NI 43-101
TECHNICAL REPORT

GAHCHO KUÉ MINE

NORTHWEST TERRITORIES
CANADA

EFFECTIVE DATE – APRIL 22, 2024
REPORT DATE – SEPTEMBER 30, 2024

PREPARED FOR

MOUNTAIN PROVINCE DIAMONDS
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NOTICE

JDS Energy & Mining Inc. (JDS) prepared this National Instrument 43-101 Technical Report, in accordance with Form 43-101F1, for Mountain Province Diamonds (MPD). The quality of information, conclusions and estimates contained herein is 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.

MPD filed this Technical Report with the Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities law, any other use of this report by any third party is at that party's sole risk.

MOUNTAIN PROVINCE DIAMONDS

JDS Energy & Mining Inc.

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1 SUMMARY

1.1 Property Description & Ownership

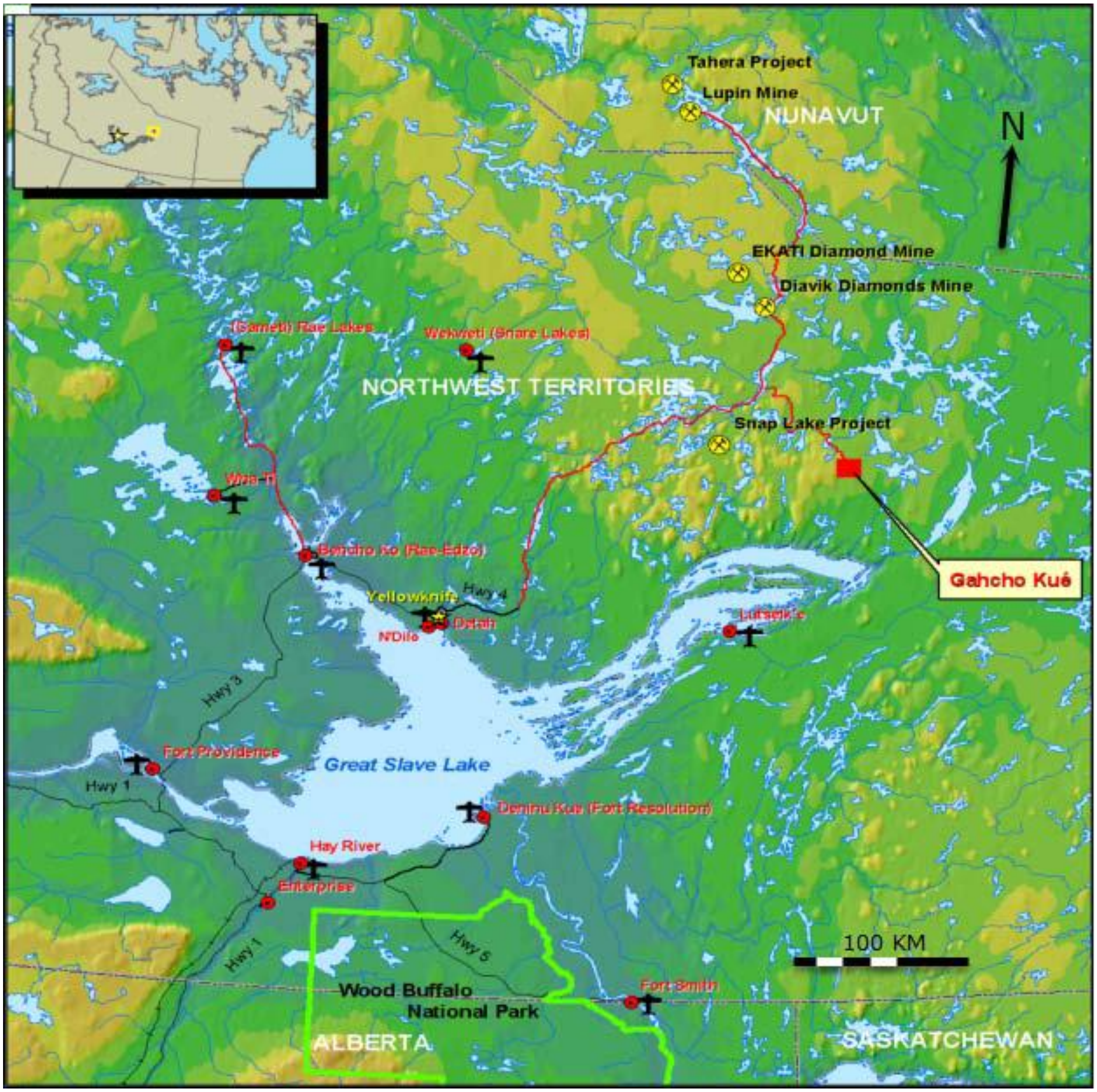
The Gahcho Kué (GK) Mine (Mine) is a joint venture (JV) of the De Beers Group (De Beers) and Mountain Province Diamonds (MPD), with ownerships of 51% and 49%, respectively. The property is located in the Northwest Territories (NWT) of Canada, 280 km east-northeast of Yellowknife. The Mine lies on the edge of the continuous permafrost zone in an area known as the barren lands. The surface is characterised as heath / tundra, with occasional knolls, bedrock outcrops, and localised surface depressions interspersed with lakes. A thin discontinuous cover of organic and mineral soil overlies primarily bedrock, which typically occurs within a few metres of surface. Some small stands of stunted spruce are found in the area along with myriad lakes. Kennady Lake, under which the kimberlite pipes lie, is a local headwater lake with a minimal catchment area.

Due to its location, the Gahcho Kué Mine is a fly-in / fly-out operation with access by winter road during February and March for freight deliveries. Access by air is currently via Yellowknife and Calgary.

The winter road (Figure 1-1) functions under a Licence of Occupation by the winter road JV partners who own or operate the Ekati, Diavik and Gahcho Kué mines. In 1999, a 120 km road spur was opened connecting the GK mine site to the winter road at Mackay Lake and has been open each year since 2013 to support on-going mine operations.

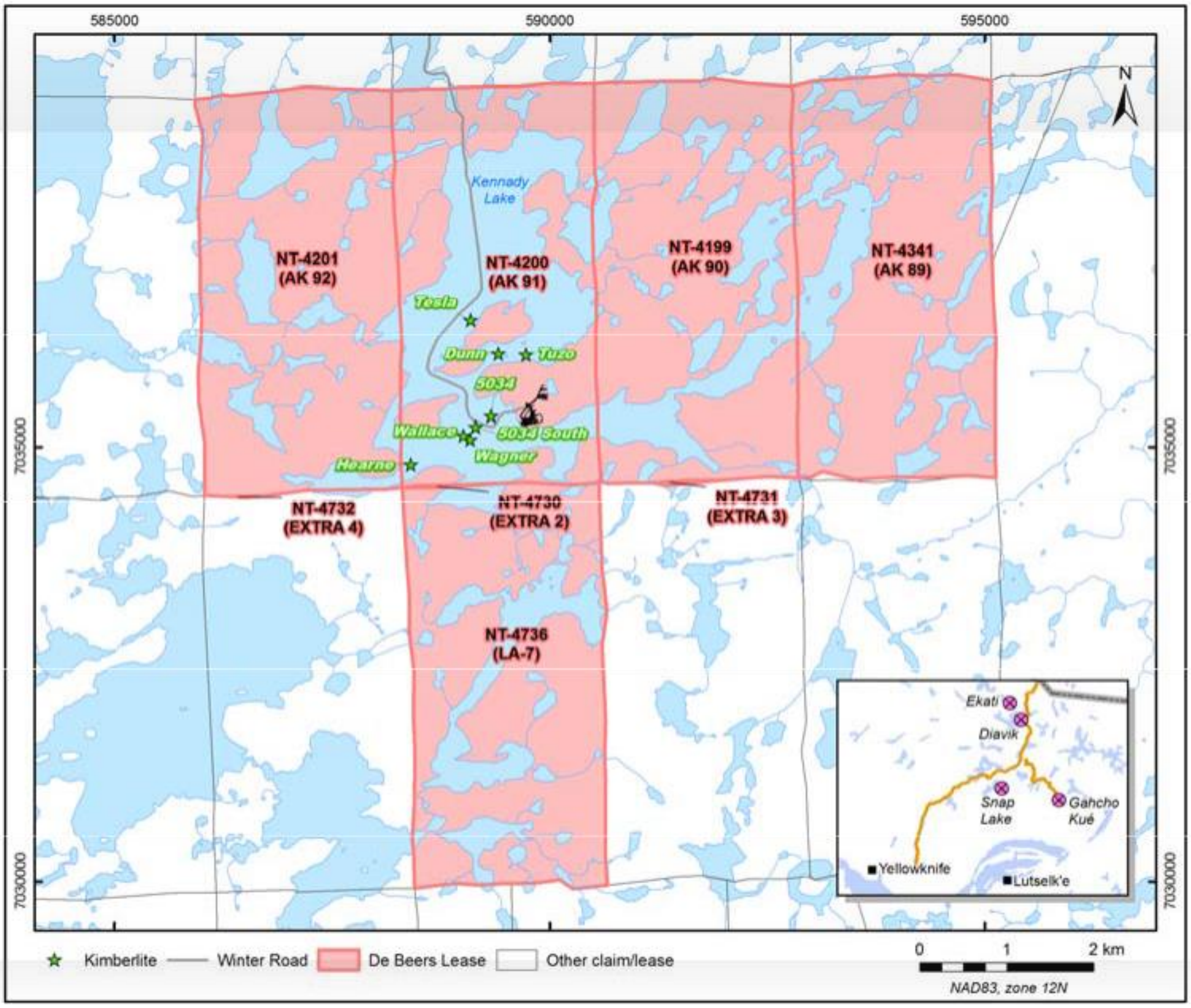
The Gahcho Kué kimberlite deposits are located within a series of mineral leases shown in Figure 1-2. Surface rights (land leases) were issued by the Government of the Northwest Territories (GNWT) to De Beers in 2015 and are presented in Figure 1-3.

Figure 1-1: Location of Gahcho Kué Mine



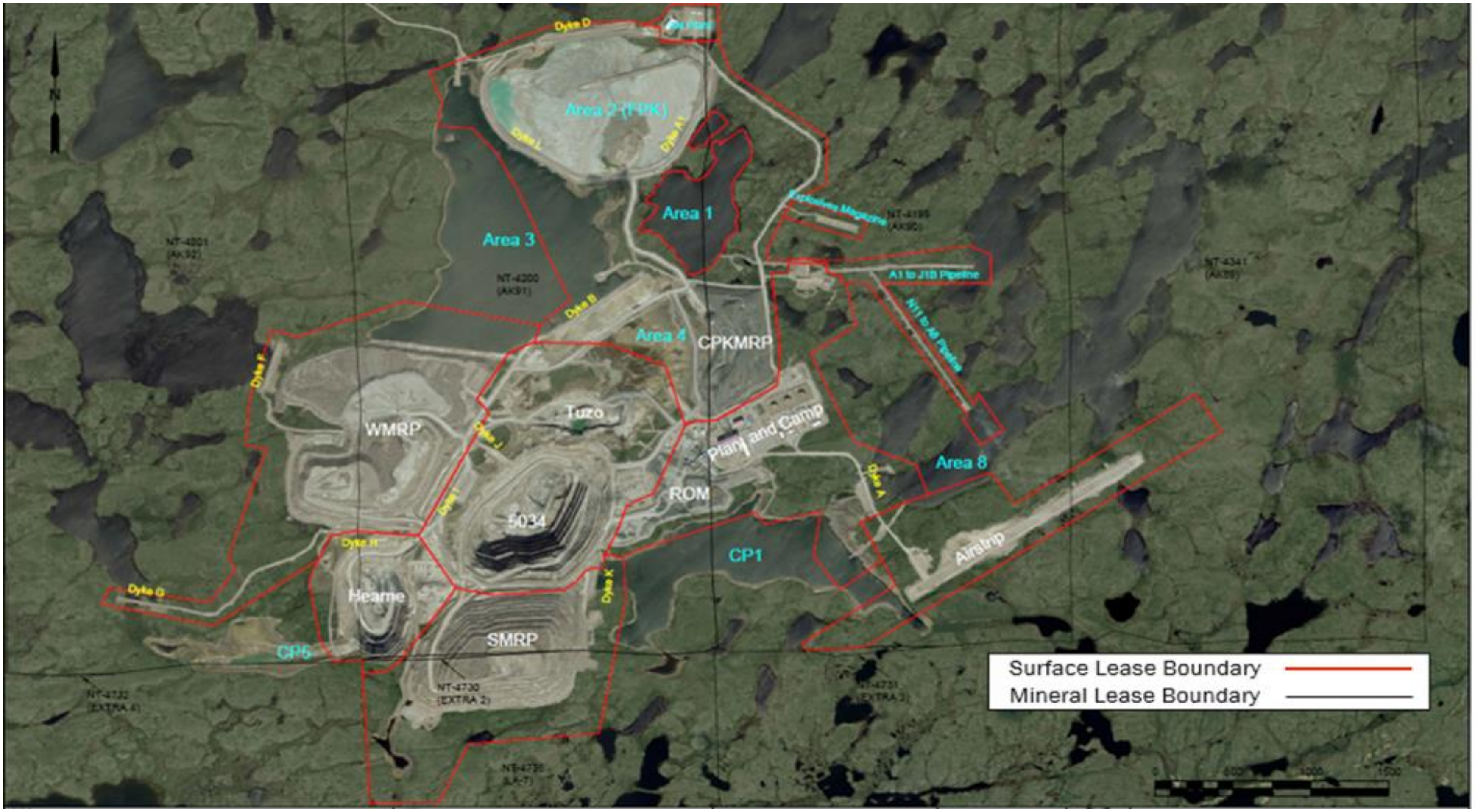
Source: DeBeers (2013)

Figure 1-2: Mineral Lease Boundary Map



Source: DeBeers (2019)

Figure 1-3: Land Lease Boundary



Source: DeBeers (2021)

1.2 Geology, Resources & Reserves

The baseline estimation and classification of the mineral resources was completed by AMEC (now Wood Group), summarized in the "Gahcho Kué Kimberlite Project NI 43-101 Technical Report" (AMEC 2009). As a result of an additional Tuzo deep drilling program undertaken in 2012, additions / modifications to the AMEC mineral resource for the Tuzo Deep mineral resources more than 300 metres below surface (mbs) elevation were summarized in the "Update of the Mineral Resource Estimate for the Tuzo Kimberlite, Gahcho Kué Project, Northwest Territories, Canada NI 43-101 Technical Report" (Mineral Services, 2013). The baseline resource (AMEC 2009) and the Tuzo Deep Resource (Mineral Services, 2013) were compiled for the 2014 Gahcho Kué Technical Report and Feasibility Study (JDS, 2014). Additional drilling since the 2014 FS has allowed classification of 5034 Southwest Corridor 5034 northeast Extension (NEX) and the Wilson kimberlite. The geological resource block models were updated by Waldegger (2018), Donovan (2019), Gostlin and Donovan (2021) and Donovan (2022, 2023, 2024) using additional diamond drilling and mining information.

