 2023

Currently, Guinea's Mining Code does not include graphite. Thus, based on the nature of graphite concentrate, the economic assessment one assumed a tax rate of 3.0%; like that applied to iron ore and base metals.

As per Guinea's Mining Code, the extraction tax was deducted when calculating taxable profits.

22.1.5.2 Income Tax

In 2013, Guinea amended its mining code reducing income taxes to mining companies from 35% to 30%. Thus, the corporate tax rate used to evaluate the Project was 30% of taxable income.

22.1.5.3 Fonds d'Indemnisation des Communautés Locales (FODEL)

The holders of a mining license must enter into a local development agreement with the communities residing on or in the immediate vicinity of the site. For this study, the amount of the local development contribution was established at 1.0% as stated in Article 130 of the Mining Code for all mining substances except for iron and bauxite.

22.1.5.4 *IMPÔT MINIMUM FORFATAIRE (IMF)*

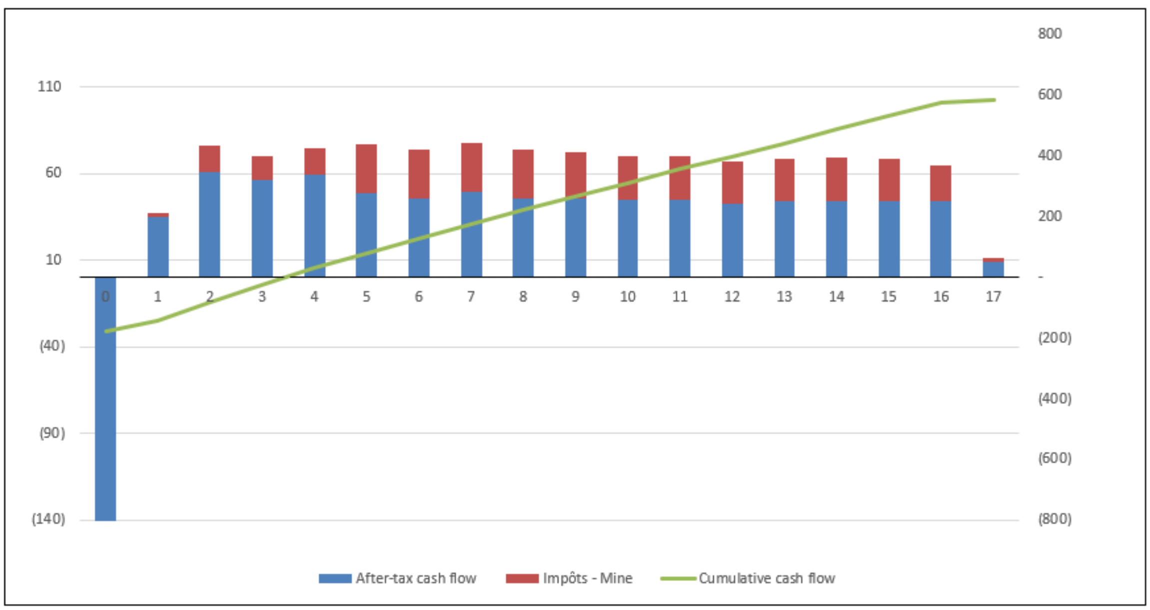
As per Division IV, Chapter I (Articles 244-247)of the Code General des Impôts and Article 11 of the Amendment to the Finance Act (2017), all companies in Guinea are subject to an additional tax ("*imposition forfataire annuelle*"). This tax is known as the "*Impôt Minimum Forfataire*" (IMF).

In 2017, the IMF was set at 1.5% of revenues of the previous year. IMF to be paid by large companies is set at a minimum of 75 M GNF (i.e., $8,772 USD) per year. IMF payments by medium-size companies is set at a minimum of 15 M GNF (i.e., $1,754 USD) per year. In addition, the IMF fraction above 15 M GNF is deductible from income taxes.

22.2 Cash Flow Analysis and Economic Results

Figure 22.2 shows the after-tax cash flow and cumulative cash flow profiles of the Project. The after-tax payback period has been estimated at 3.9 years.

Figure 22.2 – After-Tax Cash Flow and Cumulative Cash Flow Profiles



Source: DRA, 2023

Table 22.7 summarizes the financial results. NPV is calculated at three (3) different discount rates, 6%, 8% and 10%. The base case uses a discount rate of 8% and has been highlighted in the table below.

Table 22.7 – Lola Project Financial Results

Financial Results	Unit	Pre-tax	After-tax
NPV @ 6%	M USD	480.6	277.6
NPV @ 8%	M USD	388.8	217.8
NPV @ 10%	M USD	315.0	169.7
IRR	%	33.3	24.8
Payback Period	Year	2.7	3.2

Source: DRA, 2023

After-tax NPV is $217.8 M at a discount rate of 8%. The after-tax IRR is 24.8% and the after-tax payback on initial investment is 3.2 years. Table 22.8 shows the annual cash flow projections.

Table 22.8 – Cash Flow Statement – Base Case

NPV

Cash Flow - Summary | **DRA**

(in '000 USD)

Item	YEAR	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Net Sales Revenue		-	42,300	68,958	72,586	73,164	73,303	72,842	72,968	72,802	73,519	72,969	72,844	72,954	72,933	73,327	73,002	72,528
Third party royalties		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross Income		-	42,300	68,958	72,586	73,164	73,303	72,842	72,968	72,802	73,519	72,969	72,844	72,954	72,933	73,327	73,002	72,528
Operating Costs		-	(16,682)	(25,720)	(26,438)	(27,890)	(28,194)	(26,739)	(26,975)	(27,002)	(27,247)	(27,612)	(25,417)	(25,084)	(26,035)	(25,769)	(28,641)	(25,204)
EBITDA		-	25,618	43,238	46,149	45,275	45,108	46,103	45,992	45,800	46,272	45,357	47,428	47,870	46,898	47,558	44,360	47,325
			61%	*63%*	*64%*	*62%*	*62%*	*63%*	*63%*	*63%*	*63%*	*62%*	*65%*	*66%*	*64%*	*65%*	*61%*	*65%*
Other Costs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total		-	25,618	43,238	46,149	45,275	45,108	46,103	45,992	45,800	46,272	45,357	47,428	47,870	46,898	47,558	44,360	47,325
Mine Pre-production Capital Expenditure																		
Mine development		(6,962)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mine equipment		(5,239)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mine site infrastructure		(14,322)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Process plant		(54,019)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tailings & water management		(16,228)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mobile equipment		(5,837)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Power plant & power distribution		(16,515)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-site infrastructure		(3,947)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Royalty buy-out option		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total capital expenditure		(123,069)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt financement		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity portion of capital expenditure		(123,069)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salvage value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Change of Working Capital		(3,897)	(2,579)	(394)	49	8	(64)	4	23	(69)	99	(167)	(41)	82	(71)	280	(227)	269
Sustaining Capital Expenditure																		
Mine equipment		-	(2,040)	(2,849)	(604)	(683)	(120)	-	-	(3,217)	(681)	(115)	-	(858)	(1,653)	(740)	(3,536)	(2,518)
Mine haulage roads		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,457)	-	-
Power plant		-	-	(1,673)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tailings		-	-	(114)	(4,763)	(116)	(6,528)	(416)	(10,123)	(9,949)	-	-	(119)	(10,838)	-	-	(116)	(13,361)
Water management (sedimentation ponds)		-	-	-	(98)	-	-	-	-	-	-	-	-	-	-	(141)	-	(222)
Plant mobile equipment		-	-	-	-	-	-	-	-	(2,201)	-	-	-	-	-	-	(2,029)	(2,213)
Off-site infrastructure		-	(271)	(271)	(288)	(274)	(291)	(282)	(291)	(286)	(273)	(278)	(282)	(290)	(272)	(285)	(275)	(288)
Land acquisition		-	-	-	(180)	-	-	-	(467)	-	-	-	-	-	-	(216)	-	(286)
Investment for sustaining capital assets		-	(2,311)	(4,907)	(5,933)	(1,073)	(6,939)	(698)	(10,882)	(15,654)	(954)	(394)	(401)	(11,986)	(1,925)	(2,839)	(5,956)	(18,888)
Mine rehabilitation trust fund payments		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Closure costs		-	-	-	-	-	-	-	-	(1,324)	(4,138)	-	-	-	-	-	-	-
Debt payment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-tax cash flow		**(126,966)**	**20,727**	**37,937**	**40,265**	**44,209**	**38,106**	**45,409**	**35,133**	**28,753**	**41,278**	**44,796**	**46,985**	**35,965**	**44,902**	**44,999**	**38,177**	**28,705**
Cumulative cash flow		(117,561)	(96,834)	(58,897)	(18,632)	25,577	63,683	109,092	144,226	172,979	214,257	259,053	306,039	342,004	386,906	431,905	470,082	498,787
Fractions calculations		n/m	n/m	n/m	n/m	0.42	0.67	1.40	3.11	5.02	4.19	4.78	5.51	8.51	7.62	8.60	11.31	16.38
Mid-year adjustment		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Discount factor	8.00%	0.926	0.857	0.794	0.735	0.681	0.630	0.583	0.540	0.500	0.463	0.429	0.397	0.368	0.340	0.315	0.292	0.270
Discounted cash flow		(117,561)	17,770	30,116	29,596	30,088	24,013	26,496	18,981	14,384	19,120	19,212	18,659	13,224	15,287	14,186	11,143	7,758
Government royalty	3.00%	-	(1,269)	(2,069)	(2,178)	(2,195)	(2,199)	(2,185)	(2,189)	(2,184)	(2,206)	(2,189)	(2,185)	(2,189)	(2,188)	(2,200)	(2,190)	(2,176)
Income tax	30.00%	-	-	(2,296)	(5,621)	(5,943)	(10,717)	(10,997)	(10,886)	(9,270)	(9,199)	(10,320)	(11,466)	(11,249)	(10,614)	(11,059)	(9,205)	(10,224)
FODEL	1.00%	-	-	(690)	(726)	(732)	(733)	(728)	(730)	(728)	(735)	(730)	(728)	(730)	(729)	(733)	(730)	(725)
Impot Minimum Forfataire (IMF)		-	-	-	-	-	(1,097)	(1,100)	(1,093)	(1,095)	(1,092)	(1,103)	(1,095)	(1,093)	(1,094)	(1,094)	(1,100)	(1,095)
After-tax cash flow		**(126,966)**	**19,458**	**32,883**	**31,740**	**35,340**	**23,359**	**30,399**	**20,236**	**15,477**	**28,046**	**30,454**	**31,511**	**20,705**	**30,276**	**29,913**	**24,952**	**14,485**
Cumulative cash flow		(117,561)	(98,103)	(65,220)	(33,479)	1,860	25,219	55,618	75,855	91,331	119,377	149,832	181,342	202,047	232,324	262,237	287,189	301,674
Fractions calculations		n/m	n/m	n/m	n/m	0.95	0.08	0.83	2.75	4.90	3.26	3.92	4.75	8.76	6.67	7.77	10.51	19.83
Discounted cash flow		(117,561)	16,682	26,104	23,330	24,051	14,720	17,738	10,933	7,742	12,991	13,061	12,513	7,613	10,308	9,430	7,283	3,915