The estimation and classification of the mineral resources has since been updated to reflect operations as of April 2024. These resources are exclusive of material processed prior to this report. Resources which were mined and stockpiled at the time of this report are summed separately from the remaining in-situ resources.

The Gahcho Kué Mine resources are summarized in Table 1-1. The QPs have reviewed the resources and compared to those stated in the previous NI 43-101 Technical Report (JDS, 2022) and are of the opinion that depletion, modifying factors applied, and additional classified material used to generate the updated resource estimate are reasonable and provide an accurate and complete basis for state of the resource (April 22, 2024). Stated Resources are inclusive of Mineral Reserves.

Table 1-1: Mineral Resource Summary (April 22, 2024)

Resource	Classification	Tonnes (Mt)	Carats (Mct)	Grade (c/t)
5034	Indicated	6.9	15.0	2.16
	Inferred	1.4	2.5	1.82
Hearne	Indicated	0.6	1.2	1.95
	Inferred	1.5	2.8	1.82
Tuzo	Indicated	11.5	18.1	1.57
	Inferred	10.3	18.4	1.78
Wilson	Indicated	2.3	2.1	0.89
	Inferred	-	-	-
Subtotal (In-Situ)	**Indicated**	**21.4**	**36.4**	**1.70**
	Inferred	**13.3**	**23.7**	**1.79**

Resource	Classification	Tonnes (Mt)	Carats (Mct)	Grade (c/t)
Stockpiles	Indicated	3.3	2.4	**0.73**
	Inferred	-	-	-
Grand Total Exclusive Resource	**Indicated**	**24.7**	**38.8**	**1.57**
	Inferred	**13.3**	**23.7**	**1.79**

Notes:

1 Mineral Resources are reported at a bottom cut-off of 1.0 mm.

2 Mineral Resources are constrained within an optimized pit shell using a 1.6 revenue factor. Prices used to determine optimal pit shell varied by facies and ranged from 71 US$/ct to 146 US$/ct with an exchange rate of 1.30 C:USD. Process recovery of the diamonds was assumed to be 100% Operating costs used to determine the optimal pit shell include an open pit mining cost of 4.1 C$/t mined and a processing cost of C$72.0/t milled.

3 Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.

4 Tonnage quoted as dry metric tonnes.

5 Resources are inclusive of indicated tonnages converted to Probable Reserves.

6 Resources have been depleted of any material that was processed prior to and including April 22, 2024.

7 MPD's attributable portion of mineral resources is 49%.

Source: De Beers (2024)

The Mineral Reserve estimate summarized in Table 1-2 was reviewed by the QPs and complies with CIM Definitions and Standards for a National Instrument (NI) 43-101 for an Operating Mine. Detailed information on mining, processing, metallurgical, and other relevant factors are contained in subsequent sections of this report.

The economic viability presented in Section 22 confirms that the probable reserve estimates meet and comply with CIM definitions and (NI) 43-101 standards. At the time of this report, the mine is economically viable using current diamond prices and prevailing long-term price estimates.

Table 1-2: Mineral Reserve Estimate (April 22, 2024)

Pipe	Classification	Tonnes (Mt)	Carats (Mct)	Grade (c/t)
5034	Probable	6.1	12.3	2.01
Hearne	Probable	0.3	0.5	1.54
Tuzo	Probable	11.3	17.3	1.52
Wilson	Probable	2.5	2.1	0.84
In-Situ Total	**Probable**	**20.3**	**32.1**	**1.59**
Stockpiles	Probable	3.3	2.4	0.73
Total	**Probable**	**23.6**	**34.6**	**1.47**

Notes:

1 Mineral Reserves are reported within detailed designed pits and confirmed to have a positive economic return. Economic evaluation is based a LOM production schedule using an average diamond price of $US95/ct, a process recovery of 100%, an exchange rate of 1.30 C:US, a mining OPEX of $5.9/t mined, a processing OPEX of $58.5/t milled.

2 Mineral Reserves are reported at a variable bottom cut-off (BCO) based on the LOM production schedule. A BCO of 1.1 mm is used for 2024-2026, and a BCO of 1.0 mm is used for 2027-2031.

3 Mineral Reserves have been depleted to account for mining and processing activity prior to and including April 22, 2024.

4 Mineral Reserves are based upon the updated resource model (2024) and therefore reflect any changes to the estimation of tonnes, grade and contained carats within that resource.

5 Mineral Reserves may be subject to legal, political, environmental and other risks and uncertainties. The QP is not aware of any legal, political, environmental or other risk factors that might materially affect the estimate of Mineral Reserves.

6 CIM definitions were followed for Mineral Reserves.

7 Tonnages are rounded to the nearest 100,000 t.

8 Tonnage and grade measurements are in metric units; contained diamonds are reported as millions of carats.

9 MPD's attributable portion of mineral reserves is 49%.

1.3 Mining

The mine design and subsequent mine plan considers Indicated Mineral Resources of the 5034 (including NEX), Hearne, Tuzo, and Wilson kimberlite pipes. Conventional truck and shovel mining is employed utilizing 29 m^3 bucket diesel hydraulic front shovels, a 17 m^3 front-end loader and 215 t class haulage trucks to mine kimberlite and waste. This fleet is augmented by 12 m^3 bucket front-end loaders, scaling excavators and 90 t haul trucks. Production drill and blast activities are supported by a fleet of 251 mm rotary drills. Pre-shear drilling is supported by 171 mm down the hole percussion drills.

Updated pit designs were completed in 2024 by De Beers which include updated geotechnical information that allowed the pit walls to be steepened at the bottom of Tuzo in order to increase Mineral resources within the life of mine plan. These pit designs were used to prepare the updated mine production plan and schedule. The plans were optimized to smooth waste stripping, while ensuring adequate kimberlite availability to meet feed requirements. The plan has been optimized with consideration to waste storage, including the mine rock piles, and in-pit waste storage at Hearne and 5034.

Pre-stripping began on land in the northern half of the 5034 pit in 2014, with the majority of the granite waste being used for road, dyke, and infrastructure construction. The full extent of the 5034 pit, including the lake bottom, was opened in 2016. Ore and waste mining at the 5034 pit is currently planned to continue until 2026 (including the NEX pushback).

Mining of Hearne pit started in December 2017 and is scheduled to be completed in late-2024. Once Hearne is complete, fine processed kimberlite (FPK) will be diverted from the FPK storage facility to the mined-out pit.

In 2020, equipment began stripping the 5034 NEX Pushback which also incorporated the first phase of Tuzo. The NEX Pushback will continue through to late-2026. At this stage in the mine life, the combined mined-out area of the NEX Pushback and the 5034 pit will be used for Tuzo mine rock storage. Waste stripping in the third and final phase of Tuzo pit began in 2024 and ore release will start at the beginning of 2026. Kimberlite production in Tuzo (including Wilson kimberlite) will be sustained until 2030.

1.4 Recovery Methods

The Gahcho Kué Mine extracts kimberlite resources from four different deposits over the planned mine life: 5034, Hearne, Tuzo and Wilson. In the process plant, this material is treated via crushing, screening, dense media separation and x-ray sorting, to produce a diamond rich concentrate that is hand sorted on site with the resulting diamond product sent to Yellowknife for final cleaning and GNWT valuation. The processing plant is targeting the recovery of liberated diamonds in the 1.1 to 28 mm size range. Diamond recovery processes are largely automated to allow efficient production with minimal human intervention.

1.5 Site & Infrastructure

The Gahcho Kué Mine is typical of many northern Canadian mining operations that lack local and regional infrastructure such as permanent road access, navigable shipping routes and ports, and external utilities. Therefore, the mine requires site specific infrastructure to sustain operations, including power generation, sewage and water treatment, personnel accommodation, storage facilities for materials delivered on the limited annual winter ice road, and an aerodrome to provide year-round cargo, food and passenger aircraft access. The existing process complex is shown in Figure 1-4.

The majority of bulk supplies during construction and operation are shipped to site during a 10-week winter road season. A 120 km winter access spur road is constructed each year to connect the mine site to the Tibbitt-to-Contwoyto winter road at km 271, just north of Lake of the Enemy.

The layout of the site is based on several criteria:

- All major structures are founded on bedrock;
- Compact footprint for minimal land disturbance and maximum site operations efficiency;
- Compact building sizes and layout for maximum energy efficiency;
- Efficient facility access for personnel and vehicles during operations; and
- Minimal impact of winter road truck traffic around the site.

Figure 1-4: Gahcho Kué Mine Site

Source: De Beers (2017)

1.6 Environmental & Socio-Economic

A Class A Land Use Permit (LUP) and Type A Water License (WL) were issued by the Mackenzie Valley Land and Water Board (MVLWB) on August 11, 2014 and September 24, 2014 for the Gahcho Kué Diamond Mine allowing full execution of the construction and operation of the mine. Additional details for licenses, permits and authorizations that have been issued for the mine are provided in Section 20.

Baseline biophysical information has been collected within the Gahcho Kué region since 1996. Following the environmental assessment and permitting phase, data collection is focused on monitoring programs that identify potential effects, evaluate impact predictions and monitor the efficacy of mitigations.

Multiple environmental monitoring and management plans have been prepared to track and mitigate impacts that the mine may have on the environment. The Gahcho Kué water management plans are adaptations of plans used successfully at other NWT diamonds mines. At Gahcho Kué mine, potentially contaminated water is kept within a controlled management basin formed by natural drainage patterns. Excess storage capacity allowances created by initial lake dewatering activities provide for operational flexibility and contingencies. The mine incorporates, where possible, a program of progressive reclamation that minimizes costs and allows timely monitoring of performance. The mined-out 5034 and Hearne pits will be used for waste storage during the later years of the mine life providing ample time for completion of the reclamation of the waste storage areas.

A Socio-Economic Agreement (SEA) for the Mine was signed with the GNWT on June 28, 2013. The SEA establishes hiring priorities and employment incentives for the Mine, training and employment objectives, business procurement objectives and it outlines how De Beers and the GNWT will work together to ensure the health and cultural well-being of NWT residents.

Additional employment will be created by the multitude of service providers to the Mine. In addition, property and payroll taxes will add significant tax revenues to the local municipality. Impact and Benefit Agreements (IBAs) are in place with six Indigenous groups.

1.7 Conclusions and Recommendations

The QPs are satisfied with the status of the mineral tenure, regulatory permits, environmental and social stewardship and workplace quality. A strong record, both during development and operations presents a positive outlook in these areas moving forward. The geological setting, mineralization, structures and the kimberlite bodies themselves are well understood. A high level of diligence from the mine's technical team continues to refine this knowledge as the mine evolves.

Qualified technical staff are employed at the Gahcho Kué Mine and additional diamond and mining industry experts are available from outside the mine. The geological database is conscientiously managed in-house. All modelling is performed within a framework of both peer and expert review. Audits have been performed by third parties to provide assurance of the reliability and completeness of the data for resource estimation.

The Gahcho Kué Processing plant has operated continuously since commissioning in September 2016 and has since exceeded 'nameplate' capacity and the operation remains focused on improving the efficiency of the process.

The mine engineering design, operating parameters and economic assumptions provide a credible basis for the conversion of mineral resources into mineral reserves. A number of years of operating history is now available. Learnings are providing valuable feedback for keeping the resource and reserve models updated and relevant as prediction tools for the mine.

The Gahcho Kué Mine is a fully functioning mine with the majority of infrastructure in place for life of mine (LOM) operations. There is a well-defined sustaining capital plan for remaining infrastructure developments required to maintain continuous production. Projected operating and capital costs appear realistic, and the proposed schedules appear reasonable for the methods employed and planned resources.

2 INTRODUCTION

JDS Energy & Mining Inc. (JDS) was commissioned by Mountain Province Diamonds (MPD) to prepare this Technical Report in accordance with the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1, collectively referred to as National Instrument (NI) 43-101 for the Gahcho Kué Mine.

2.1 Terms of Reference

This Technical Report is intended to serve as an update to mineral resources and reserves at the Gahcho Kué Mine as of April 22, 2024 It was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1. The mineral resource statement reported herein was prepared in conformity with generally accepted CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines" published on November 29, 2019.

The mine is operated through the Gahcho Kué Joint Venture (GKJV) agreement between MPD (49%) and the De Beers Group (51%).

2.2 Qualifications & Responsibilities

Qualified Persons (QPs), as defined by NI 43-101, were responsible for the preparation of this Technical Report.

None of the QPs or any associates employed in the preparation of this report has any beneficial interest in MPD and nor are any insiders, associates, or affiliates of MPD. The results of this report are not dependent upon any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings between MPD and the QPs. The QPs are being paid a fee for their work in accordance with normal professional consulting practice fees.

The following individuals, by virtue of their education, experience and professional association, are considered QPs as defined in the NI 43-101, and are members in good standing of appropriate professional institutions / associations. Table 2-1 lists the qualifications for each QP, as well as the section(s) of the report for which they are responsible.

Table 2-1: Gahcho Kué NI 43-101 Qualified Person Responsibility

Qualified Person	Company	Report Section(s) of Responsibility
Michael Makarenko, P.Eng.	JDS	Overall co-author
Dino Pilotto, P.Eng.	JDS	Overall co-author
Tysen Hantelmann, P.Eng.	JDS	Overall co-author

2.3 Site Visits

- Dino Pilotto, P.Eng. (JDS):
  - Inspection of the overall property and existing facilities on February 9, 2022.

2.4 Units, Currency and Rounding

The units of measure used in this report are as per the International System of Units (SI) or "metric" except for Imperial units that are commonly used in industry (e.g., ounces (oz.) and pounds (lb.) for the mass of precious and base metals).

All dollar figures quoted in this report refer to Canadian dollars (C$ or $) unless otherwise noted.

Frequently used abbreviations and acronyms can be found in Section 27.

This report may include technical information that requires subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error, and where these occurrences were not considered to be material.