Source: DRA, 2023

NPV

Cash Flow - Summary | DRA

(in '000 USD)

Item	YEAR	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Net Sales Revenue		-	86,812	139,433	136,264	136,264	136,264	136,264	136,264	136,264	133,095	126,758	126,758	126,758	126,758	126,758	126,758	115,339	22,583	2,075,396
Third party royalties		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross Income		-	86,812	139,433	136,264	136,264	136,264	136,264	136,264	136,264	133,095	126,758	126,758	126,758	126,758	126,758	126,758	115,339	22,583	2,075,396
Operating Costs		-	(41,067)	(59,426)	(59,966)	(56,670)	(54,480)	(54,715)	(53,371)	(53,550)	(52,715)	(51,764)	(52,293)	(53,030)	(53,600)	(51,550)	(53,403)	(53,999)	(11,353)	(866,952)
EBITDA		-	45,746	80,008	76,299	79,594	81,785	81,550	82,893	82,714	80,380	74,994	74,464	73,728	73,157	75,208	73,354	61,341	11,230	1,208,445
			53%	*57%*	*56%*	*58%*	*60%*	*60%*	*61%*	*61%*	*60%*	*59%*	*59%*	*58%*	*58%*	*59%*	*58%*	*53%*	*50%*	
Other Costs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total		-	45,746	80,008	76,299	79,594	81,785	81,550	82,893	82,714	80,380	74,994	74,464	73,728	73,157	75,208	73,354	61,341	11,230	1,208,445
Mine Pre-production Capital Expenditure																				
Mine development		(11,448)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(11,448)
Mine equipment		(375)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(375)
Mine site infrastructure		(14,100)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(14,100)
Process plant		(96,075)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(96,075)
Tailings & water management		(6,994)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(6,994)
Mobile equipment		(5,702)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(5,702)
Power plant & power distribution		(49,983)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(49,983)
Total capital expenditure		(184,679)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(184,679)
Debt financement		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity portion of capital expenditure		(184,679)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(184,679)
Salvage value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Change of Working Capital		(7,429)	(5,048)	441	(275)	(183)	20	(112)	15	327	713	44	61	48	(171)	154	1,477	8,041	1,877	
Sustaining Capital Expenditure																				
Mine equipment		-	-	-	-	-	-	-	-	(306)	-	-	-	-	-	-	-	-	(356)	(662)
Mine haulage roads		-	-	-	-	-	-	(1,895)	-	(1,361)	(2,779)	-	-	-	-	(1,284)	-	-	-	(7,318)
Power plant		-	-	-	(1,243)	(69)	(522)	(1,243)	(69)	-	(1,243)	(591)	-	(1,243)	(69)	-	(1,765)	(69)	-	(8,126)
Tailings		-	(2,672)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(3,772)	(828)	(60,084)
Water management (sedimentation ponds)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant mobile equipment		-	(419)	(419)	(419)	(419)	(419)	(419)	(419)	(3,755)	(419)	(419)	(419)	(1,211)	(419)	(419)	(518)	(419)	(419)	(11,355)
Off-site infrastructure		-	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(5,098)
Land acquisition		-	-	-	-	-	-	-	(660)	-	(158)	(166)	-	-	-	(127)	-	-	-	(1,111)
Investment for sustaining capital assets		-	(3,391)	(4,491)	(5,734)	(4,560)	(5,013)	(7,630)	(5,221)	(9,493)	(8,671)	(5,248)	(4,491)	(6,526)	(4,560)	(5,902)	(6,355)	(4,560)	(1,903)	(93,753)
Mine rehabilitation trust fund payments		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Closure costs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt payment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pre-tax cash flow		**(192,108)**	**37,307**	**75,957**	**70,290**	**74,851**	**76,791**	**73,808**	**77,688**	**73,548**	**72,422**	**69,790**	**70,034**	**67,249**	**68,426**	**69,460**	**68,476**	**64,821**	**11,204**	**930,013**
Cumulative cash flow		(177,878)	(140,571)	(64,613)	5,676	80,527	157,318	231,126	308,814	382,362	454,784	524,574	594,608	661,857	730,283	799,743	868,219	933,040	944,243	
Fractions calculations		n/m	n/m	n/m	0.92	0.08	1.05	2.13	2.98	4.20	5.28	6.52	7.49	8.84	9.67	10.51	11.68	13.39	83.28	
Discounted cash flow		(177,878)	31,985	60,297	51,665	50,942	48,391	43,066	41,972	36,792	33,545	29,932	27,811	24,727	23,296	21,897	19,987	17,519	2,804	

Source: DRA, 2023

NPV

Cash Flow - Summary DRA

(in '000 USD)

Item	**YEAR**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**TOTAL**
Net Sales Revenue		72,638	72,638	71,789	71,789	73,139	73,139	73,139	73,139	73,139	68,356	68,356	68,356	34,178	-	2,026,792
Third party royalties		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross Income		72,638	72,638	71,789	71,789	73,139	73,139	73,139	73,139	73,139	68,356	68,356	68,356	34,178	-	2,026,792
Operating Costs		(28,594)	(28,594)	(29,207)	(29,207)	(28,839)	(28,839)	(28,839)	(28,839)	(28,839)	(29,321)	(29,321)	(29,321)	(14,760)	-	(779,174)
EBITDA		44,044	44,044	42,581	42,581	44,299	44,299	44,299	44,299	44,299	39,034	39,034	39,034	19,418	-	1,247,618
		61%	*61%*	*59%*	*59%*	*61%*	*61%*	*61%*	*61%*	*61%*	*57%*	*57%*	*57%*	*57%*	*#DIV/0!*	
Other Costs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total		44,044	44,044	42,581	42,581	44,299	44,299	44,299	44,299	44,299	39,034	39,034	39,034	19,418	-	1,247,618
Mine Pre-production Capital Expenditure																
Mine development		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(6,962)
Mine equipment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(5,239)
Mine site infrastructure		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(14,322)
Process plant		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(54,019)
Tailings & water management		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(16,228)
Mobile equipment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(5,837)
Power plant & power distribution		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(16,515)
Off-site infrastructure		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(3,947)
Royalty buy-out option		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total capital expenditure		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(123,069)
Debt financement		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Equity portion of capital expenditure		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(123,069)
Salvage value		-	688	-	-	-	-	-	-	-	-	-	-	-	-	
Change of Working Capital		-	157	-	(199)	-	-	-	-	638	-	-	3,059	3,042	-	
Sustaining Capital Expenditure																
Mine equipment		(343)	(359)	-	-	(1,332)	(1,332)	(1,332)	(1,359)	(1,332)	(546)	(546)	(546)	(546)	(538)	(29,724)
Mine haulage roads		-	(2,011)	-	-	-	-	-	-	-	-	-	-	-	-	(3,468)
Power plant		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,673)
Tailings		-	(183)	(1,226)	-	-	-	-	-	-	-	-	-	-	-	(57,851)
Water management (sedimentation ponds)		-	(275)	-	-	-	-	-	-	-	-	-	-	-	-	(736)
Plant mobile equipment		-	-	-	-	-	-	-	(2,136)	-	-	-	-	-	-	(8,580)
Off-site infrastructure		(275)	(288)	(289)	(282)	(272)	(272)	(272)	(278)	(272)	(274)	(274)	(274)	(274)	-	(8,094)
Land acquisition		-	(306)	-	-	-	-	-	-	-	-	-	-	-	-	(1,456)
Investment for sustaining capital assets		(618)	(3,423)	(1,514)	(282)	(1,604)	(1,604)	(1,604)	(3,773)	(1,604)	(820)	(820)	(820)	(820)	(538)	(111,582)
Mine rehabilitation trust fund payments		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Closure costs		(632)	-	-	(7,028)	(3,032)	-	-	-	-	-	-	-	-	(785)	(16,939)
Debt payment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pre-tax cash flow		**42,794**	**41,467**	**41,067**	**35,072**	**39,664**	**42,696**	**42,696**	**40,527**	**43,334**	**38,215**	**38,215**	**41,273**	**21,641**	**(1,323)**	**996,717**
Cumulative cash flow		541,581	583,047	624,114	659,186	698,850	741,545	784,241	824,768	868,102	906,316	944,531	985,804	1,007,445	1,006,122	
Fractions calculations		11.66	13.06	14.20	17.80	16.62	96.11	110.13	132.53	140.77	181.46	204.60	213.22	458.39	(8,275.61)	
Mid-year adjustment		1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Discount factor	8.00%	0.250	0.232	0.215	0.199	0.184	0.170	0.158	0.146	0.135	0.125	0.116	0.107	0.099	0.092	
Discounted cash flow		10,709	9,608	8,811	6,967	7,296	7,272	6,733	5,918	5,859	4,784	4,430	4,430	2,151	(122)	
Government royalty	3.00%	(2,179)	(2,179)	(2,154)	(2,154)	(2,194)	(2,194)	(2,194)	(2,194)	(2,194)	(2,051)	(2,051)	(2,051)	(1,025)	-	(60,804)
Income tax	30.00%	(9,565)	(9,942)	(9,392)	(7,283)	(8,863)	(9,782)	(9,838)	(9,841)	(9,869)	(8,595)	(8,756)	(8,945)	-	-	(249,738)
FODEL	1.00%	(726)	(726)	(718)	(718)	(731)	(731)	(731)	(731)	(731)	(684)	(684)	(684)	-	-	(19,503)
Impot Minimum Forfataire (IMF)		(1,088)	(1,090)	(1,090)	(1,077)	(1,077)	(1,097)	(1,097)	(1,097)	(1,097)	(1,097)	(1,025)	(1,025)	(1,025)	-	(27,132)
After-tax cash flow		**29,235**	**27,530**	**27,714**	**23,840**	**26,798**	**28,891**	**28,835**	**26,663**	**29,442**	**25,788**	**25,699**	**28,568**	**19,590**	**(1,323)**	**639,541**
Cumulative cash flow		330,909	358,439	386,153	409,993	436,792	465,683	494,518	521,181	550,623	576,412	602,110	630,679	650,269	648,946	
Fractions calculations		10.32	12.02	12.93	16.20	15.30	88.77	102.41	127.02	130.93	170.56	193.50	196.37	323.96	(5,341.60)	
Discounted cash flow		7,316	6,379	5,946	4,736	4,929	4,921	4,547	3,893	3,981	3,228	2,979	3,066	1,947	(122)	