2.5 Sources of Information

This report is based on information supplied by the De Beers Group and MPD. The QPs have no reason to doubt the reliability of the information provided. Other information was obtained from the public domain. This Technical Report is based on the following sources of information:

- QP discussions with De Beers and MPD personnel.

Inspection of the Gahcho Kué Mine Site area:

- Review of production, planning, and exploration information collected and provided by De Beers; and
- Additional information from public domain sources.

3 RELIANCE ON OTHER EXPERTS

The QPs, authors of this report, state that they are Qualified Persons for the areas as identified in the certificates of Qualified Persons. The Authors have relied upon information provided from De Beers and MPD. The QPs have taken reasonable measures to confirm information provided by others and take responsibility for the information.

3.1 Diamond Valuations

Given that diamond valuations and pricing are not publicly available, the QPs are relying on reports and opinions of other experts who are not qualified persons. The experts from the Mountain Province Diamonds Sales & Marketing group in collaboration with WWW International Diamond Consultants Ltd., have provided a current overall description of the diamond market outlook. MPD sells its share of the GK Mine production through its own unique distribution model. MPD's marketing team are involved at all steps of the sales process ensuring revenue is optimized by offering customers accurate and consistent diamond parcels through its competitive, on-line sales platform.

MPD provided updated diamond price baseline data. Modelled diamond prices for of the three Gahcho Kué mine pits are updated based on:

- Market prices - average 24 months (June 2022 to May 2024) sales;
- Assortment distribution - average of production shipments from June 2023 to May 2024;
- Size frequency distribution - average of production shipments from June 2023 to May 2024; and
- Fancies and Specials - average of production shipments sold in 2023.

The QPs have relied upon and reviewed the underlying data and pricing valuation methodologies and are of the opinion that the modelled diamond prices used reflect reasonable prices to use for the GK Mine current and planned production. This valuation and pricing information contributed to Sections 19.8 and 22 of this report.

Similarly, QPs have relied on MPD for the diamond price escalation estimate. MPD has estimated that a 5.0% real growth rate in USD diamond prices be used in the financial analysis which has been accepted by the QPs as reasonable for the current market projections based on comparable estimates used by industry experts and other diamond producers.

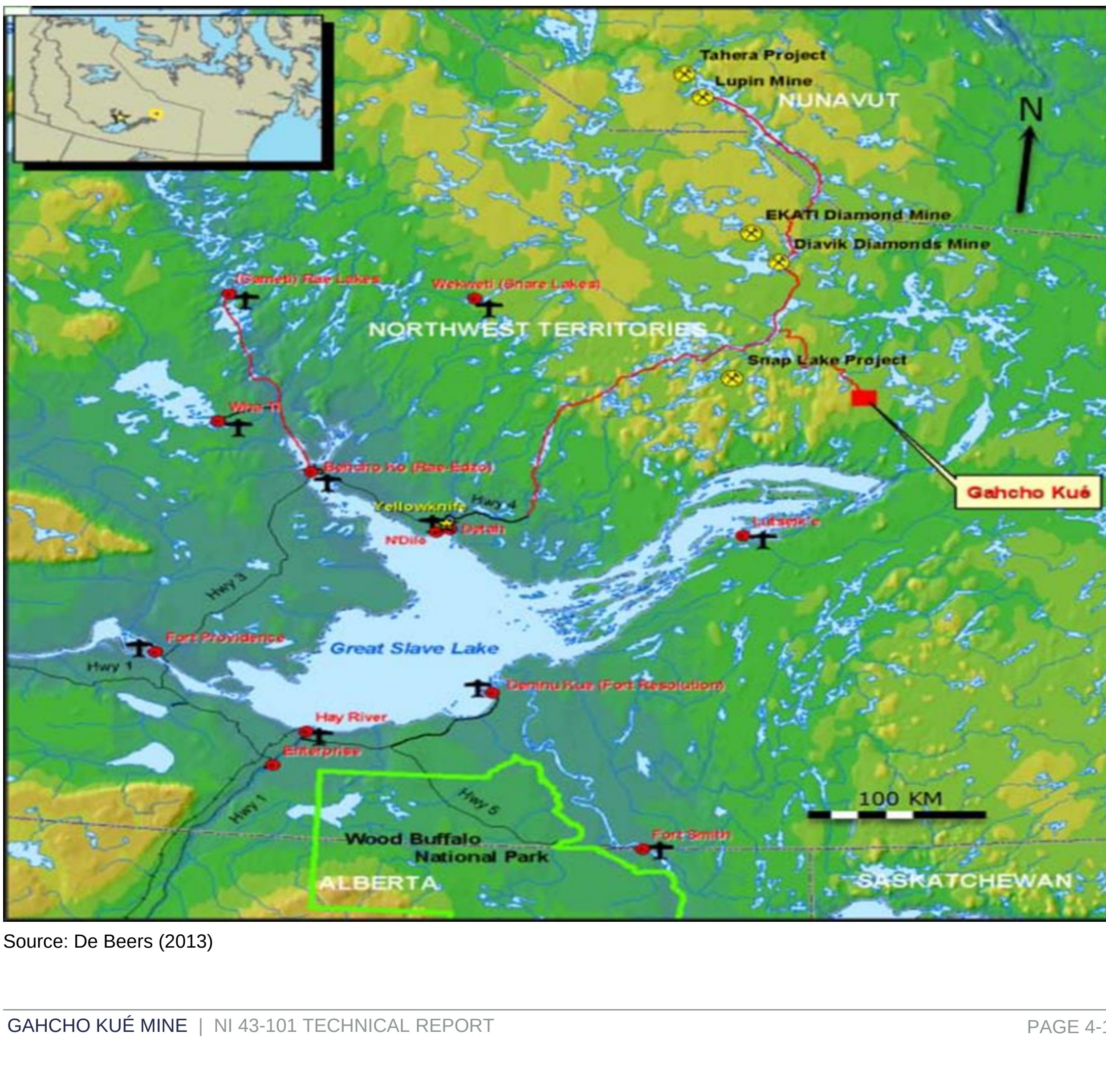
External risks are, to a certain extent, beyond the control of the Mine proponents and are much more difficult to anticipate and mitigate, although, in many instances, some risk reduction can be achieved. External risks include diamond prices. These external risks are generally applicable to all mining Projects. Negative variance to these items from the assumptions made in the economic model would reduce the profitability of the mine and the mineral resource and reserve estimates.

4 PROPERTY DESCRIPTION & LOCATION

4.1 Location

The Gahcho Kué Mine is located at Kennady Lake, approximately 280 km east-northeast of Yellowknife in the District of Mackenzie, Northwest Territories, Canada, at the approximate latitude 63.26.16N and longitude 109.12.05W (NAD83 Zone 12 coordinates 7035620N, 589735E Figure 4-1).

Figure 4-1: Location of Gahcho Kué



Source: De Beers (2013)

The Mine is located 150 km south–southeast of the Diavik operating diamond mine owned by Rio Tinto and the Ekati diamond mine owned by Burgundy Diamond Mines Ltd. at Lac de Gras.

4.2 Tenure History

The Gahcho Kué Mine was part of a larger group of mining claims, known as the AK Property, which now consists of five remaining mining leases (Figure 4-2). The AK Property was initially staked in 1992 by Inukshuk Capital Corp., and optioned to Mountain Province Mining, Inc. (now Mountain Province Diamonds) later the same year.

On staking, the Mine covered roughly 520,000 ha and included the AK and CJ claims. The CJ claims substantially lapsed in November 2001, and the remaining CJ claims lapsed on August 17, 2002, leaving only the AK claims as current at that time.

Additional partners in the AK Property included Camphor Ventures Inc. (Camphor Ventures), and 444965 B.C. Ltd., a subsidiary company of Glenmore Highlands Inc. (Glenmore Highlands). At the time, Glenmore Highlands was a controlling shareholder of MPD as defined under the *Securities Act* of British Columbia. The Glenmore Highlands subsidiary amalgamated with MPD in 1997, and Camphor Venture's interest in the AK Property was acquired by MPD during 2007.

In 1997, Monopros (now De Beers Canada) joint ventured the property. The currently applicable agreements between the partners are summarized in Section 4.4. Surrounding claims / leases were dropped and the remaining leases comprising of the Gahcho Kué Mine are described below.

4.3 Mineral Tenure

The Gahcho Kué Mine comprises five mining leases (4199, 4200, 4201, 4341, 4730, 4731, 4732, and 4736) covering a total area of 5,216.66 ha (12,889 acres). This includes three "extra" mining leases (4730, 4731, and 4732) immediately to the south and contiguous with the other mining leases (Figure 4-2). The mining leases are 100% owned by De Beers Canada Inc. who holds them on behalf of the GKJV. The participating interest of each of the GK joint venture parties is governed by the 2009 amended joint venture agreement, which is registered against the mineral leases (see Section 4.4).

Annual lease payments, payable to the Receiver General Canada (Northwest Territories, c/o Mining Recorders Office), are $2.50 per hectare for the duration of the 21-year lease period. Payments increase to $5.00 per hectare per year during each additional 21-year renewal term.

All mining leases were legally surveyed by licenced surveyors.

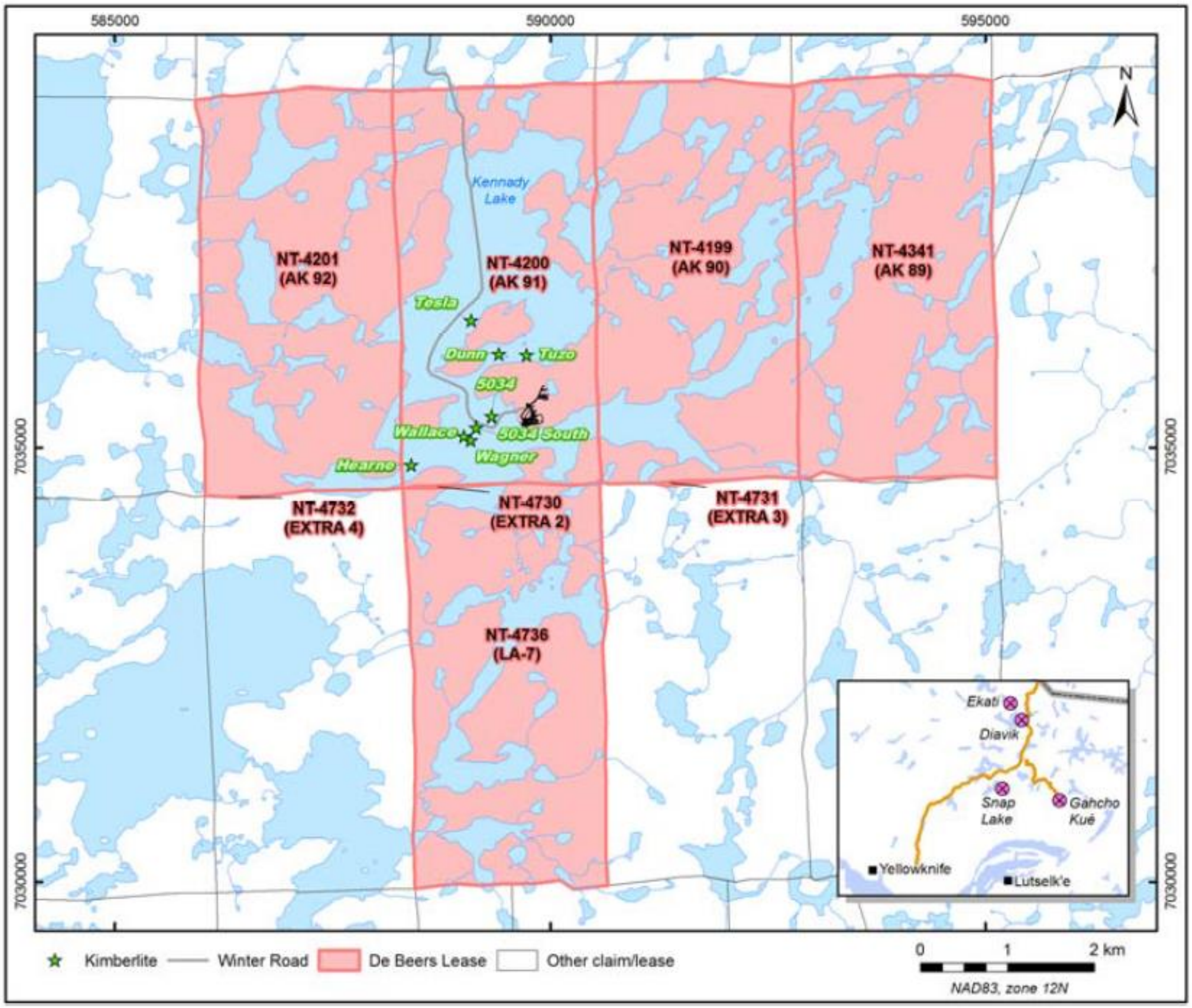
The QPs are of the opinion that the leases are valid at the effective date of this report and until the expiry dates in Table 4-1. Four of the current leases expire between July 14, 2044 with the remaining four expiring March 31, 2026.

Table 4-1: Mineral Tenure Summary

Licence/Permit Type & Number	Expiry Date	Ownership
Mineral Lease No. 4199 (F28440)	July 14, 2044	De Beers Canada Inc (100%) on behalf of GKJV
Mineral Lease No. 4200 (F28441)	July 14, 2044	
Mineral Lease No. 4201 (F28442)	July 14, 2044	
Mineral Lease No. 4341 (F28439)	July 14, 2044	
Mineral Lease No. 4730 (F55365)	March 31, 2026	
Mineral Lease No. 4731 (F55366)	March 31, 2026	
Mineral Lease No. 4732 (F55367)	March 31, 2026	
Mineral Lease No. 4736 (F51169)	March 31, 2026	

Source: De Beers (2023)

Figure 4-2: Gahcho Kué Mineral Tenure



Note:

Mining lease boundaries for 4732, 4730, and 4731 are approximate at this scale.

Source: De Beers (2019)

4.4 Agreements

The Monopros Ltd. Joint Venture Agreement, dated March 6, 1997, was entered between Monopros Ltd. (Monopros; a wholly-owned Canadian subsidiary of De Beers Consolidated Mines (now known as the De Beers Group), MPD, and Camphor Ventures. The parties amended the Monopros Ltd. Joint Venture Agreement in 2000.

An updated and expanded JV Agreement between De Beers and MPD was signed October 24, 2002 and became effective on January 1, 2002.

MPD acquired Camphor Ventures' interest in the joint venture in 2007.