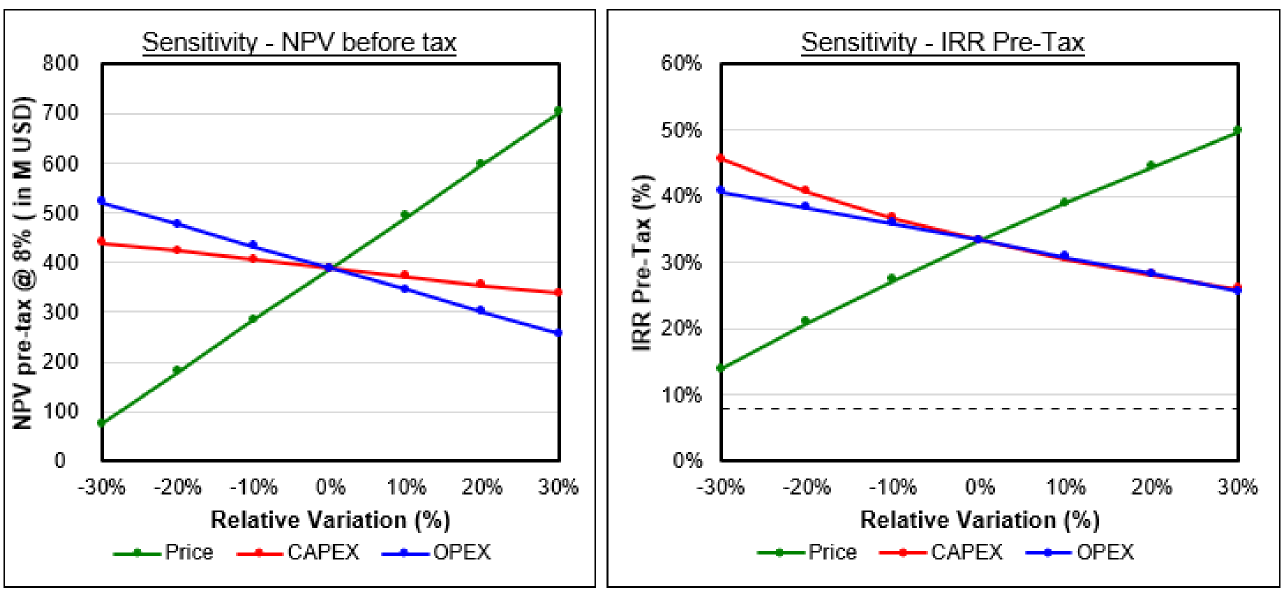
Source: DRA, 2023

22.3 Sensitivity Analysis

A sensitivity analysis was carried out to assess the impact of changes in total pre-production capital expenditure (Capex), operating costs (Opex) and graphite price (Price) on the project's NPV at 8% (i.e., base case) and IRR. Each variable was examined one-at-a-time. An interval of ±30% with increments of 10% was applied to the Capex, Opex and Price variables.

The pre-tax sensitivity analysis is shown in Figure 22.3. Price has the highest impact on the Project's performance as observed by the steep change in the Project's NPV and IRR as Price changes. If the price of all four (4) graphite products was to drop by 30% to an overall basket price of 980 USD/tonne, the Pre-tax NPV at 8% would drop to 75.4 M USD and IRR to 13.9%. Conversely, if the price of all four (4) graphite products was to increase by 30% to an overall basket price of 1,820 USD/tonne, Pre-tax NPV at 8% would increase to 702.1 M USD and IRR to 49.8%.

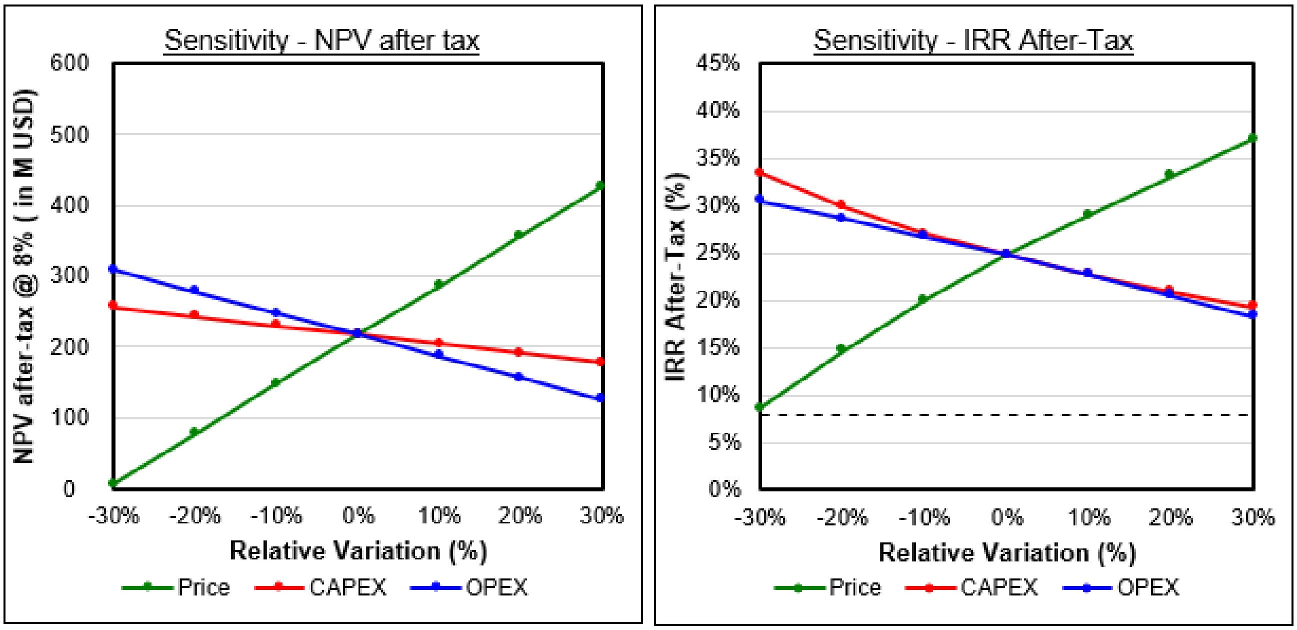
Figure 22.3 – Pre-Tax NPV and IRR Sensitivity



Source: DRA, 2023

A similar trend, although less steep, is observed on the after-tax results (see Figure 22.4). If all four (4) graphite products price drop by 30%, after NPV at 8% discount rate decreases to 7.1 M USD and IRR drops to 8.7%. An increase in graphite price by 30% results in an increase in after-tax NPV at 8% to 426.0 M USD and after-tax IRR of 37.1%.

Figure 22.4 – After-Tax NPV and IRR Sensitivity



Source: DRA, 2023

The impact of graphite prices on the Project's economics is also presented in Table 22.9.

Table 22.9 – Price Sensitivity Analysis

LOM Average Sale Price ($/t)	1,120	1,260	1,400[1]	1,540	1,681
Average annual revenue (million)[2]	104.9	118.0	131.0	144.2	157.4
Pre-Tax Returns					
Average annual cash flow (million)[2]	50.6		76.7	89.9	103.1
NPV (million) @ 8% discount	179.8	284.3	388.8	493.2	597.7
IRR (%)	21.0%	27.4%	33.3%	39.0%	44.5%
Payback (years)	4.1	3.2	2.7	2.3	2.0
After-Tax Returns					
Average annual cash flow (million)[2]	35.9	44.5	5353.1	61.9	71.0
NPV (million) @ 8% discount	77.7	147.9	217.8	286.7	356.4
IRR (%)	4.85%	20.0%	24.8%	29.0%	33.1%
Payback (years)	4.8	3.7	3.2	2.8	2.5

Note:
1 Base case, based on consensus pricing.
2 Does not include Years 1 and 17 as they do not represent full production

Source: DRA, 2023

23 ADJACENT PROPERTIES

The Lola Graphite Exploration License (PR 5349) is surrounded by four (4) adjacent Exploration Licenses (*Permis de Recherche Industrielle*) (Figure 23.1). However, all infrastructure related to the Lola project lies within the SRG's PR 5349 property.

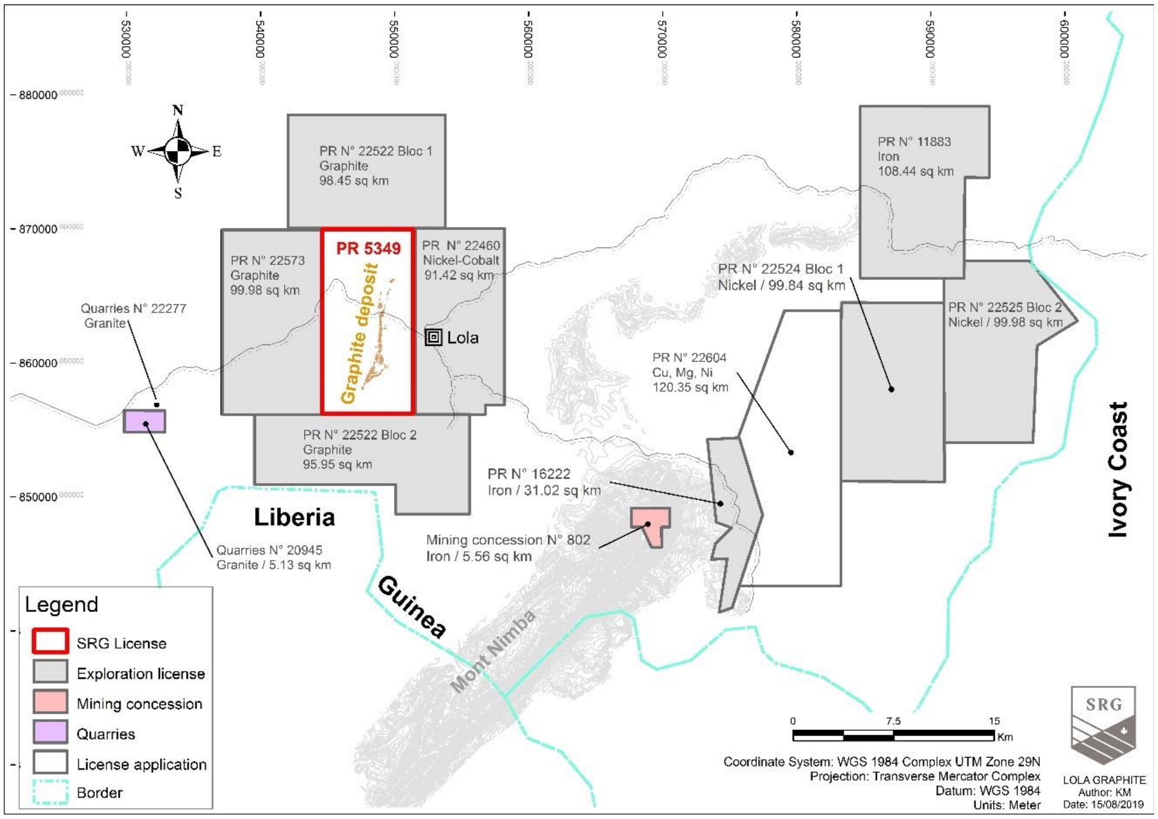
Other exploration licences for graphite, iron and base metals, and a quarry, are located in the surrounding area, some distance away from PR 5349 (Figure 23.1).

The Reader is referred to the Mining land registry of the Republic of Guinea (*Portail du Cadastre Minier de la République de Guinée*) for official and up to date information on the adjacent properties, at the following link: *http://guinee.cadastreminier.org/fr/*.

A Qualified Person has been unable to verify the information about the adjacent properties, but the reader can find official information on the publicly available website of the mining registry by following the link provided above.

The Reader is cautioned that the information on adjacent properties is not necessarily indicative of the mineralization on the property that is the subject of the present technical report.

Figure 23.1 – Adjacent Properties to the SRG's Lola Graphite PR 5349



Source: SRG, 2019

24 OTHER RELEVANT DATA AND INFORMATION

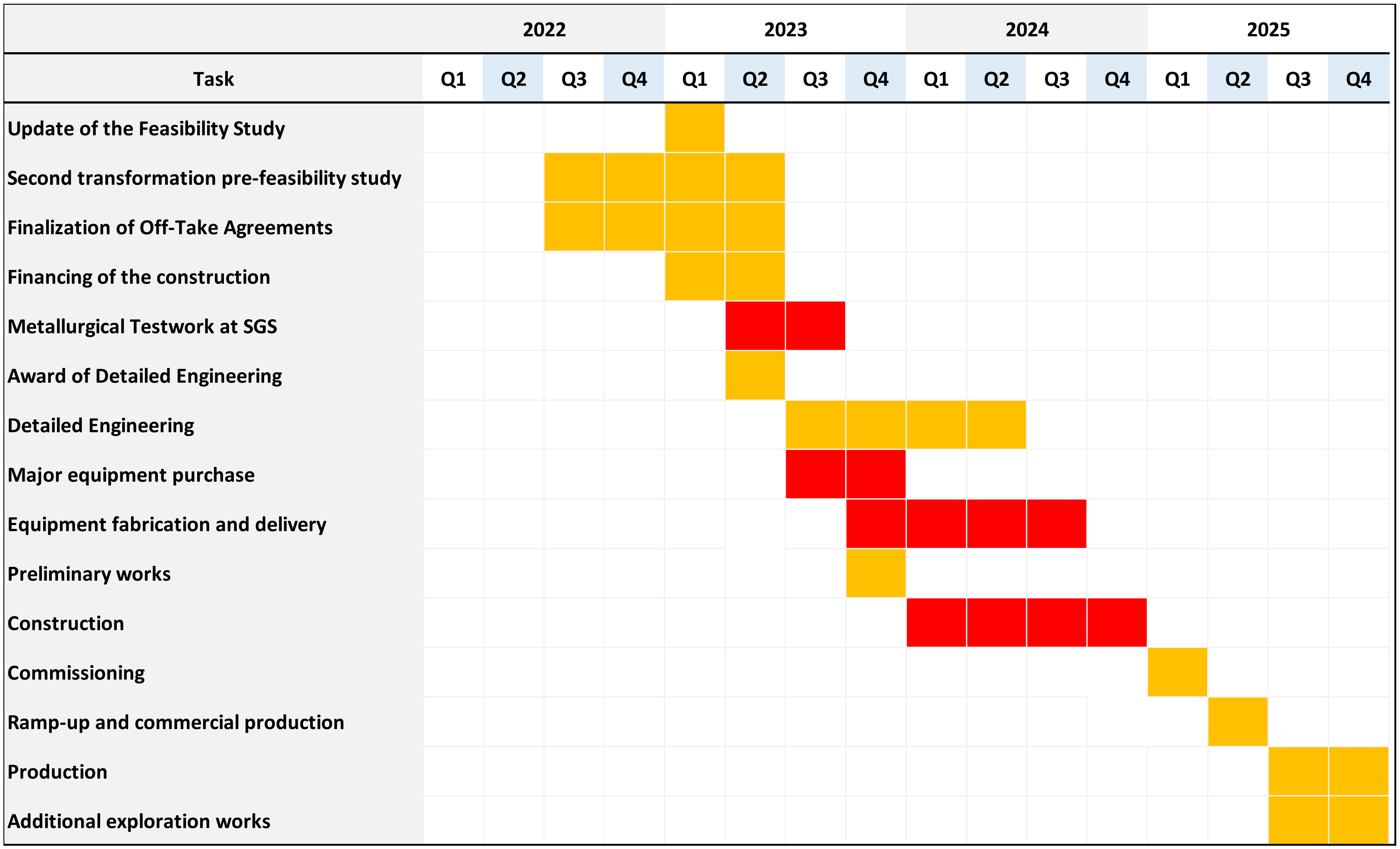
24.1 Project Execution Schedule

- A master schedule has been developed for the Lola Project covering such main activities as studies, permitting, engineering, procurement, construction, commissioning and ramp-up. Figure 24.1 below summarizes the schedule.

24.1.1 SCHEDULE ASSUMPTIONS

- The Project master schedule has been developed considering the following assumptions:
- Geotechnical studies and survey reports (in their final version) are received by the EPCM contractor (s) before the start of basic engineering.
- Hydrogeological surveys and reports (in their final version) are received by the EPCM contractor (s) before the start of basic engineering and are favorable to the Project.
- All permits required will be awarded before the beginning of construction.
- Design criteria, process flowsheet and scope of work will be frozen and agreed upon by all stakeholders before the start of basic engineering.
- Qualified resources will be available for the EPCM contractor (s).
- Qualified construction workers will be available at the time of construction.
- June to September is considered a rainy season. Early Works, earthworks and civil work have been scheduled to fall outside the rainy season. The schedule assumes a reduced productivity in this period for other disciplines.
- The following construction sequence was used in the schedule development and will be optimized during the execution phase with contractor inputs:
  - Crushing and Reclaim;
  - Comminution and Rougher Flotation;
  - Polishing and Cleaner Flotation;
  - Tailings;
  - Graphite Concentrate Dewatering;
  - Graphite Product Sizing and Bagging;
  - Reagents Systems;
  - Plant Utilities - Water and Air Services.

Figure 24.1 – Project Execution Schedule



Source: DRA, 2023

24.1.2 Critical Path

To meet the schedule, the purchase orders (POs) of the equipment with long-lead delivery must be placed in Q3 and Q4 of 2023, after equipment sizing has been finalized based on the results of the metallurgical test-work program at SGS. Hence the test-work program is on the critical path of the project, followed by the placement of the POs of long-lead items.

Construction-wise, the critical path runs through the Civil & Concrete construction of the Concentrator Plant. Due to the construction sequence the Structural, Mechanical, Piping, Electrical and Controls in the Graphite Product Sizing and Bagging is the last area to be constructed.

24.1.3 Sub-Critical Path

The sub critical path runs through the construction of the Tailings Storage Facilities required for plant commissioning. The access for civil construction of the TSF is dependant on the access and haul road construction.

24.2 Project Risks

The following main risks are identified:

- Currently available comminution results lack information on variability which poses a limited risk on the sizing of the SAG mill. The currently planned metallurgical testing should be prioritized to confirm the sizing of the mill.
- Vendor test-work for the concentrate filtration is required to confirm current sizing of the filter-presses.
- Additional flotation testing of soft-hard rock blends is required to improve confidence on expected recovery and concentrate quality.
- There is a risk of equipment blockage when handling ROM ore as the ore a high moisture content and is exposed to open-air. There is a need to ensure mill front-end robustness of design for mill feed.
- There is a risk of graphite blockage in chutes and silos. Testing is required for the dried graphite concentrate to support the detailed design of silos.
- There is a risk of slippage in the project schedule caused by the metallurgical testwork. The laboratory quoted eight (8) months to complete the testwork. The risk is that the testwork takes more than eight months to complete.

- There is an additional schedule risk related to the metallurgical testwork: Available hard rock core for testwork is being assessed, but should there be insufficient representative material, additional drilling will be required, causing a slippage in the testwork program.
- There is a risk that current geotechnical parameters for the laterite and saprolite are overestimated. Consequently, downgraded parameters may affect slightly the slope angle. Additional drilling, testing, and monitoring is required to confirm the initial parameters.
- Blasting in the North Pits, which are close to the milling plant, may represent a safety risk. The planning of blasting operations must be coordinated with plant operations.
- There is a risk that hydrogeological parameters are overestimated. Consequently, drilling dewatering wells and installing pumps may be needed. Additional drilling, testing, and monitoring is required to confirm the initial parameters.
- There is a risk that during an unusually wet rainy season, water rises above the flood-line, flooding the pits, posing risk to personnel resulting in disruption of the mine operations. Mitigation is by implementing proper preventative measures to monitor expected precipitations.

To continue to mitigate project risks, it is recommended that sufficient risk management effort be done in the next phase of the project. A formal risk review should be held at the onset of the next phase to identify and detail any special scope required early-on. Particular emphasis should be placed on conducting a full HAZOP review as per standard engineering practices.

24.3 Project Opportunities

The following elements have been identified as the main opportunities to improve the economics of the project:

- Include marginal ore as reserves in the LoM.
- Convert resources under the flood-line to reserves, if justifiable based on the Modifying Factors and confirmed by a hydrogeological and geotechnical study.
- Evaluate the possibility of including the TSF development in the mining contractor scope of work (to reduce haulage distances).
- Evaluate the possibility of co-disposal of mine waste and tailings.
- Evaluate the possibility of including the haulage and access roads in the mining contractor scope of work.
- Consider a “Schedule of rates” type of contract with the mining contractor based on an open book integrated set-up.
- Based on the results of the currently planned metallurgical test-work at SGS, re-evaluate the current comminution energy requirements.

- Based on the results of the currently planned metallurgical test-work at SGS, re-evaluate the mesh size distribution of the concentrate.
- Evaluate the option of a Build, Operate & Maintain (BOM) strategy for power generation.
- Evaluate the option of hiring a contractor to transport the concentrate to the port of Monrovia.
- Evaluate the possibility of eliminating the camp and housing employees in Lola.
- Group the equipment into large procurement packages to be able to negotiate lower prices.
- Investigate the possibility of equipment financing via export-support governmental agencies.
- Engage competent contractors early in the next phase of the project and consider alternative contract management strategies such as Guaranteed Maximum Price.

25 INTERPRETATION AND CONCLUSIONS

This Report was prepared and compiled by DRA under the supervision of the QPs at the request of SRG. This Report has been prepared in accordance with the provisions of National Instrument 43-101 Standards of Disclosure for Mineral Projects.

25.1 Conclusions

The 2023 Mineral Resource Estimate includes a pit-constrained measured and indicated resource in saprolite of 30.0 Mt grading 4.07% Cg and an inferred resource of 8.75 Mt grading 3.79% Cg, using a cut-off grade of 1.65% Cg. The pit constrained returned a measured and indicated mineral resource in hard rock of 16.52Mt grading 4.11% together with an inferred minerals resource of 1.15 Mt grading 4.20% Cg using the same cut-off grade.