A further updated and amended JV agreement between De Beers and MPD was executed effective July 3, 2009. The JV agreement superseded the previous JV agreements. The agreement maintains the Mine ownership at 51% De Beers and 49% MPD. Each party is responsible for funding their respective share of the Mine development costs from January 1, 2009 onward, and each party shall receive a proportional share of the diamond production.

The amended agreement also sets forth the amount of "allowable" expenses of exploration work between March 8, 2000, and December 31, 2008 previously funded by De Beers, and sets forth a repayment schedule by MPD to De Beers for their 49% share of the allowable expenses.

On March 16, 2018, De Beers signed a memorandum of understanding with MPD that contemplates incorporating properties owned by Kennady Diamonds Inc. into the Gahcho Kué Joint Venture, in the event that MPD successfully acquires Kennady Diamonds. Kennady was successfully acquired by MPD on April 13, 2018.

4.5 Surface Rights

Crown lands are lands owned by the federal, territorial or provincial governments. Authority for control of these public lands rests with the Crown, hence their name. Crown land and Commissioner's land are both types of public lands. In the Northwest Territories the Government of Northwest Territories (GNWT) is responsible for the majority of Crown land including the responsibility for public land, water and resource management. Public land is managed and administered by the GNWT, and specifically, by the Department of Lands.

Administration of Crown lands, including minerals for the Northwest Territories and Nunavut, is based on the *Territorial Lands Act* (TLA) and its regulations. The Regulations under the TLA that deal with mineral tenure, leasing and royalties are the Northwest Territories and Nunavut Mining Regulations (NTNMR), formerly known as the Canada Mining Regulations (CMR). Under the current NTNMR, a party may prospect for minerals and stake mineral claims on any Crown lands covered under the TLA, including lands in and around the area of the Mackenzie Valley.

A surface lease gives the occupant the exclusive right to use the land for a specified period of time and allows the lessee to make improvements on the land. Specific terms and conditions are included in the approved lease. A surface lease does not convey ownership to the minerals on or under the leased property. Those minerals require a mineral lease (refer to Section 4.3). The first step to acquire a surface lease is to submit an application for use of Crown land to the GNWT Department of Lands. Activities taking place on Crown land in the Mackenzie Valley require applications that are made to the Mackenzie Valley Land and Water Board. The Mackenzie Valley, as defined in the *Mackenzie Valley Resource Management Act*, includes all of the Northwest Territories, with the exception of the Inuvialuit Settlement Region and the Wood Buffalo National Park. The QPs have confirmed that De Beers has filed applications for the surface leases, however, there is no guarantee that surface leases will be issued in a timely manner or will contain terms and conditions that are acceptable to the GKJV partners. The leases applied for are depicted in Figure 4-3.

The Gahcho Kué Mine is located on territorial land and surface leases are held with the Government of Northwest Territories (GNWT). A surface lease gives the occupant the exclusive right to use the land for a specified period of time and allows the lessee to make improvements on the land. Specific terms and conditions are included in the approved lease. A surface lease does not convey ownership to the minerals on or under the leased property. Those minerals require a mineral lease (refer to Section 4.3). The QPs have confirmed that surface leases listed in Table 4-2 and depicted in Figure 4-3 are valid and held by De Beers for the Gahcho Kué Mine.

Table 4-2: Surface Lease Summary

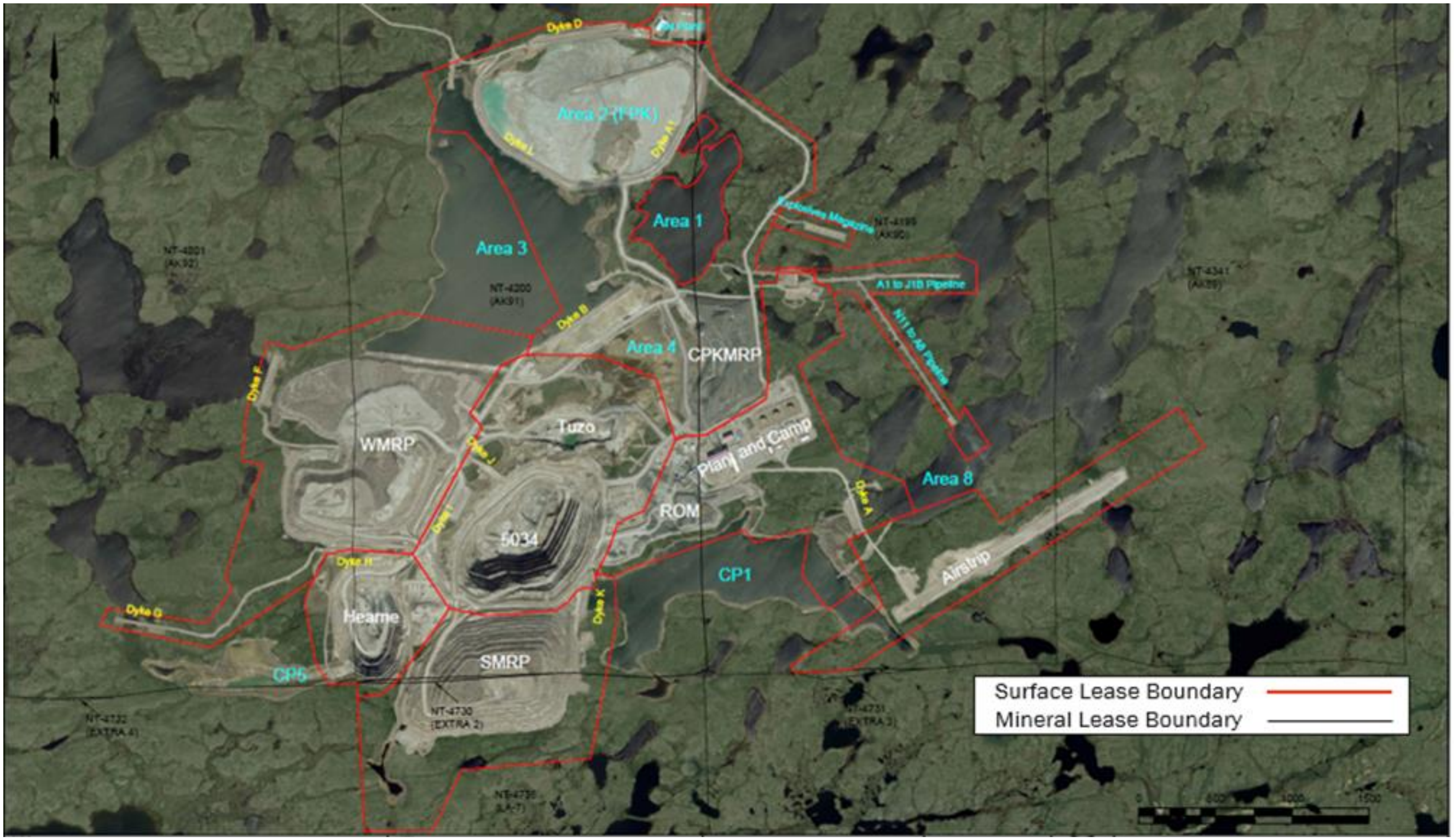
Licence/Permit Type & Number	Expiry Date	Ownership
Surface Industrial Lease No. 075N06002 (75N/6-2-2)	August 31, 2035	De Beers Canada Inc (100%) on behalf of GKJV
Surface Industrial Lease No. 075N06003 (75N/6-3-2)	August 31, 2035	
Surface Industrial Lease No. 075N06005 (75N/6-5-2)	August 31, 2035	
Surface Industrial Lease No. 075N06007 (75N/6-7-2)	August 31, 2035	
Surface Industrial Lease No. 075N06008 (75N/6-8-2)	August 31, 2035	

Source: https://www.maps.geomatics.gov.nt.ca/HTML5Viewer_Prod/index.html?viewer=ATLAS (accessed Sep 19, 2024)

The Gahcho Kué Mine is currently operated with the authorization of a land use permits and Water Licences. The QPs have confirmed that valid licences are currently in place for Gahcho Kué Mine and have verified that a Class A Land Use Permit (permit number MV2021D0009, expiry date June 28, 2026) and a Type A Water Licence (permit number MV2005L2-0015, expiry date September 30, 2028) are current valid and in place.

A detailed list of permits, licences and authorizations for the GK Mine is provided in Section 20.

Figure 4-3: Land Use Lease Map



Source: De Beers (2021)

4.6 Water Rights

The Water Licence for the Gahcho Kué Diamond Mine (Type "A" Water Licence (MV2005L2-0015)) sets out several conditions with respect to alteration, diversion or otherwise use of water for the purpose of mining and milling. The Water Licence was issued in 2014 has a term of 16 years and will require a renewal on or before September 30, 2028. The Gahcho Kué Diamond Mine is subject to the *Fisheries Act* and Fisheries Authorization No: 03-HCAA-CA6-00057.1 (Fisheries Authorization) issued by Fisheries and Oceans Canada. The Fisheries Authorization outlines the offset, monitoring and reporting requirements for the impact to fish and fish habitats as the result of the mine construction and operation. The onsite offset project includes the construction of fish habitat features within the re-established Kennady Lake at mine closure. The offsite offset project is achieved through the Redknife River Bridge (RKRB) project. The RKRB project will modify the current Redknife River Ridge on Mackenzie Highway (NWT No. 1) to allow for the passage of fish to the upstream reaches of the Redknife River. The RKRB project has the ability to provide more fish than the permanent loss from the mining activities.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, & INFRASTRUCTURE

5.1 Site Access

Primary personnel access to the site is via the all-weather gravel airstrip which is routinely serviced by RJ85 and 737 Jet aircraft from Yellowknife and the southern provinces, including regularly scheduled personnel flights from Calgary International Airport. Additionally, the airstrip is serviced by smaller turbo-prop aircraft from Yellowknife, transporting the Northern based workforce and smaller freight shipments.

A winter road connects Yellowknife to the Ekati and Diavik mines during February and March each year and is used to deliver materials and supplies to the mine (Figure 1-1). The road is operated under a Licence of Occupation by the winter road JV Partners that includes Burgundy Diamond Mines Ltd., Rio Tinto and De Beers. The road passes within 70 km of the Gahcho Kué site, at Mackay Lake. A 120 km winter road spur has been established from Mackay Lake to the Mine site and has been open continuously each year since 2013 to support construction and on-going mine operations.

5.2 Climate

The mine is located 230 km south of the Arctic Circle where the climate is extreme and semi-arid. Operations occur year-round with temperatures ranging from -45°C to +25°C over a twelve-month period. Winter typically lasts from November to May and has average temperatures of -20°C. Summer temperatures prevail from early July to mid-September, and average roughly 18°C. Freeze-up and ice break-up occur in November and June, respectively.

The average annual precipitation for Gahcho Kué is 347 mm, with 50% received as snow. A frequency analysis of total precipitation at Kennady Lake, concluded that the 100-year wet event had an annual precipitation of 550 mm (De Beers, 2021). The predominant wind direction is from the east.

The climatic data for the Mine site over the past ten years is summarized in Table 5-1.

Table 5-1: Key Climate Data

Description	Units	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Maximum Recorded Temperature	ºC	28	25	28	28	27	26	28	28	27	28
Minimum Recorded Temperature	ºC	-40	-40	-39	-42	-43	-42	-42	-42	-40	-39
Mean Temperature	ºC	-1	-14	-8	-4	-7	-8	-7	-6	-8	-3
Maximum Average Barometric Pressure	kPa	105	105	105	105	105	105	105	105	105	98
Minimum Average Barometric Pressure	kPa	99	98	99	99	98	99	99	99	99	95
Average Barometric Pressure	kPa	101	102	102	102	102	102	102	102	102	97
Maximum Wind Speed	km/h	95	89	85	72	87	76	57	73	69	41
Average Prevailing Wind Speed	km/h	15	14	12	18	17	17	16	15	18	16
Prevailing Wind Direction: Winter		NE	S,SSE	E, ESE	SSW	N,NW	SSW	SSW	NE, E	NW, W	SSE
Prevailing Wind Direction: Summer		NE, S	N,SE	SE,SSE	SSE	E,NW	SSE	S,SSE	ESE	NE, E	S

Notes:

1 Data calculated from 1 hr data at the Gahcho Kué Mine weather station.
2 Summer is defined as May 1 to September 30. Winter is defined as October 1 to April 30.
3 In 2011, weather data w as available only for the w inter months.
4 The Gahcho Kué weather station did not collect weather data from 2012 to November 2014.
5 The weather data for 2014 is from the nearby Bob Camp.
6 2023 data up to October 10, 2023.
7 2023 Barometric data from April 28, 2023, to July 4, 2023.