This Report for the Lola mineral resources is based on a 17-year Life of Mine open pit which includes 42.06 Mt of proved and provable mineral reserves at an average grade of 4.17% Cg with a stripping ratio of 0.88:1. Over the Life of Mine, an average of 1.4 M tonnes per year of ore will be mined from the open pit.

The graphite concentrate will be recovered by a conventional flotation process. Saprolite ore beneficiation process has an overall graphite recovery of 73.1%, producing a graphite concentrate grade of 95.4% Cg. The addition of up to 45% of fresh rock in the feed blend improves the overall graphite recovery to 84.2%. A suitable process flowsheet able to handle saprolite as well as a feed blend with fresh rocks has been developed for the project FS. The overall LOM recovery is estimated at 83.6%.

Based on market demand, it is anticipated that over the life of the mine, the plant will produce graphite concentrate divided into four (4) standard-size fractions: + 48 mesh, -48 + 80 mesh, -80 +100 mesh and -100 mesh.

The initial capital cost is evaluated at $185 M USD with sustaining capital costs of $94 M USD. The life of mine average operating cost is evaluated at $548/t plus $40/t for concentrate transport.

At an average sale price of graphite concentrate of $1,400/tonne, the financial results indicate a before-tax Net Present Values (NPV) of 389 M USD at discount rates of 8 %. The before-tax Internal Rate of Return (IRR) is 33 % with a payback period of 2.7 years. The after-tax NPV is 218 M USD at discount rates of 8 %. The after-tax IRR is 25 % and the payback period is 3.2 years.

25.1.1 Geology

The Lola graphite deposit manifests itself by ample surface exposure and is defined by core holes drilled over a systematic, tight grid. The field procedures and analytical work have adhered to best practices and industry standards required by NI 43-101. The data verification process by DRA did not identify any material issues with the drilling, logging, assaying work and with the results from the QAQC system.

25.1.2 Mining

This Report for the Lola mineral resources is based on a 17-year Life of Mine open pit which includes 40.9 Mt of proved and provable mineral reserves at an average grade of 4.14% Cg with a stripping ratio of 0.88:1. The ore material is contained within three (3) areas (North, Central, and South) where North and Central areas have been separated by two (2) areas each to avoid flood zones. The mine will operate year-round, seven (7) days per week, 24 hours per day (three [3] shifts, height [8] hours each). The total ore reserves are composed of 65% of oxide material (primarily saprolite) and 35% of fresh rock material.

Over the Life of Mine, an average of 2.6 M tonnes per year of ore will be mined from the open pit and hauled to the run of mine (ROM) pad which will be located roughly 2 km from the north pit area, 4 km from the central pit area and 6 km from the south pit area. Given the constraints on the comminution circuit of the Process Plant, the blend between oxide material and fresh rock material contained in the ROM delivered to the Process Plant has been set at a maximum of 45% of fresh rock.

The mining equipment fleet includes (during Year 1 to Year 17) eleven (11) articulated haul trucks with 41-tonne payloads, two (2) hydraulic excavator (6.2 m³) and two (2) production drill (5”).

25.1.3 Mineral Processing and Metallurgical Testing

During the development of the Report, the 2018-2019 process optimization program was completed on saprolite samples.

Due to the weathered nature of the ore, scrubbing is sufficient to provide the required size reduction and only a small percentage of the feed requires grinding to pass the 1 mm rougher feed screen. Desliming of the rougher feed resulted in small graphite flakes losses but improved rougher flotation performance substantially.

Flotation of the domain composites displayed a considerable variation in terms of concentrate grades and graphite recovery, therefore a mill feed blending work is very important for successful operation of the commercial plant.

A combination of intermediate concentrates polishing in a tumbling mill and polishing in the stirred mill is required to achieve the grade targets due to the presence of graphite interlayered with gangue minerals. A higher energy input is required to liberate the graphite from the interlayered gangue compared to gangue minerals that are attached to the outside of the graphite flakes.

Testing of the hard rock material demonstrated that the resource can be expanded with this type of rock when processed as purely hard rock as well as mixes with the saprolite.

Testing results demonstrated applicability of the saprolite flowsheet to process this type of feed.

As expected, the hard rock material is substantially harder than the saprolite, and preferentially to be processed as mixes with the soft rock. Mixing of hard and soft rock material has a positive effect on the metallurgical results via improved recovery, no reduction in concentrate grade, and coarser final concentrates as compared to saprolite feed processing.

A concentrate production campaign involved a pilot plant scale processing of 200 t of surface sample allowed generation of the concentrate for marketing purposes as well as generated several samples for the equipment supplier testing.

Equipment supplier test work included scrubbing, scrubber discharge and intermediate concentrate screening, and concentrate dewatering via the centrifuge. The tests were conducted in laboratories of reputable equipment suppliers and allowed to confirm the applicability of the equipment proposed for the commercial flowsheet and set the preferences for the concentrate dewatering.

25.1.4 GEOCHEMICAL

Geochemical leaching and acid rock drainage static tests have been carried on few waste and ore samples. Therefore, prediction of short, medium, and long terms behavior of materials must be confirmed with additional analysis.

A geochemical kinetic test has been carried out on tailings produced from representative soft ore composite sample. However, existing mining plan is based on the milling of both soft ore and fresh rock ore. Therefore, information from the existing kinetic test is useful, but limited and must be completed with new information from additional kinetic test carried out on more representative composite ore sample.

Existing water management plan is not optimized to reduce the number of sedimentation ponds. In this context, Capex and Opex estimation must be finalized following more detailed engineering.

Volumes of topsoil required for progressive and final reclamation are quite important. Topsoil management plan must be better defined. Topsoil stockpiles footprint may have a small impact on total closure costs. However, an optimized water management plan may reduce total closure costs.

26 RECOMMENDATIONS

Considering the positive outcome of this Report, it is recommended to pursue the next phase of the Project through various aspects need to be monitored or done are listed below.

26.1 Mineral Resources

It is recommended to continue with additional work to further define the deposit as outlined below:

- The mineral resources remain open along strike and dip. Further exploration along the strike may extend the open pit life of mine operations.
- CCIC MinRes recommends infill drilling to upgrade all inferred resources within the resource pit shell to be converted to reserves and extend the life of mine operations.
- It is recommended that an advanced "grade control" model be prepared prior to mining, where a drill spacing study will be required to determine the optimum spacing for "grade control" drilling.

26.2 Mining

DRA recommends:

- Additional drilling, testing, and monitoring is required to confirm the geotechnical parameters utilized for the hard rock and saprolite pit slope design.
- Evaluate in-pit filling versus out of pit dumps to reduce travel distance and cost. Additional drilling will be required in the oxide pits to determine if there is additional fresh rock before considering in pit dumping.
- A detailed hydrogeological study be carried out. This study will provide an estimate of the quantity of water that is expected to be encountered during the mining operation.
- A detailed hydrogeological and geotechnical study be carried out to evaluate if the 1-100 years flood lines area can be reduced for reserve pit shell optimization.

26.3 Process

DRA recommends certain work for the next stage of the Project:

- Locked cycle flotation testing for hard and soft rock mixes is required to produce metallurgical results that closely replicate the commercial plant conditions and evaluate the produced recovery numbers and concentrate grade and particle size.
- Comprehensive variability testing should be conducted on samples of the soft and hard rock to develop an understanding of the full extent of metallurgical variation that may be encountered

in the Lola deposit. Once the degree of variation is better understood, blending strategies can be developed for the commercial operation.

- Variability comminution testing is recommended for the hard rock material to determine a hardness variation within this type of rock to reduce the process risks for the comminution equipment design.

26.4 Environmental and Social Management Plan

It is recommended to perform the following work in connection with the environmental and social impacts of the Project:

- An Air Quality, Noise and Vibration Management Plan (ANV-MP) should be developed to address ongoing monitoring programs and mitigative measures. The plan should address administrative and physical controls to be used to mitigate releases of pollutants into the environment, including such items as controlling speed limits, applying dust suppression, use of low sulfur fuels, and routine inspection and maintenance of equipment.
- Re-visit the Air Quality, Noise and Vibration impact assessment in the next phase of the Project. Particularly, if there are substantive changes to the mining plan and/or process that would affect spatial or temporal extents of the analysis. Further, consider completing a supplemental evaluation of potential impacts from construction, closure, and reclamation.
- Currently, the use of HFO fuel for the generators results in SO2 and NO2 emissions which exceed the Guinean and IFC in-stack limits. Consider installing generators which meet the emissions limits or increasing the stack high or exhaust velocity.
- Consider implementing noise controls around the Crusher and SAG mill and/or relocate the Camp to reduce the impact of noise on its occupants.
- Recover the stripped soil to be used at closure.
- Vegetate bare soil quickly; build drainage ditches, containment dikes around tank and fuel stations and settling pond to avoid runoff water.
- Reforest the surrounding of the pits and waste dumps with the 10 trees species identified as VU in priority.
- Drill additional piezometers around site infrastructure to establish water management plan and underground water quality and level monitoring procedures.
- Develop and implement Influx Management Plan.
- Establish necessary monitoring measures with key performance indicators to measure the project's impact and the effectiveness of ongoing management measures.

- Develop and implement Community Health and Safety Management Plan, including dedicated Traffic Management Plan to cover communities along the export route and communicable diseases and sanitation & hygiene awareness campaigns.
- Develop, Implement and communicate local hiring policy with transparency.
- Use the RAP Framework to guide the resettlement and livelihood restoration program.

26.5 Tailings Storage Facility (TSF)

The following recommendations are proposed for consideration and evaluation during the detailed design of the TSF:

- Update the water balance of the TSF for the new life-of-mine.
- Re-assess the freeboard pf each phase of the TSF development according to the updated water balance.
- Re-assess the phasing of the construction of TSF1 and TSF2 and optimize for fewer phased wall lifts to produce a discontinuous construction period between the phases.

26.6 Hydrogeology

The following activities are recommended to acquire additional hydrogeological information, conduct a hydrogeological numerical modelling, and update the pits dewatering design:

- Acquire aerial photographs of the project area and conduct a detailed lineament analysis.
- Perform a ground geophysical investigation using electric methods to locate major faults around the pits.
- Drill selected points to assess productivity of deep aquifers and determine their hydrodynamical parameters.
- Update the hydrogeological and pits dewatering model and update the hydrogeological report.

The estimated budget to achieve these activities is estimated at $US90K.

26.7 Geochemical

Geochemical leaching and ARD static tests must be carried on more waste and ore samples to obtain more information on variability and allow calculation of statistics (average, median, etc.).

Geochemical kinetic tests carried out on tailings, fresh rock ore and soft ore must be continued to clearly predict medium and long terms behaviour of those materials. A new kinetic test must be carried out on a representative composite tailings sample produced at the pilot plant from soft ore and fresh rock ore in proportion like the proportion expected in the mining plan.

To have the volume of topsoil available for revegetation at closure of the different infrastructure, various topsoil stockpiles must be planned and located on the lay-out. Ideally, topsoil must be cleared and saved at industrial site, TSF, waste dumps and pits location. Topsoil management plan must be developed to maintain agronomical characteristics and control wind and water erosion.

Water management plan must be optimized to reduce the number of sedimentation ponds. Considering the location of the various infrastructures, water with similar characteristics should be sent to the same pond for treatment before discharge. This strategy will limit the cost of ponds construction and pH adjustment installations. However, piping, and pumping costs could be higher. Following water management optimisation carried out during detailed engineering, the Capex and Opex will have to be updated.

The Capex and Opex associated with the water management plan is estimated at ±40% accuracy as it is not based on any level of design. It is recommended that both optimization of the current concept and a feasibility level design be undertaken so that a better level of accuracy can be attained with respect to project costs for this item.

It is strongly recommended that the Capex associated with surface water management be re-evaluated based on actual FS level design for the required infrastructure, rather than the current conceptual approach. This re-evaluation can also include an optimization phase.

27 REFERENCES

The following documents used in preparing the FS for the Lola Graphite Project were made available by SRG:

Activation Laboratories Ltd. Test work results and reports (flotation, mineralogy, graphite purification) produced during 2014 through 2016 and submitted to Sama Resources Inc.

Andritz Separation Inc., Laboratory Report L-13976. for SRG Graphite Inc. April 22, 2019

Berger J., Diot H., Khalidou L., Ohnenstetter D., Féménias O., Pivin M., Demaiffe D., Bernard A., Charlier B., 2013. Petrogenesis of Archean PGM-bearing chromitites and associated ultramafic–mafic–anorthositic rocks from the Guelb el Azib layered complex (West African craton, Mauritania). Precambrian Research, 224, 612– 628.

Benchmark Mineral Intelligence, Report for SRG Mining, Graphite Lenders Market Reporet, 30 November 2022

Bering, JW et al. 1998 – Evaluation de l'inventaire des ressources minérales de Guinée – BGR, Hanovre, cartes et rapports.

Bessoles B., 1977. Géologie de l'Afrique, le craton ouest africain Mém. B.R.G.M., n°88 Orléans (France), 402p.

BGR (Bundesanstalt für Geowissenschaften und Rohstoffe). Étude d'évaluation de l'inventaire des ressources minérales de Guinée. Projet Guinéo-Allemand d'Évaluation du potentiel minier de la Guinée. Hannover. 1998.

BRGM (Bureau de recherches géologiques et minières). Notice explicative de la carte géologique à 1 :200 000, feuillet no 34-33 N'zérékoré-Tinsou, 1ere édition, 1999. 31pp.

BUMIFOM., Dec 1953. Concentration par flottation, Bureau Minier de la France d'Outre-Mer.

BUMIFOM., Dec 1953. Laboratoire et station d'essai, Bureau Minier de la France d'Outre-Mer.

BUMIFOM., Jan 1952. Rapport sur le gisement de graphite, Bureau Minier de la France d'Outre-Mer.

BUMIFOM., Jan 1955. Laboratoire et station essais, Bureau Minier de la France d'Outre-Mer.

BUMIFOM., March 1952. Rapport prospection, Bureau Minier de la France d'Outre-Mer.

BUMIFOM., Oct 1951. Essais de concentration de schistes graphitique par flottation Bureau Minier de la France d'Outre-Mer.

Cahen L., Snelling N. J., Delhal J. & Vail J. R., 1984. The Geochronology and Evolution of Africa. Clarendon Press, Oxford, 512 p.

CTMP (Centre de Technologie Minérale et de Plasturgie Inc.). Graphite characterization, report R-4610. 2013. 6p.

Derrick Corporation, "Derrick Stacksizer test results" for SRG Graphite, April 2019

Dorfner Analysenzentrum und Anlagenplanungsgesellschaft GmbH (Anzaplan). Evaluation of Spheroidization, Purification of a Graphite Concentrate. Final Report 211613068 rev1 for Sama Graphite Inc. August 16, 2017

DRA Projet de graphite Lola, Hydrogéologie et dénoyage des fosses minières, by Schadrac Ibrango, P. Geo, PhD, MBA, dated March 2023.

DRA/Met-Chem (2018): NI 43-101 Technical Report – Mineral Resource Estimate for Lola Graphite Project submitted to SRG Graphite Inc. on February 5, 2018. 243 pp.

DRA/Met-Chem (2018): NI 43-101 Technical Report – Preliminary Economic Assessment, Lola Graphite Project submitted to SRG Graphite Inc. on August 2, 2018. 301 pp.

DRA/Met-Chem (2018): NI 43-101 Amended Technical Report – Preliminary Economic Assessment, Lola Graphite Project submitted to SRG Graphite Inc. on September 7, 2018. 303 pp.

Environmental & Social Impact Ltd. ("EEM") "Étude d'impact environnemental et social Projet de Graphite Lola" by, issued on February 8, 2019

E-mail: From: Raphaël Beaudoin, P.Eng., VP Operations, Metallurgy and Process Design, Subject: "Roche Fraiche à SGS", March 29, 2019

Epoch, "Optimization Study to the 2019 Lola Graphite Mine Tailings Storage Facility Bankable Feasibility Study", March 27, 223.

Epoch, "Bankable feasibility study report for the Lola graphite mine tailings storage facility", project no. 127-068, Aug. 2019.

FLSmidth, "UCS AND PAC TEST (Unconfined Compressive Strength and Pennsylvania Crusher Abrasion Test)" for SRG Graphite; November 2018

Independent Environmental Consultant ("IEC") - Air Quality, Noise and Vibration Study, March 22, 2023

Independent Environmental Consultant ("IEC") – Technical Memo: Air Quality and Noise Exposure – Permanent Worker Camp, March 23, 2023

GES/SIMPA, « Rapport de la consultation publique pour l'étude de cadrage et des termes de référence du projet d'exploitation du graphite par Sama Resources Guinee à Lola », March 2017.

Jenike and Johanson Ltd., Flow property test results for graphite ore (Report 71241-1). for SRG Graphite Inc. December 31, 2018

Kouamélan, A.N., Delor, C., et Peucat, J.J., 1997 – Geochronological evidence of reworking of archean terrains during the early Proterozoïc (2,1Ga) in the western Côte d'Ivoire (Man Rise-West African Craton). Prec. Res., 86, pp. 177-199.

Laforest, Jean, 2013 – Rapport interne Sama Resources Inc.

MDEng Report #18018-103, Feasibility level site characterization, pit slope design and waste dump evaluation for the SRG Graphite Lola Graphite project in Guinea, July 16, 2019. 169 pp.

Met-Solve Laboratories Inc, Scrubber Test on Lola Graphite Project Samples for SRG Graphite Inc, May 14, 2019

Obermüller, A., 1941. Description pétrographique et étude géologique de la région forestière de la Guinée Française. Thèse de Doctorat ès Sciences et Bull Service des Mines (AOF), 5, 207 p.

Picard, C., 2017. Minéralogie du gîte à graphite de LOLA (Guinée), Morphologie et propriétés des minéralisations. l'Université de Franche-Comté – Besançon – France Chercheur en Ressources Minérales – UMR Chrono-environnement Besançon et ISTerre Grenoble. SRG internal report.

Pitra, P., Kouamelan, A.N., Ballèvre, M., Peucat, J.J., Paleoproterozoic high-pressure granulite overprint of the Archean continental crust: evidence for homogeneous crustal thickening (Man Rise, Ivory Coast). Journal of metamorphic geology. 28, 41-58, 2010.

ProGraphite GmbH. Advanced Testwork on Flake Graphite from the Lola Graphite Deposit, Guinea for SAMA Graphite Inc., April 21, 2017.

ProGraphite GmbH. Flotation Testwork on Flake Graphite Ore from the Lola Graphite Deposit, Guinea for SAMA Graphite Inc. August 12, 2017.

SGS Lakefield, An Investigation into Three Metallurgical Samples from the Lola Graphite Deposit, Guinea, SRG Graphite Inc.– Project 16553-004 – MI5003-JAN19 – Draft Report, February 21, 2019

SGS Lakefield, Scoping Level Metallurgical Testing on Samples from the Lola Deposit, June 18, 2018.

SGS Lakefield, Solid-liquid separation and rheology test results summary for five flotation process samples in support of the feasibility level study for SRG Graphite Inc.- Project 16553-004 – CA20M-00000-110 – Draft Report, March 6, 2019

SGS Lakefield. An Investigation into the optimisation of the process flowsheet for the Lola Graphite Project. Final Report (Draft) for SRG Graphite Inc. April 19, 2019

SGS Lakefield. Lab results: 165530-04 A.I., RWI, BWI for SRG Graphite Inc. April 4th, 2019.

SGS Mineral Services, SMC Test Report®. for SRG Graphite Inc. March 2019

SIMPA, « Rapport provisoire de l'Étude de l'état initial socio-économique, Projet d'exploitation du graphite de Lola », Novembre 2017 (non publié)

SIMPA, « Rapport provisoire de l'Étude de l'état initial socio-économique, Projet d'exploitation du graphite de Lola », Novembre 2017 (non publié)

SIMPA, « Termes de référence de l'étude d'impact environnemental et social du projet d'exploitation de graphite », Juillet 2017.

SIMPA, « Termes de référence de l'étude d'impact environnemental et social du projet d'exploitation de graphite », Juillet 2017.

Sow, Sekou Oumar, Caractérisation géologique et pétrographique de l'indice de graphite Archéen de Lola en Guinée, Travail d'Etudes et de Recherches (TER), Université de Franche-Conté, France, 30 p., 2014.

SRG Graphite (2018). Plan d'Engagement des Parties Prenantes, Projet Lola Graphite, Guinée. Émis le 25 mai 2018, 26 pages.

SRG Graphite Inc., (July 2019), "SRG Reports successful processing of 200t at SGS Lakefield Pilot Plant", Retrieved from: http://srggraphite.com/news/srg-reports-successful-processing-of-200t-at-sgs-lakefield-pilot-plant-research-agreement-with-mcgill-university-for-graphite-processing-innovation/

Thieblemont, D., Goujou, J.C., Delor, C., Cocherie, A., Lafon, J.M., Tegyey, M., Theveniaut, H., Lacomme, A., Bah, M., Balde, A., Sane, H., Sall, H., Souare, S., Toure, J., 1999. Notice explicative de la Carte géologique de la Guinée au 1/200 000, Feuille n° 34–33, N'Zérekoré - Tinsou. Ministere des Mines, de la Géologic et de l'Environnement, 31 p.

Thieblemont, D., Goujou, J.C., Egal, E., Cocherie, A., Delor, C., Lafon, J.M., Fanning, C.M., 2004. Archean evolution of the Leo Rise and its Eburnean reworking. Journal of African Earth Sciences. 39, 97–104.

28 ABBREVIATIONS

The following abbreviations may be used in the Report.