Source: De Beers (2023)

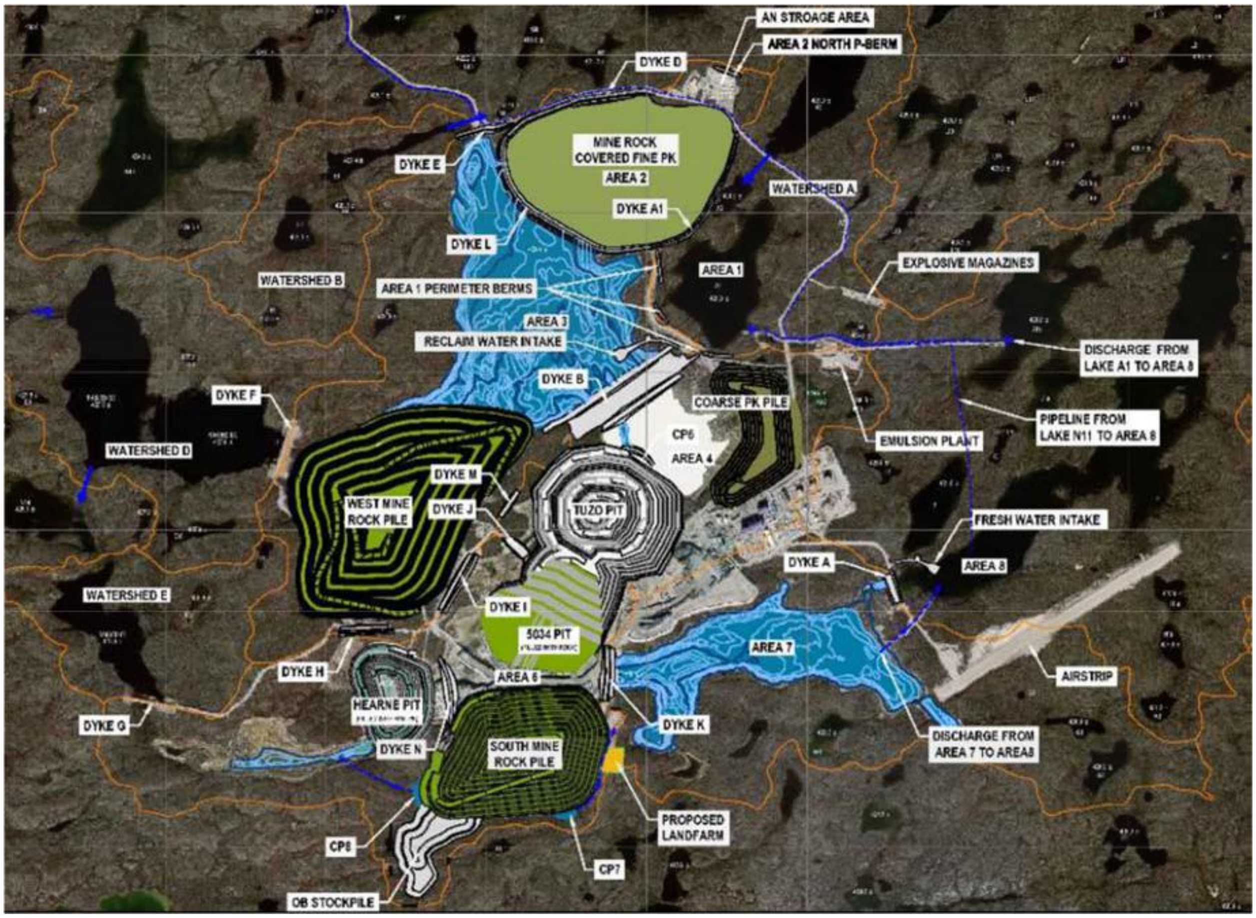
5.3 Local Resources & Infrastructure

The Gahcho Kué site (Figure 5-1) is typical of many northern Canadian mining operations that lack local and regional infrastructure such as permanent road access, navigable shipping routes/ ports, and external utilities. Therefore, the Gahcho Kué site requires extensive infrastructure to sustain operations, including power generation, sewage and water treatment, personnel accommodation, storage facilities for materials delivered on the limited annual winter ice road, and an aerodrome to provide year-round cargo, food and passenger aircraft access.

The design approach for the Gahcho Kué site infrastructure incorporates features common to other northern mining developments:

- All weather gravel airstrip;
- Full camp accommodation and administrative complex capable of housing 300+ employees year-round;
- 50+ Million liters of diesel fuel storage capable of storing a full year's operational requirement;
- Standalone diesel fired power station;
- Water and sewage treatment facility;
- Enclosed processing plant and maintenance shop;
- Arctic corridor system connecting accommodations with plant, shop and power stations;
- Warehouses;
- Explosives manufacturing and storage facilities;
- Waste heat recycling systems;
- Heat traced and where applicable, enclosed piping and electrical infrastructure to endure harsh winter climates; and
- Microwave communications tower supplemented by satellite.

Figure 5-1: Gahcho Kué Site Map



Source: De Beers (2019)

5.4 Physiography

The site lies on the edge of the continuous permafrost zone in an area known as the barren lands. The surface is characterised as heath / tundra, with occasional knolls, bedrock outcrops, and localised surface depressions interspersed with lakes. A thin discontinuous cover of organic and mineral soil overlies primarily bedrock, which, occurs typically within a few metres of surface. Some small stands of stunted spruce are found in the area. There are myriad lakes in the area. Kennady Lake, under which the kimberlite pipes lie, is a local headwater lake with a minimal catchment area.

6 HISTORY

In the early 1990s, Gahcho Kué, previously known as the Kennady Lake Project, was staked by MPD. Canamera Geological Ltd. was contracted to conduct the original exploration, which led to the discovery of the 5034 kimberlite pipe in January 1995. A brief history of the Mine (to commercial production) is presented below.

6.1 Historical Timeline

- 1990s: Exploration by Canamera Geological on behalf of Mountain Province Mining Inc. and partners. 5034 pipe discovered;
- 1997: Letter agreement entered into with Monopros Limited (now De Beers Canada) in terms of which they could earn a 51% interest in the Project. Hearne, Tuzo and Telsa pipes discovered in mid-1997;
- 1998: Mini bulk sampling of 5034, Hearne, Tuzo and Telsa by Monopros. Preliminary scoping study by MRDI (now AMEC Foster Wheeler);
- 1999: Bulk sampling by large diameter drilling of Hearne, Tuzo and Telsa by Monopros;
- 2000: De Beers Canada conducts Desktop Study;
- 2001: Further resource drilling of 5034, Hearne and Tuzo by De Beers Canada;
- 2002: Joint Venture agreement entered into between Mountain Province (44.1%), De Beers Canada (51%) and Camphor Ventures (4.9%);
- 2003: Technical (pre-feasibility) Study commences;
- 2004 / 2005: Further hydrological, geotechnical design and resource drilling. Engineering and environmental baseline studies completed;
- 2005: Completion of the C$25M Technical Study. Commencement of the C$38.5M advanced Exploration Program and filing of applications for construction and operating permits;
- 2006: Mountain Province acquires controlling interest in Camphor Ventures. Independent valuation of Gahcho Kué diamonds completed. Tuzo and 5034 North Lobe delineation and geotechnical drilling completed;
- 2007: Mountain Province acquires 100% of Camphor Ventures thereby increasing interest in Gahcho Kué to 49%. Core drilling program completed at Tuzo to upgrade the Tuzo

resource. Infill drilling program completed at the 5034 kimberlite. 5034 North Lobe bulk sampling program completed;

- 2008: Tuzo bulk sampling program completed. 25.14 carat gem quality diamond recovered from Tuzo drill program. Updated independent valuation completed; actual price per carat of bulk sample diamonds recovered increases 63% to $135 per carat;
- 2009: Updated mineral resource statement completed. Revised and restated joint venture agreement concluded between Mountain Province and De Beers;
- 2010: Feasibility Study completed. Updated Environmental Impact Statement (EIS) under preparation for filing in December;
- 2011: Environmental impact review process commences. Updated independent diamond valuation completed ($185/carat). Feasibility study approved by GKJV. Decision to build approved by GKJV partners. Tuzo Deep resource drilling commences;
- 2012: Environmental impact review continues. GKJV approves initial C$32M capital budget for early mobilization. Updated independent valuation completed ($186 per carat). Public hearings under environmental impact review concluded;
- 2013: Environmental impact review public record closes. Supplies to mine site commence on winter road;
- 2013: Mackenzie Valley Environmental Impact Review Board recommends project;
- 2013: October 22nd – Ministerial approval received for the Gahcho Kué Project;
- 2013: November 29th – Pioneer Land Use Permit Issued;
- 2014: Winter Road installed, and 634 truckloads of material delivered to site;
- 2014: Revised and Updated Gahcho Kué 2014 Feasibility Study Report completed;
- 2014: Class A Land Use Permit and Type A Water Licence issued for the construction and operation of the mine;
- 2015: Structural steel erection and mechanical assembly commences for major facilities. Airstrip expansion for 737 aircraft complete;
- 2016: March 23rd – First ore exposure 5034 Pit; June 20th – First ore through processing plant;
- 2016: September 20th – Official opening of Gahcho Kué Mine; and
- 2017: March 2nd – Gahcho Kué announces commercial production.

6.2 Historical Ownership

- Early 1990s – 2002: Mountain Province Mining Inc. and Partners;
- 2002 – 2007: Mountain Province Diamonds (44.1%), De Beers Group of Companies (51%) and Camphor Ventures (4.9%); and
- 2007 – Present: Mountain Province Diamonds (49%), De Beers Group of Companies (51%).

6.3 Historical Mineral Resource and Reserve Estimations

The previous basis for mineral resource estimate for the property was compiled by AMEC (2009) and Mineral Services (2013).

Re-estimation of grades in two lobes of 5034 and depletion modelling have been conducted by De Beers since production commenced at the 5034 pit in 2016. As well, updates in grade estimates have been a result of the additional drilling to extend the resource to the Southwest Corridor in 2018 and the Northeast Extension and Hearne Corridor in 2019. Exploration drilling conducted in 2019 focused on finding kimberlite east of the Tuzo kimberlite, resulting in the discovery of the Wilson kimberlite. In addition, the Tuzo resource has been updated based on reinterpretation of the internal geology conducted in 2020.

Information from these reports is included in Sections 7 through 15 below. In the opinion of the QPs, the current mineral resource estimates are adequate to support this Technical Report on the Gahcho Kué Mine.

6.4 Historical Mining

Prior to quarrying of the 5034 pit commencing in 2013, and subsequent mining in 2015 onward, no previous mining activity had been conducted on the Gahcho Kué property.

7 GEOLOGICAL SETTING & MINERALIZATION

7.1 Geological Setting

7.1.1 Regional Geology

The Gahcho Kué kimberlite cluster occurs in the southeast Slave Craton, a small Achaean nucleus within the North American Craton (Figure 7-1), which contains rocks ranging in age from 4.05 Ga to 2.55 Ga (Bleeker et al., 1999). The oldest rocks of the Slave Craton are small remnants of felsic granites and gneisses (2.8 Ga to 3.2 Ga; Beals, 1994), and the Acasta gneisses (3.6 to 4.0 Ga; Bowring et al., 1989) located in the western part of the craton. Several supracrustal series (metasedimentary rocks with less common metavolcanic rocks) crop out in the central and eastern parts of the Slave Craton, forming the Yellowknife Supergroup (circa 2.7 Ga). The Yellowknife Supergroup is intruded by an extensive series of pre- to post-deformational (2.69 to 2.60 Ga) felsic plutons.

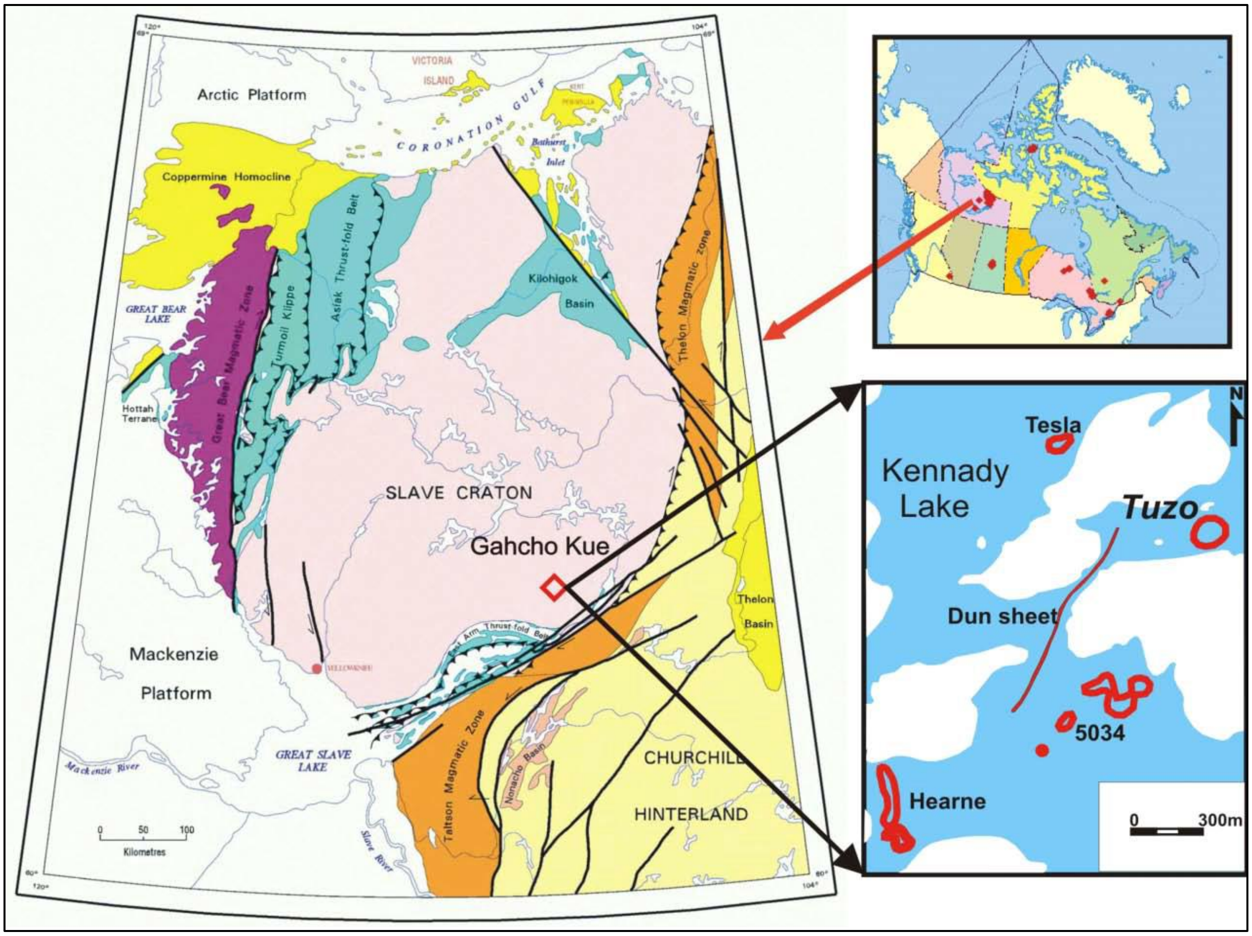
The eastern portions of the Slave Craton are Late Achaean island-arc complexes (magmatic arcs and accretionary prisms) accreted to the margin of an older continental fragment to the west (Griffin et al., 1999).

Several swarms of Early-Mid Proterozoic (2.0-2.3 Ga; see LeCheminant et al., 1995) basaltic dykes occur in the Lac de Gras area, with a suggested source for the Lac de Gras dyke swarm beneath the Kilohigok Basin.

The north–northwest trending Mackenzie dyke swarm (1.27 Ga; LeCheminant and Heaman, 1989) extends over 2,300 km from a focus, interpreted as a plume head (Fahrig, 1987), and located west of Victoria Island.

At the mine site, the dominant lithologies are felsic granites and gneisses that have been subjected to diabase dyke emplacement as described above. The Gahcho Kué kimberlite intrusions are Cambrian age (530-540 Ma), some of the oldest economic kimberlites in Canada. Other kimberlites that have been dated with a similar age in the region include Snap Lake, Kelvin, and Faraday 2.

Figure 7-1: Regional Setting, Gahcho Kué Kimberlite Cluster



Note:

Red diamonds on the plan map of Canada represent a number of other kimberlite occurrences in Canada. The inset shows the relationship between the individual kimberlites that comprise the Gahcho Kué cluster, the individual red outlines of the 5034 kimberlite have subsequently been determined as connected through drilling; Dun = Dunn in this Report.