Abbreviation	Terms or Units
μm	Microns, Micrometre
'	Feet
"	Inch
$	Dollar Sign
$/m^2	Dollar per Square Metre
$/m^3	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-Dimensional
3D	Three-Dimensional
Al	Aluminium
ACG	Aluminia Compagnie de Guinée
Ag	Silver
AQNV	Air Quality, Noise and Vibration
ARD	Acid Rock Drainage
ARO	After Reception of Order
ASL	Above Sea Level
Au	Gold
Be	Beryl/Beryllium
BDF	Bulk Density Factor
BFA	Bench Face Angle
BG	Battery-Grade
BHS	BHS Filtration Inc.

Abbreviation	Terms or Units
BIF	Banded Iron Formation
BMI	Benchmark Minerals Intelligence
BOM	Build, Operate, and Maintain
BRGM	*Bureau de Recherches Géologiques et Minières*
BUMIFOM	*Bureau Minier de la France d'Outre-Mer*
Ca	Calcium
Capex	Capital Expenditures
CBG	*Compagnie des Bauxites de Guinée*
CBK	Compagnie des Bauxite de Kindia
CDA	Canadian Dam Association
Ce	Celium
cfm	Cubic Feet per Minute
Cg	Graphitic Carbon
CL	Concentrate Leach
CLA	Community Liaison Agent
cm	Centimetre
COG	Cut-off Grade
Cs	Cesium
CTMP	*Centre de Technologie Minérale et de Plasturgie*
Cu	Copper
d	Day
DCF	Discounted Cashflow
DDH	Diamond Drill Hole
DEM	Digital Elevation Model
DTH	Down-the-Hole
DTM	Digital Terrain Model
EEM	EEM Environmental & Social Impact LTD
Electrosynthesis	Electrosynthesis Company
EM	Electro-Magnetic

Abbreviation	Terms or Units
EPCM	Engineering, Procurement and Construction Management
EPS	Enhanced Production Scheduler
EQA	Environmental Quality Act
ESIA	Environmental and Social Impact Assessment
ESS	Energy Storage System
EV	Electric Vehicle
Fe	Iron
FEGSEM	Field Emission Gun SEM
FOB	Free on Board
FS	Feasibility Study
ft	Feet
FX Rate	Exchange Rate
g	Grams
G&A	General and Administration
GCP	Ground Control Point
GEMS	Gemcom Software
GPS	Global Positioning System
h	Hour
h/d	Hours per Day
h/y	Hour per Year
H_2	Hydrogen
ha	Hectare
HADD	Harmful Alteration, Disruption or Destruction
HEV	Hybrid Electric Vehicle
HFO	Heavy Fuel Oil
HG	High Grade
HIMS	High Intensity Magnetic Separator
HME	Heavy Mobile Equipment
HMI	Human Machine Interface

Abbreviation	Terms or Units
hp	Horsepower
HQ	Drill Core Size (6.4 cm Diameter)
HVAC	Heating Ventilation and Air Conditioning
Hz	Hertz
I/O	Input / Output
IBC	Intermediate Bulk Container
ICP-AES	Inductively Coupled Plasma – Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma – Mass Spectroscopy
ICP-OES	Inductively Coupled Plasma – Optical Emission Spectroscopy
IEC	Independent Environmental Consultant
IRR	Initial Rate of Return
ISR	Initial Settling Rate
ISP	Internet Service Provider
ITSP	Internet Telephone Service Provider
IX	Ion Exchange
kg	Kilogram
kg/y	Kilogram per Year
km	Kilometre
kPa	Kilopascal
Kt	Kilotonne
kW	Kilowatt
kWh	Kilowatt-hour
kWh/t	Kilowatt-hour per Metric Tonne
L	Litre
LG	Lerchs-Grossman
LG-3D	Lerchs-Grossman – 3D Algorithm
LIMS	Low Intensity Magnetic Separator
LMO	Lithium Manganese Oxide
LOM	Life of Mine

Abbreviation	Terms or Units
LV	Low Voltage
m	Metre
M	Million
m^2	Square Metre
m^3	Cubic Metre
m^3/d	Cubic Metre per Day
m^3/s	Cubic Metre per Second
m^3/y	Cubic Metre per Year
mA	Milliampere
Mb/s	Mega Bits per Second
Mm^3	Million Cubic Metres
MCC	Motor Control Centre
Mg	Magnesium
MIBC	Methyl Isobutyl Carbinol
mm	Millimetre
mm/d	Millimetre per Day
Mm^3	Million Cubic Metre
Mm^3/y	Million Cubic Metre per Year
MMER	Metal Mining Effluent Regulation
Mn	Manganese
MOLP	Multiple Objective Linear Programming
MPSO	MinePlan Schedule Optimizer
MRE	Mineral Resources Estimate
MSEP	MineSight Economic Planner Module
MV	Medium Voltage
MVA	Mega Volt-Ampere
MVR	Mechanical Vapor Recompression
MW	Megawatts
Na	Sodium
Na_2O	Sodium Oxide

Abbreviation	Terms or Units
NRCan	Natural Resources Canada
Nb	Niobium
NCA	Nickel-Cobalt-Aluminium
NE	Northeast
Ni	Nickel
NiCd	Nickel-Cadmium
NI	National Instrument
NMC	Noble Metal Cathode
NPV	Net Present Value
NQ	Drill Core Size (4.8 cm diameter)
NSR	Net Smelter Return
OER	Demande d'Objectifs Environnementaux de Rejet
OK	Ordinary Kriging
Opex	Operating Expenditures
P1P	Phase 1 Plant
PAC	Pennsylvania Crusher Abrasion
PEA	Preliminary Economic Assessment
PF	Process Flow
PFS	Pre-Feasibility Study
pH	Potential Hydrogen
PIR	Primary Impurity Removal
PLC	Programmable Logic Controllers
POV	Pre-operational Verification
PP	Pre-Production
ppm	Part per Million
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
QP	Qualified Person

Abbreviation	Terms or Units
ROM	Run-of-Mine
rpm	Revolutions per Minute
RQD	Rock Quality Designation
RUSAL	United Company RUSAL
s	Second
S	Sulphur
S/R	Stripping Ratio
SAG	Semi-Autogenous Grinding
SANS	South African National Standard
SEDAR	System for Electronic Document Analysis and Retrieval
SEM	Scanning Electron Microscope
SEM-EDS	Scanning Electron Microscope with an Energy Dispersive Spectrometer
SG	Specific Gravity
Si	Silicium
SIR	Secondary Impurity Removal
SMD	*Société Minitère de Dinguiraye*
SMM	Stirred Media Mill
Sn	Tin
SODEGO	*Société de Développement de Gouessosso*
SPT	Standard Penetration Test
SQ	Sûreté du Québec
SSSAG	Single Stage SAG Mill
t	Metric Tonne
t/d	Metric Tonne per Day
t/h	Metric Tonne per Hour
t/m^3	Metric Tonne per Cubic Metre
t/y	Metric Tonne per Year
Ta	Tantalum
TG	Technical-Grade
TIR	Tertiary Impurity Removal

Abbreviation	Terms or Units
ton	Short Ton
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
TUFUA	Thickener Underflow Unit Arwea
U	Uranium
$US or USD	United States Dollar
USA	United Stated of America
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
V	Volt
VAT	Value Added Taxe
VFD	Variable Frequency Drive
VLF	Very Low Frequency
W	Watt
WAC	Est African Craton
WHIMS	Wet High Intensity Magnetic Separation
WTP	Waste Water Treatment Plant
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence
XRT	X-Ray Transmission
y	Year
Y	Yttrium
Zn	Zinc
Zr	Zirconium

29 CERTIFICATE OF QUALIFIED PERSON

Elie Accad*, P. Eng., MBA*

To accompany the Report entitled “NI 43-101 Technical Report – Feasibility Study Lola Graphite Project with an effective date of February 27, 2023, and issued on April 7, 2023 (the "Technical Report") prepared for SRG Mining (“SRG” or the “Company”).

I, Elie Accad*, P. Eng., MBA* do hereby certify that:

1. I am a Project Manager with DRA Global Limited with an office at suite 600, 555 René-Lévesque Blvd. West, Montreal, Quebec, Canada.
2. I graduated with a bachelor’s degree in mechanical engineering from the American University of Beirut in 1981 and I have obtained an MBA from McGill University, Canada in 1991.
3. I am a registered member of “*Ordre des Ingénieurs du Québec*”.
4. I have practiced my profession since 1982 with over 17 years of experience in mining projects.
5. My work experience includes participation in the management and implementation of industrial and mining projects and the preparation of Study Reports and NI 43-101 Technical Reports for projects in various parts of the world including North and South America and Western Africa.
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 am responsible for the preparation of Sections 2, 3, 4, 5 ,18 (except 18.3), 19, 20 (except 20.8 and 20.9), 22 and 24 and parts of sections 1, 25, 26 and 27 of the Technical Report.
9. I did not visit the property on that is the subject to the 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 7th day of April 2023

“Original Signed and sealed”
Elie Accad, P. Eng, MBA
Project Manager
DRA Global

Marc-Antoine Audet, P. Geo, Ph.D.

To accompany the Report entitled "NI 43-101 Technical Report - Feasibility Study Lola Graphite Project with an effective date of February 27, 2023, and issued on April 7, 2023 (the "Technical Report") prepared for SRG Mining ("SRG" or the "Company").

I, Marc-Antoine Auder, P. Geo., Ph.D., do hereby certify that:

1. I am Geological Consultant and CEO & President, Sama Resources with an office at 1320 Graham, suite 132, Mont-Royal, Quebec, Canada.
2. I graduated with a Ph.D. in geology degree from UQAM University in 2009.
3. I am a registered member of *"Professional Geoscientists of Ontario"* (# 612) and "Ordre des Geologues du Quebec" (# 1341)
4. I have practiced my profession since 1986 with over 30 years of experience in mining projects.
5. My work experience includes Exploration, Resources Estimation and Project Management.
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 43101.
7. I am independent of the Company applying all the tests in Section 1.5 of NI 43-101.
8. I am responsible for the preparation of Sections 6, 7, 8, 9, 10, 11, 12, 14 and 23 and parts of sections 1, 25 and 26 of the Technical Report.
9. I did not visit the property on that is the subject to the 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 7th day of April 2023

"Original Signed and Sealed"

Marc-Antoine Audet, P.Geo, Ph.D.
Geological Consultant

Volodymyr Liskovych, P.Eng., Ph.D.

To accompany the Report entitled "NI 43-101 Technical Report – Feasibility Study Lola Graphite Project with an effective date of February 27, 2023, and issued on April 7, 2023 (the "Technical Report") prepared for SRG Battery Minerals ("SRG" or the "Company").

I, *Volodymyr Liskovych, P. Eng., Ph.D.,* do hereby certify:

1- I am a Principal Process Engineer with DRA Americas with an office at 20 Queen Street West, 29th Floor, Toronto, Ontario, Canada

2- I am a graduate from Zaporizhzhia State Engineering Academy, Zaporizhzhia, Ukraine in 1996 with a Metallurgical Engineer Degree, and a graduate from National Metallurgical Academy of Ukraine, Dnipro, Ukraine with the PhD degree in Metallurgical Engineering in 2001.

3- I am a registered member of the Professional Engineers of Ontario (#100157409).

4- have worked continuously as a Metallurgical Engineer for more than *25* years since my graduation from Zaporizhzhia State Engineering Academy.

5- My relevant experience for the purpose of the Technical Report is:

- Review and report on mineral processing and metallurgical operations and projects around the world for due diligence and regulatory requirements.
- Engineering study (PEA, PFS, FS, and Detailed Engineering) project work on many minerals processing and metallurgical and hydrometallurgical projects around the world, and in North America.
- Operational experience in operations management and operational support positions in metallurgical and hydrometallurgical operations in Ukraine, Canada, and Brazil

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 am responsible for the preparation of Sections 13 and 17, and portions of Sections 1, 21, and 25 to 27 of the Technical Report.

9- I did not visit the property on that is the subject to the Technical Report.

10- I had a prior involvement with the property subject of the Technical Report as QP of Sections 13 and 17, and portions of Sections 1, 21, and 25 to 27 of the 2019 Technical Report of the Lola Project.

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 7th day of April 2023

"Original Signed and Sealed"

Volodymyr Liskovych, P. Eng, Ph.D.
Principal Mining Engineer
DRA Global Limited

Ghislain Prévost, P. Eng. MASc

To accompany the Report entitled "NI 43-101 Technical Report – Feasibility Study Lola Graphite Project with an effective date of February 27, 2023, and issued on April 7, 2023 (the "Technical Report") prepared for SRG Battery Minerals ("SRG" or the "Company").

I, Ghislain Prévost, P. Eng., B. Mining Eng, MASc Mineral Eng, 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 engineering in gold, silver, base metals, and other projects across Canada and worldwide.
5- My relevant work experience includes:
    - Design, scheduling, cost estimation and Mineral Reserve estimation for several open pit studies.
    - Technical assistance in mine design and scheduling for mine operations in Canada, Brazil, and Guinea.
    - 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 am responsible for the preparation of Sections 15 and 16, and portions of Sections 1, 21, and 25 to 27 of the Technical Report.
9- I did not visit the property on that is the subject to the 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 7th day of April 2023

"Original Signed and Sealed"

Ghislain Prévost, P. Eng., B. Mining Eng, MASc
Principal Mining Engineer
DRA Global Limited

Schadrac Ibrango, P. Geo, PhD, MBA

To accompany the Report entitled "NI 43-101 Technical Report – Feasibility Study Lola Graphite Project with an effective date of February 27, 2023, and issued on April 7, 2023 (the "Technical Report") prepared for SRG Battery Minerals ("SRG" or the "Company").

I, Schandrac Ibrango, P. Geo., PhD, MBA, do hereby certify that:

1- I am a hydrogeologist with DRA Global Limited with an office at suite 600, 555 René-Lévesque Blvd. West, Montreal, Quebec, Canada.

2- I graduated with a master's degree in Geology from the university of Ouagadougou (Burkina Faso) in 1998, a PhD in engineering from the Darmstadt University of Technology (Germany) in 2005 and a master's degree in Business administration (MBA) from the University of Quebec in Montreal (UQAM) in 2016.

3- I am a registered member of "*Ordre des Géologues du Québec*" (# 1102) and the Professional Engineers and Geoscientists of Newfoundland and Labrador (# 07633).

4- I have practiced my profession continuously since 1998 with over 25 years of experience in mining industry.

5- My work experience relevant to mining hydrogeology includes:

- Hands on experience in the development of conceptual and numerical models for pits and underground mines dewatering.
- Design, implementation, and supervision of field works related to hydrogeology in tropical areas.
- Participation as QP in the preparation of NI 43-101 technical reports for open pits projects in Canada and Africa.

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 am responsible for the preparation of Section 20.8, and parts of Sections 26.6 of the Technical Report.

9- I have visited the property subject to the Technical Report in January 13 and 14, 2023.

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 7th day of April 2023

"Original Signed and Sealed"

Schadrac Ibrango, P. Geo, PhD, MBA

Hydrogeologist

DRA Global

Claude Bisaillon, P.Eng.

To accompany the Report entitled "NI 43-101 Technical Report – Feasibility Study Lola Graphite Project with an effective date of February 27, 2023, and issued on April 7, 2023 (the "Technical Report") prepared for SRG Mining ("SRG" or the "Company").

I, Claude Bisaillon, P.Eng. do hereby certify that:

1. I am a Senior Geological Engineer with DRA Global Limited with an office at suite 600, 555 René-Lévesque Blvd. West, Montreal, Quebec, Canada.
2. I graduated from Concordia University in Montreal in 1991 with a B.Sc. in geology and from Université Laval in Quebec city in 1996 with a B.Ing. in geological engineering.
3. I am a registered member of "*Ordre des Ingénieurs du Québec*" (# 116407)
4. I have worked as an engineer continuously since graduation from university in 1996. My relevant experience for the purpose of the Technical Report is:
    a) 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.
    b) Participated and/or supervised several Mineral Resource Estimates;
    c) Lac Tétépisca NI 43-101 Technical Report with Mineral Resource Estimate, Focus Graphite Inc., April 2022;
    d) Lac Knife NI 43-101 Feasibility Study Update, April 2023;
    e) Desk top Due Diligence of two Graphite projects in Northern Europe, Confidential client, August 2022.
    f) 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 NI 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI 43 101.
6. I am independent of the Company applying all the tests in Section 1.5 of NI 43-101.
7. I am responsible for the preparation of Sections 16.2 and parts of sections 1 of the Technical Report.
8. I did not visit the property on that is the subject to the Technical Report.
9. I have not had prior involvement with the property that is the subject of the Technical Report.
10. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
11. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated this 7th day of April 2023.

"Original Signed and sealed" Claude Bisaillon, P. Eng Senior Geotechnical Engineer DRA Global

Alexander *Duggan, P. Eng.*

To accompany the Report entitled "NI 43-101 Technical Report - Feasibility Study Lola Graphite Project with an effective date of February 27, 2023, and issued on April 7, 2023 (the "Technical Report") prepared for SRG Mining ("SRG" or the "Company").

I, Alexander Duggan, P. Eng., do hereby certify that:

1. I am a Civil Engineer and Estimator Consultant located at 8045 Wyandotte Street, East, Windsor, *NBS* 1T2, Canada.
2. I graduated with a Bachelor of Science degree in Civil Engineering from the University of Aston, Birmingham, UK, IN 1982. In addition, I have obtained a Master of Science in Planning from the University of Salford, UK in 1984.
3. I am a current member of the Professional Engineers Ontario (PEO No. 100103898).
4. I have worked as an estimator in the mining and heavy industries for 33 years.
5. 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 43101.
6. I am independent of the Company applying all the tests in Section 1.5 of NI 43-101.
7. I am responsible for the preparation of section 21 and portions of sections and 25 to 27 of the Technical Report.
8. I did not visit the property on that is the subject to the Technical Report.
9. I have not had prior involvement with the property that is the subject of the Technical Report.
10. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
11. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated this 7th day of April 2023

"Original Signed and Sealed"

Alexander Duggan.
B.Sc.(Hons), M.Sc., *P.Eng,*

CERTIFICATE OF QUALIFIED PERSON

To accompany the Technical Report entitled, "NI43-101 Technical Report - Feasibility Study Update – Lola Graphite Project issued on April 7, 2023, prepared for SRG Mining Inc. ("SRG" or the "Company").

I, *Guy John Wiid, PrEng, C.Eng,* do hereby certify:

1. I am a Tailings Engineer with Epoch Resources (Pty) Ltd, with an office at Building A, Viscount Rd Office Park, 8 Viscount Rd, Bedfordview, Johannesburg, South Africa.
2. I graduated with a BSc Eng (Civil) (1988) and an MSc Eng (Civil) (1995) from the University of the Witwatersrand, Johannesburg, South Africa.
3. I am a Registered Professional Engineer (Pr.Eng) with the Engineering Council of South Africa (ECSA), Registration Number 940269 and a Chartered Engineer (C.Eng) with the American Society of Civil Engineers (ASCE), Registration Number 9945778.
4. I have worked as an engineer in the fields of mining waste management and mine closure for a total of 33 years since my graduation in 1988. This includes 18 years as a Founding Partner and Director of Epoch Resources (Pty) Ltd.
5. 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.
6. I have not visited the site of the Project.
7. I have participated in the preparation of this Technical Report and am responsible for Section 18.3 and contributed part of Sections 1, 21, and 25 to 27.
8. I have had no prior involvement with the Project
9. I am independent of the issuer applying all of the tests in section 1.5 of NI 43-101.
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. Neither I, nor any affiliated entity of mine, have earned the majority of our income during the preceding three (3) years from the Company, or any associated or affiliated companies.
12. 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 7th day of April 2023

"Original document signed and sealed"
Guy John Wiid, PrEng, C.Eng

2020 Robert-Bourassa Blvd.
Suite 300
Montréal, QC H3A 2A5
T +1 514.866.2111
F +1 514.866.2116

BBA.CA

CERTIFICATE OF QUALIFIED PERSON

To accompany the Report titled "NI 43-101 Technical Report – Feasibility Study for the Lola Graphite Project", which is effective as of March 24, 2023 and issue on March 31, 2023 (the "Technical Report"), prepared for SRG Mining Inc. (the "Company").

I, Luciano Piciacchia, P. Eng., do hereby certify that:

1. I am an engineer and director of Earth and Infrastructure with BBA Inc. located at 2020 Robert- Bourassa Blvd., Suite 300, Montreal, Quebec, H3A 2A5.
2. I am a graduate of mining engineering from McGill University in 1981 and a Masters' and Ph.D. focusing in soil and rock geotechnics, also from McGill University in 1983 and 1988.
3. I am a member in good standing of the "*Ordre des Ingénieurs du Québec*" (# 35912).
4. I have over 35 years of experience in geotechnical engineering with a focus on mining. I have applied my geotechnical/civil background to mine waste management, including waste rock, tailings and water.
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 responsible for the Section 20.9.
7. I have not visited the property site.
8. I have had no prior personal involvement with the property that is the subject of the Technical Report.
9. 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.
10. Neither I, nor any affiliated entity of mine, is at present, under an agreement, arrangement or understanding or expects to become, an insider, associate, affiliated entity or employee of SRG Mining Inc., or any associated or affiliated entities.
11. Neither I, nor any affiliated entity of mine, own, directly or indirectly, nor expect to receive, any interest in the properties or securities of SRG Mining Inc., or any associated or affiliated companies.
12. Neither I, nor any affiliated entity of mine, have earned the majority of our income during the preceding three (3) years from the Company, or any associated or affiliated companies.

13. 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 31st day of March 2023

Original signed and sealed
2023-03-31

Luciano Piciacchia, P. Eng.