Source: Caro and Kopylova (2004)

7.1.2 Mine Geology

7.1.2.1 Basement

Basement lithologies mapped from limited areas of outcrop in a 16 km^2 area surrounding the Gahcho Kué cluster include granite, granitic gneiss, granodiorite, diorite, and gabbro that have undergone regional amphibolite-facies metamorphism retrograded to greenschist facies (Baker, 1998). The most common rock type, granite, varies from a medium-coarse grained, equigranular facies to highly foliated granitic gneiss.

Two distinct northwest- to north–northwest-trending, linear, magnetic highs in the eastern quadrant are interpreted to be part of the regional Mackenzie diabase dyke swarm. Two east–northeast-trending diabase dykes were identified from linear aerial photo-features occurring south of Kennady Lake and proximal to the Tesla kimberlite. These dykes can be traced in outcrop but do not have strong magnetic expression. They are considered to belong to the Mallay dyke swarm by Baker (1998) and to predate the interpreted Mackenzie dykes.

7.1.2.2 Quaternary

The Gahcho Kué area was glaciated repeatedly during the Pleistocene epoch, most recently by the Laurentian ice sheet. The Laurentian ice sheet began to recede 18,000 years ago, and the ice front retreated past the Gahcho Kué area between 9,000 and 9,500 years ago (Dyke and Prest, 1987). However, there is no stratigraphic evidence that represents deposits from previous glaciations; the Quaternary geology of the Gahcho Kué area appears to be related only to the last glacial event, the Wisconsinian glaciation (Hardy, 1997). Glacial-related sedimentation is quite thin, with only scarce patches of till blanket and large glaciofluvial outwash fans (Hardy, 1997).

Till veneer, till blanket, and outwash sediments characterize the Quaternary deposits in the Gahcho Kué area. The areas of till blanket contain abundant mud boils and no bedrock exposure. Areas of level sands and reworked till are classified as outwash sediments. Till veneer and till blanket cover most of the area except for small areas to the east of the mine; outwash sediments occur west of Kennady Lake. Outwash sediments and a large esker that extends along a portion of the southern edge of the mapped area dominate the area south of Kennady Lake.

The stratigraphic record overlying the till is younger than the last glaciation and is composed mainly of pro-glacial sediments (glaciofluvial and glaciolacustrine deposits). As the Gahcho Kué area occurs over a relatively flat terrain, many swamps, ponds and peat deposits are present (Hardy, 1997). Both the ice advance directions and the glaciofluvial and esker flows were dominantly from east to west.

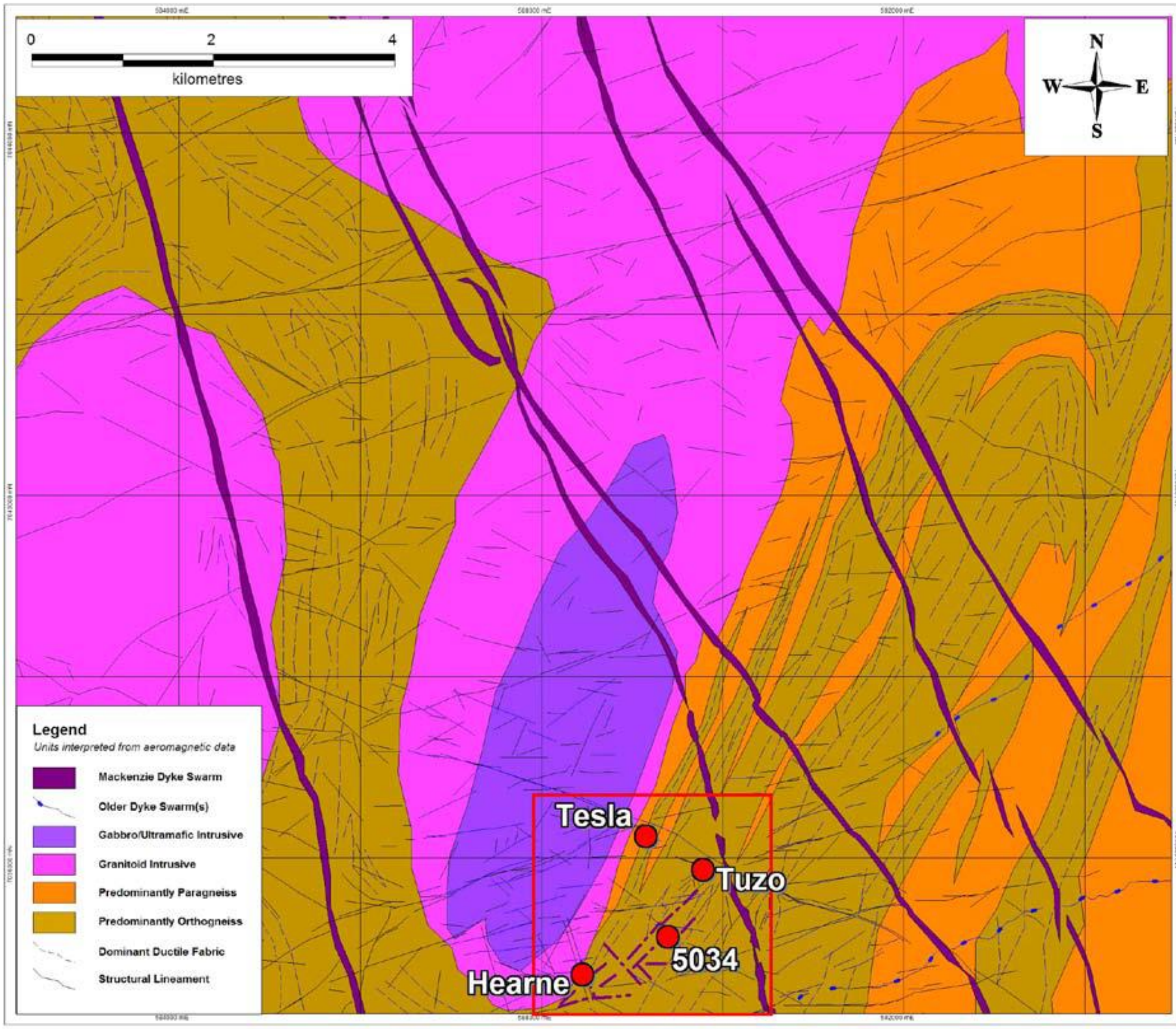
7.1.2.3 Structural Setting

Granite–gneiss terrane intruded by a series of dykes (Figure 7-2) characterizes the Gahcho Kué area. There are several granitic intrusions surrounded predominantly by gneisses; the gneisses display a clear structural pattern of being metamorphosed by the granitic intrusions. Along the eastern edge of the area, a marked geological boundary is interpreted to represent contact with meta-sediments that extend eastwards. The central portion is a structurally complex zone of folding and possible shears.

There are several groups of demagnetised lineaments with weak, negative magnetic expression; these demagnetised lineaments could be dykes or demagnetised country rock resulting from dyke intrusion or faulting. They are grouped as:

- A regular, pervasive northeast-trending set;
- A regular, pervasive northwest-trending set; or
- An east–west-trending set in the south of the area.

Figure 7-2: Litho-structural Interpretation of the Gahcho Kué Area



Note:

Major first order structures trend northeast–southwest and are parallel to the circa 2.0 Ga to 1.8 Ga Great Slave Shear Zone; second order (often younger) structures trend primarily northwest–southeast.

Source: SRK (2004)

The 5034, Hearne, Tuzo, and Tesla kimberlites all occur at the eastern edge of an interpreted south-closing fold-nose that has developed a radial fold-nose cleavage. The apparent south-closing fold is interpreted to open to the north–northeast; the dip direction is not known. The core of the fold is composed of granite and minor granodiorite. Northeast-trending axial-planar foliation associated with the fold is developed in gneiss.

7.1.2.4 Country Rocks

The country rock contacts along the margins of the pipes are generally variable and can be grouped broadly into five main types:

- Sharp contact zones;
- Brecciated contact zones;
- Chemically-altered contact zones;
- Chemically-altered and disaggregated contact zones; and
- Thermally metamorphosed contact zones.

7.1.2.4.1 Sharp Contact Zones

Present between kimberlite and country rock, these are characterised by minimal broken zones or altered country rock surrounding the kimberlite. Sharp contacts are associated with all textural varieties of kimberlite present within the pipes.

7.1.2.4.2 Brecciated Contact Zones

Brecciated contact zones are characterised by fractured country rocks that do not contain any kimberlitic component. The country rock fragments range between 0.5 mm to 15 cm. The brecciated zones can be subdivided into two main groups: massive, brecciated zones (MBZ) and pulverised brecciated zones (PBZ).

MBZ consists of coarser fragments typically greater than 2 cm in diameter. MBZ are often associated with pre-existing joints with fragments in these zones typically loose and not cemented. The distribution and extent of these broken zones is highly variable and generally increases in intensity as the pipe contact is approached. However, at a distance from the pipe contact, there are contacts without brecciated zones directly adjacent to contacts with brecciated zones. This apparent haphazard distribution of the brecciated zones may be related to the interconnectedness of the country rock joints. The angular country rock fragments can often be fitted back together, with no evidence of rounding by movement.

PBZ consists of a mixture of larger particles 2 cm to 15 cm in diameter with a matrix composed of finely pulverised country rock < 2 mm in diameter. These breccias are typically cemented. The PBZ can be either clast or matrix supported, and there is often evidence of particle rounding. The proportion of fine pulverised material present within these zones is highly variable. Often the larger fragments contain smooth edges and show slight alteration or bleaching along the margins. The PBZ zones are not as common as the MBZ. These breccia zones are interpreted to represent pre-conditioning processes of the country rock in the early emplacement of the kimberlite. Once the kimberlite has breached the surface, it is thought that the subsequent explosion and violent degassing of the magma column likely incorporated the weak brecciated zones into the pipe. Large xenoliths of this material are present within the Tuzo Pipe.

7.1.2.4.3 Chemically-Altered Contact Zones

These are characterised by typically minor (< 5 cm) zones of alteration along joint surfaces without significant disaggregation. The intensity of this alteration is variable; however, this decreases in intensity with increasing distance from the pipe contact. Chemically altered contact zones are most often developed in contacts of country rock with hypabyssal kimberlite. These zones can also contain brecciated country rock. The altered zones typically are pale yellow in contrast to the pink granitoids and may be porous due to the chemical removal of quartz.

7.1.2.4.4 Chemically-Altered & Disaggregated Contact Zones

These zones are considerably weaker and more extensive than the chemically altered contact zones. They are characterised by extensive chemical alteration that, in extreme cases, can result in extensive disaggregation of the country rock. These zones are also characterised by minor brecciation, but without evidence of transport or cementation. This type of contact zone is most extensively developed in areas around hypabyssal kimberlite and, in particular, within the granite cap over the 5034 North Lobe. The most extensive zones are present over the thicker intersections of kimberlite. The altered zones consist of a brittle core that appears bleached (particularly along joints). Feldspars are typically orange in appearance and in thin section appear sericitised. Chlorite and dolomite can be present along joint surfaces.

7.1.2.4.5 Thermally Metamorphosed Contact Zones

These zones are only associated with hot contacts related to HK and are typically less than 50 cm wide. Weakest adjacent to the kimberlite, the country rock displays less reaction to the intruding kimberlite with increasing distance from the contact. The country rock within these zones is often grey or white in colour in contrast to the typically pink granitoids and can contain significant green serpentine as well as carbonate veins.

7.1.2.5 Country Rock Xenoliths

Country rock xenoliths within the Gahcho Kué kimberlite pipes are dominated by granitoid xenoliths with lesser diabase, gneiss, and rare volcanic rocks. No sedimentary-rock xenoliths are present. Xenolith contents of the kimberlites are variable, particularly in the TK units. For logging purposes, the following terms are used to describe the kimberlite texture:

- K = kimberlite:
    - B = breccia; and
    - m = micro- breccia.

The following terms are used in indicated xenolith abundance:

- K: < 15% (not a breccia)
- KB: 15% to 50% (breccia)
- KBB: 50% to 75% (breccia)
- KBBB: >75% (breccia)
- KmB: >15% xenoliths 5 mm to 10 mm (microbreccia)

7.1.2.6 Gahcho Kué Kimberlites

The Gahcho Kué kimberlite cluster occurs in the southeast Slave Craton, a small Archaean nucleus within the North American Craton ranging in age from 4.05 Ga to 2.55 Ga. The most common rock type, granite, varies from equigranular medium-coarse grained granite to highly foliated granitic gneiss. Granitic pegmatite dykes intrude all of the identified country rock types.

The main Gahcho Kué kimberlite cluster comprises five kimberlite bodies: Hearne, 5034, Tuzo, Wilson and Tesla (Figure 7-3). Hearne, most of the 5034 Pipe, and the Tuzo, Wilson and Tesla occur under Kennady Lake, which has an average depth of 8 m. The Tesla kimberlite body is not part of the current declared resources or reserves and is excluded from further discussion. The 5034 kimberlite was Rb–Sr isotopically dated (phlogopite) as Middle Cambrian (542.2±2.6 Ma: Hetman et al. 2003). Ages for the Tuzo, Tesla and Hearne kimberlites, based on Ar^{40}–Ar^{39} dating on phlogopite, are 542±6, 531±6 and 534±11 Ma, respectively.

Gahcho Kué kimberlites are overlain by varying thickness of glacial boulder outwash and lake sediments (averaging 10 metres (m) thick), and have a combined water and sediment cover as much as 25 m thick.

Drill information suggests that Tuzo and 5034 are located on an inclined feeder dyke system, the GK dyke, which dips roughly 25 degrees NNE. Hearne is located on another feeder dyke system which dips to the North. The feeder dyke systems were repeatedly active during emplacement, resulting in a complex facies architecture of the kimberlite bodies rising from the feeder dykes (Kurszlakis and Rodriguez, 2024).

In the near-surface, the kimberlite bodies are steep-sided comprising of several texturally distinct phases of kimberlite in which the textures vary from hypabyssal kimberlite (HK) to diatreme facies tuffisitic kimberlite (TK). TK displays many diagnostic features including abundant unaltered country rock xenoliths, pelletal lapilli, serpentinized olivine and a matrix composed of microlitic phlogopite and serpentine without carbonate. HK contains common fresh olivine set in a groundmass composed of monticellite, phlogopite, perovskite, serpentine and carbonate. A number of texturally hybrid kimberlite rocks display a textural gradation from TK to HK, which is characterized by a decrease in the proportion of pelletal lapilli and country rock xenoliths and an increase in groundmass crystallinity, proportion of fresh olivine and the degree of xenolith digestion (Hetman et al., 2004).

Texturally there are four main kimberlite types recognised:

Tuffisitic Kimberlite (TK)

Tuffisitic kimberlite (TK) is olive green to light brown in colour. These rocks are relatively soft and can swell on contact with water due to the presence of hygroscopic clay minerals. The TK rocks are characterized by clast to matrix-supported volcaniclastic textures with variable country rock dilution.

Transitional Tuffisitic Kimberlite (TKt)

Rocks classified as transitional tuffisitic kimberlite (TKt) are broadly similar to TK but are more competent and darker in colour. The TKt rocks have a uniform olivine distribution but the breccia matrix displays inhomogeneous textures dominated by volcaniclastic textures.

Transitional Hypabyssal Kimberlite (HKt)

Rocks classified as transitional hypabyssal kimberlite (HKt) are broadly similar to HK rocks but are characterized by inhomogeneous textures dominated by a magmatic groundmass with less common patches of volcaniclastic-looking kimberlite. These rocks are dark in colour and competent.

Hypabyssal Kimberlite (HK)

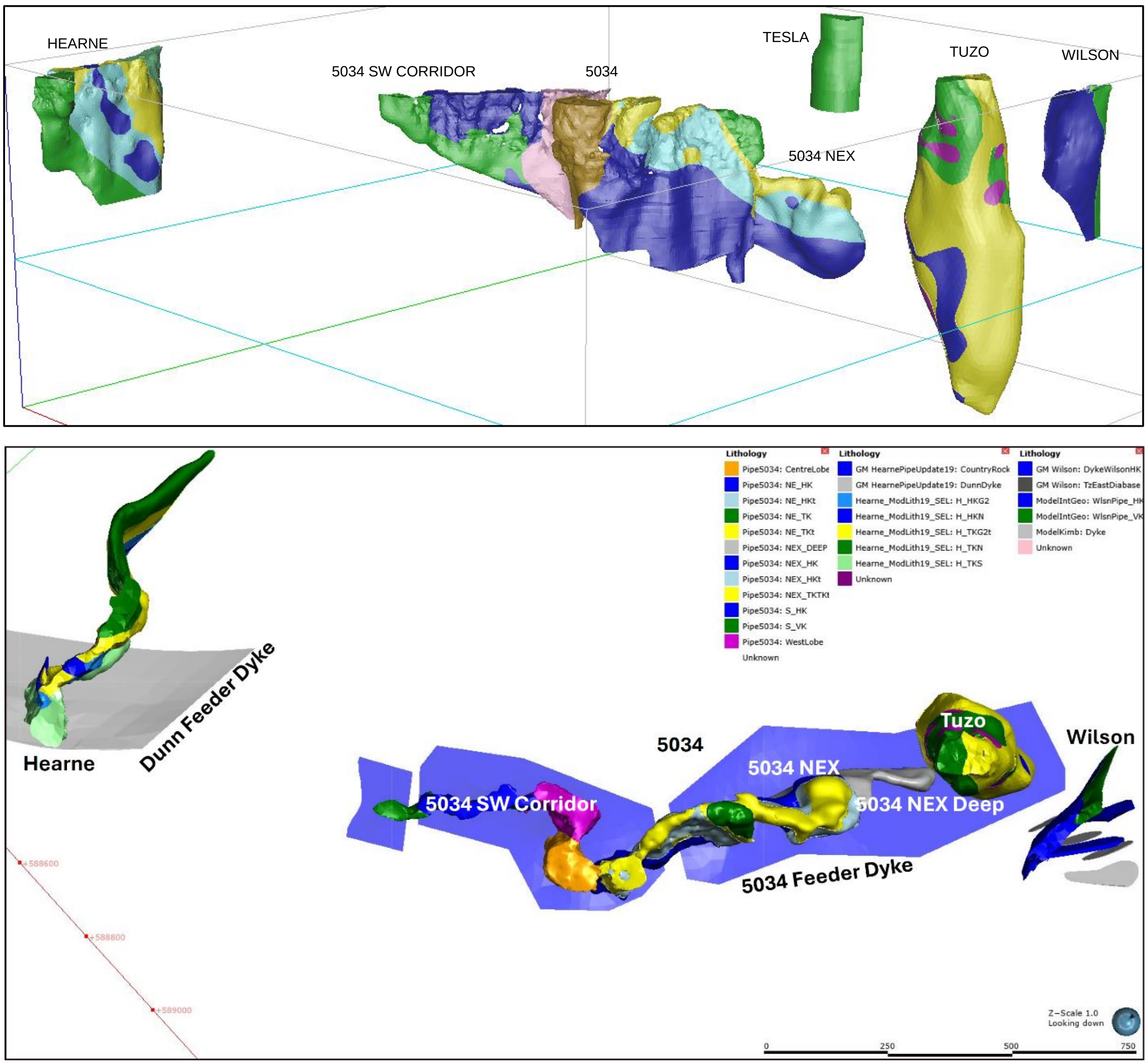
Hypabyssal kimberlite (HK) is mainly fresh, competent, black to dark green, and characterized by uniform macrocrystic textures. The rocks are composed of two generations of olivine consisting of anhedral, medium- grained, often fresh, olivine macrocrysts, and smaller subhedral to euhedral olivine microcrysts. The well-crystallised groundmass consists of monticellite, phlogopite, spinel, primary carbonate, serpentine, and perovskite. Mantle xenocrysts, in addition to olivine macrocrysts, include rare garnet and clinopyroxene.

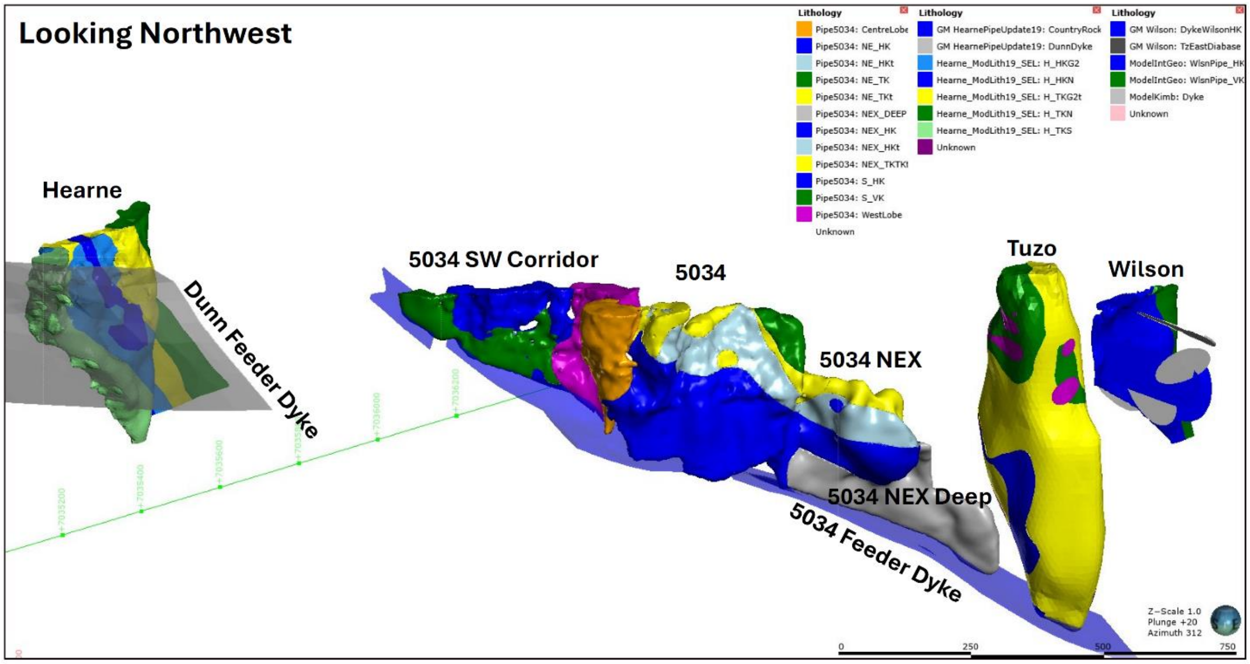
7.1.2.7 Hearne Kimberlite

Scott Smith (2005) modelled two bodies to comprise the Hearne kimberlite, Hearne South and Hearne North. Further analysis and additional drilling in 2018 have shown that these bodies connect as lobes of a single kimberlite body (Fulop & Pell, 2019). The Hearne kimberlite has smooth, steep-sided walls, and covers an area of about 1.5 ha. At surface, Hearne measures a maximum of 380 m x 90 m from north to south with its largest width occurring at the south end in the former south pipe. Average widths are approximately 40 m at surface. The South Lobe is dominantly TK, and the North Lobe consists of approximately equal amounts of HK and TK. The present pipe geological model for Hearne South extends to 125 masl. Additional drilling has proven that Hearne South does not extend beyond this depth; Its limited depth is most likely controlled by the steep N-dipping feeder Dunn Dyke system.

The most recent work shows that Hearne consists of two coherent (HKG2 and HKN), two volcaniclastic (TKS and TKN), and one transitional volcaniclastic (TKG2t) facies that dip parallel to the feeder dyke. The kimberlite facies arrangement appears different from 5034 in that the heavier coherent kimberlites are not at the base but in the center of the body. At Hearne, the TKS at the base is believed to be the oldest phase that was emplaced against the feeder dyke. After the TKS cooled to a solid, additional kimberlite magma was emplaced over the TKS and resulted in the emplacement of the HKG2, TKG2t, and TKN rock units. A short time later the last kimberlite batch intruded into the cooling HKG2 magma which resulted in the emplacement of the HKN (Figure 7-4; Kurzslaukis and Rodriguez, 2024).

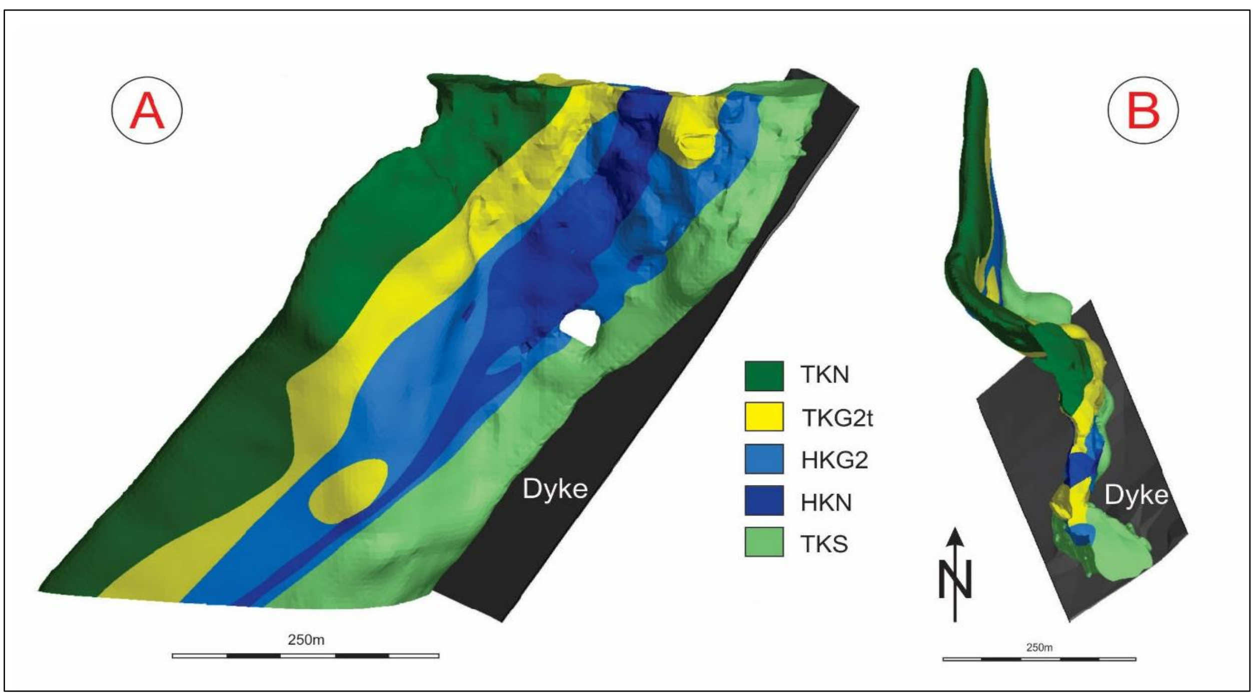
Figure 7-3: 3D View of Gahcho Kué Kimberlite Bodies in Plan View (top) and Looking Northwest (bottom)





Source: De Beers Central (2024)

Figure 7-4: Hearne Kimberlite Geologic Shape

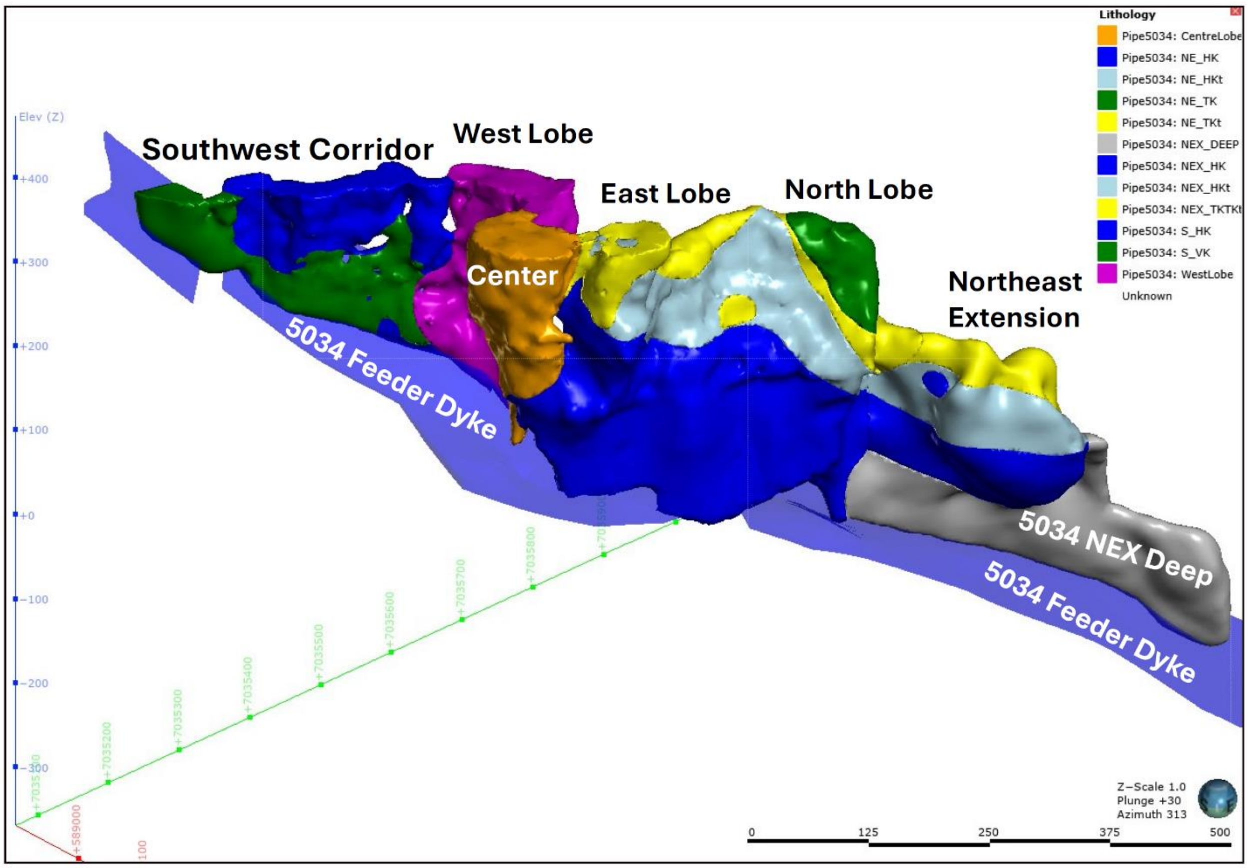


Source: Kurszlaukis and Rodriguez (2024)

7.1.2.8 5034 Kimberlite

The 5034 kimberlite is a highly irregularly-shaped pipe and dyke complex that is comparable to kimberlite root zones elsewhere and has a surface area of approximately 2.1 ha (see Figure 7-5). The 5034 kimberlite is modelled as a semi-continuous occurrence composed of discrete kimberlite bodies, of which some are modelled as joined at the sub-crop to form one main continuous body. At their base the 5034 kimberlite bodies, or lobes, are fed from the NNE dipping GK feeder dyke (Kurszlaukis et al., 2019).

Figure 7-5: 3D View of 5034 Looking Northwest



Source: De Beers Central (2024)

The four modelled kimberlite bodies included in the resource are referred to as follows:

- 5034 Southwest Corridor;
- 5034 “Main” West Lobe;

- 5034 “Main” Centre Lobe; and
- 5034 “Main” North-East Lobe (i.e., East Lobe, North Lobe, and North Lobe Extension).

The main part of the 5034 occurrence that reaches the surface occurs under Kennady Lake and can be divided into four lobes: West, Southwest Corridor, Centre and East. These lobes are joined at the surface but separate at depth. The Centre and East lobes are modelled separately at shallow depth but rejoin at greater depth producing what appears to be a window of granite within the kimberlite. The East and North Lobes are joined at depth, geologically continuous, and are collectively referred to as the Northeast Lobe, now including the Northeast Extension (‘NEX’; Kurszlaukis et al., 2019), but excluding NEX deep, which has insufficient drilling to be modelled for inclusion (Figure 7-5).

The surface measurements of the four lobes of the 5034 Main Pipe are approximately as follows:

- West Lobe: 125 m x 45 m
- Centre Lobe: 125 m x 80 m
- North-East Lobe: 85 m x 65 m
- Southwest Corridor: 330 m x 40 m

Delineation drilling completed in 2017-2018 allowed for the classification and modelling of the Southwest Corridor extending southwest from the West Lobe. The 5034 Southwest Corridor extends as deep as 305 masl where there is information defining the cut-off depth. With this additional information, the former Southwest Corridor and South Pipe have been incorporated into the 5034 Southwest Corridor body. The Southwest Corridor geological model is summarised in Kurszlaukis (2018).

The northern portion of the 5034 North-East Lobe, the North Lobe, does not reach present day land surface and occurs under 60 m to 90 m of granite rock cap. Approximately half of this northern lobe lies below the lakebed and half is beneath the main peninsula. The North Lobe measures 240 m in length and varies from approximately 20 to 50 m wide, averaging 30 m. The Northeast Extension also does not reach present day surface and occurs under a depth of 210 m to 230 m of granite cap rock. The Extension measures approximately 220 m in length and varies from 40 m to 120 m in width. This addition to the Northeast body surrounds and replaces the former “North Pipe” and was identified and classified in recent delineation drilling directed from the north of the 5034 body. A combined internal geology model is developed for the 5034 Northeast Lobes on the basis of petrography, mineralogy, and whole rock chemistry (Kurzslaukis, 2018). The model confirmed that there are four major kimberlite types in the North Lobe, three of which extend into the northeast extension.

In general, a systematic arrangement of lithofacies types was recognized in 5034. HK textured kimberlites are typically located in deeper levels of the pipe, followed by transitional textured kimberlites (HKt and TKt) until fragmental textured kimberlites (TK) dominate in the uppermost portions of the kimberlite body. TK and TKt textured kimberlite are present in the West and Northeast Lobes, as well as in Northeast Extension. The Centre Lobe is dominated by HK.

Four main textural kimberlite units are identified in the 5034 North Lobe: TK, TKt, HKt, and HK (Kryvoshlyk, 2006). The spatial distribution of those rock varieties creates an antiformal structure located approximately in the geographical centre of the lobe. The most important rock types in the North Lobe are HK and HKt, which are present in the deeper levels of the lobe. Center Lobe is comprised of HK and comprises the saddle of the antiform. TK and TKt rock types are mainly present in the shallow levels of the flanks in the North and South of the antiform and are overlying the HK units. This facies arrangement is consistent at the greater depth of the Northeast Extension. A selected suite of kimberlite rocks from the East and North Lobe was examined, and the samples were concluded to show well developed petrological similarities suggesting a close genetic relationship of the two lobes (Kryvoshlyk, 2007).

Kryvoshlyk (2008) showed that the Northeast Lobe and likely West Lobe have an overall layered internal structure, comprising gradual kimberlite textural changes from coherent HK at depth to fragmental TK at shallower levels. Transitional rocks in between these end members of coherent or fragmental rocks are either called HKt or TKt, depending on their dominant textural association. In contrast to the layered structure of most lobes, the Centre Lobe is composed exclusively of HK, which could not be subdivided with available petrological or geochemical data despite the variable diamond counts in this lobe. The HK found in all four lobes is geochemically and petrologically similar, suggesting a close genetic relationship between all four lobes.

Kryvoshlyk (2008) concluded that the quality of the geological model is strongly dependent on the data density (drill core and reference samples) and on sample collection protocols. The highest data density is present in the Northeast Lobe, which results in a relatively high-confidence model. The West and Centre Lobes have a lower data density (both with respect to drill density and number of reference samples) and rather poor sample control (difficulties connecting micro-diamond and heavy mineral samples with geology). It is therefore not possible to produce a high-confidence geological model for West Lobe or to explain the diamond data variability in Centre Lobe without additional data. The Centre Lobe is composed almost entirely of HK, and minor HKt. With the dataset available in 2008, the HK rock types cannot be separated in 3D space; thus, Kryvoshlyk (2008) recommended that they be modelled as one unit. The West Lobe is, to some extent, similar to the Northeast Lobe in that the sequence HK–HKt–TKt is present, and these rocks are petrologically similar. The West Lobe is divided into three petrological units, a Main Lower HK unit, a Main Upper HKt unit, and a Secondary Upper TKt unit; however, significant uncertainty is associated with the contacts between those units, and the resource model considers the pipe to be undifferentiated kimberlite.

7.1.2.9 Tuzo Kimberlite

The overall surface area of the Tuzo body is roughly 1.2 ha, which was covered by as much as 25 m of water and glacial overburden. The kimberlite body comprises various fragmental and coherent kimberlites and contains large inclusions of the surrounding granitic country of several tens of metres in size. The 2007 drill program results improved the definition of the shape of the kimberlite body, which is unusual as it widens towards depth from 125 m in diameter near the surface to roughly 225 m diameter at 300 m depth (Figure 7-6). Based on new drilling in 2006-2007 with related petrographical, geochemical and micro-diamond data, Seghedi and Maicher (2007) developed a 3D internal geological model using Geovia Gems© software. The 2007 study improved the previous internal geology model (Hetman et al., 2004) and included reassessment of the diamond distribution. Above 120.92 masl Tuzo was defined as Indicated, with an Inferred Resource below.

Additional drilling in 2011-2012 extended the kimberlite to -143.08 masl and a new model to incorporate the deeper portions was developed. The drill program improved the definition of the pipe shape, which showed a slight constriction at depth and a country rock breccia on the western to southwestern portion of the pipe.

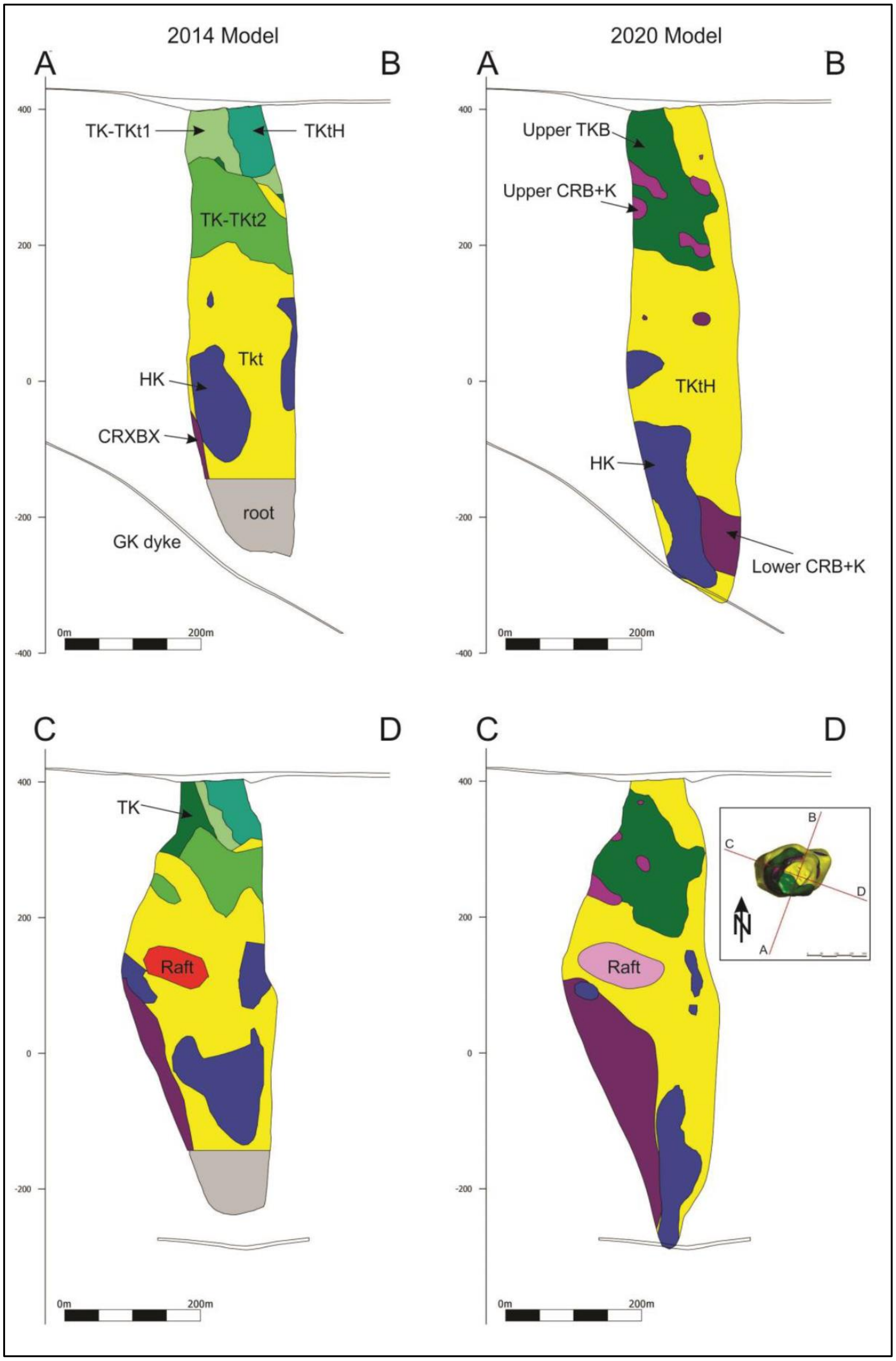
A Tuzo Root drilling campaign completed in 2014 extended the kimberlite to -275.08 masl, but this undifferentiated modelled volume was not modelled as a mineral resource. In the resulting model that included the undifferentiated volume, (the 2014 model), above 60.92 masl Tuzo was classified as an inferred resource, but the upper indicated resource did not change.

In 2021 the internal geology of Tuzo kimberlite was updated through a re-examination of all available data including core, polished slabs, historical core and slab images, thin sections, mineral chemistry, whole rock data, and diamond results. Nearly all drill core from 2002 to the present was re-logged, and groundmass spinel was re-analyzed as part of the modelling exercise. Emphasis was placed on the indicated portion of the kimberlite, but the entire drill-defined body of Tuzo was considered in the resulting model.

Based on other recent logging projects (5034, SWC, NEX, Hearne, Wilson) supported by recent academic studies, transitional textures deemed important in the previous model were reconsidered as less relevant compared to primary features such as coherent/fragmental rock types, juvenile pyroclasts or other characteristic magmatic particles, as well as country rock xenolith size, shape, abundance and alteration. Post-emplacement alteration features affecting the kimberlite such as clay minerals, pelletal lapilli, carbonate or microlithic minerals were of minor importance. The re-logging of core intersecting all depth levels of the pipe by the same person affirmed the application of this petrographic approach throughout all of Tuzo (Kurzslaukis and Pell, 2021).

In addition to the robust definition of rock types through petrography and groundmass spinel chemistry, diamond data (mostly surface textures and grade curves) were used to support the new rock classification. As a result, the 2021 model has simplified Tuzo from eight major 3D domains with 16 subdivisions to five major 3D domains with eight subdivisions (Figure 7-6).

Figure 7-6: Tuzo Kimberlite Geologic Model Comparison



Source: De Beers (2023)

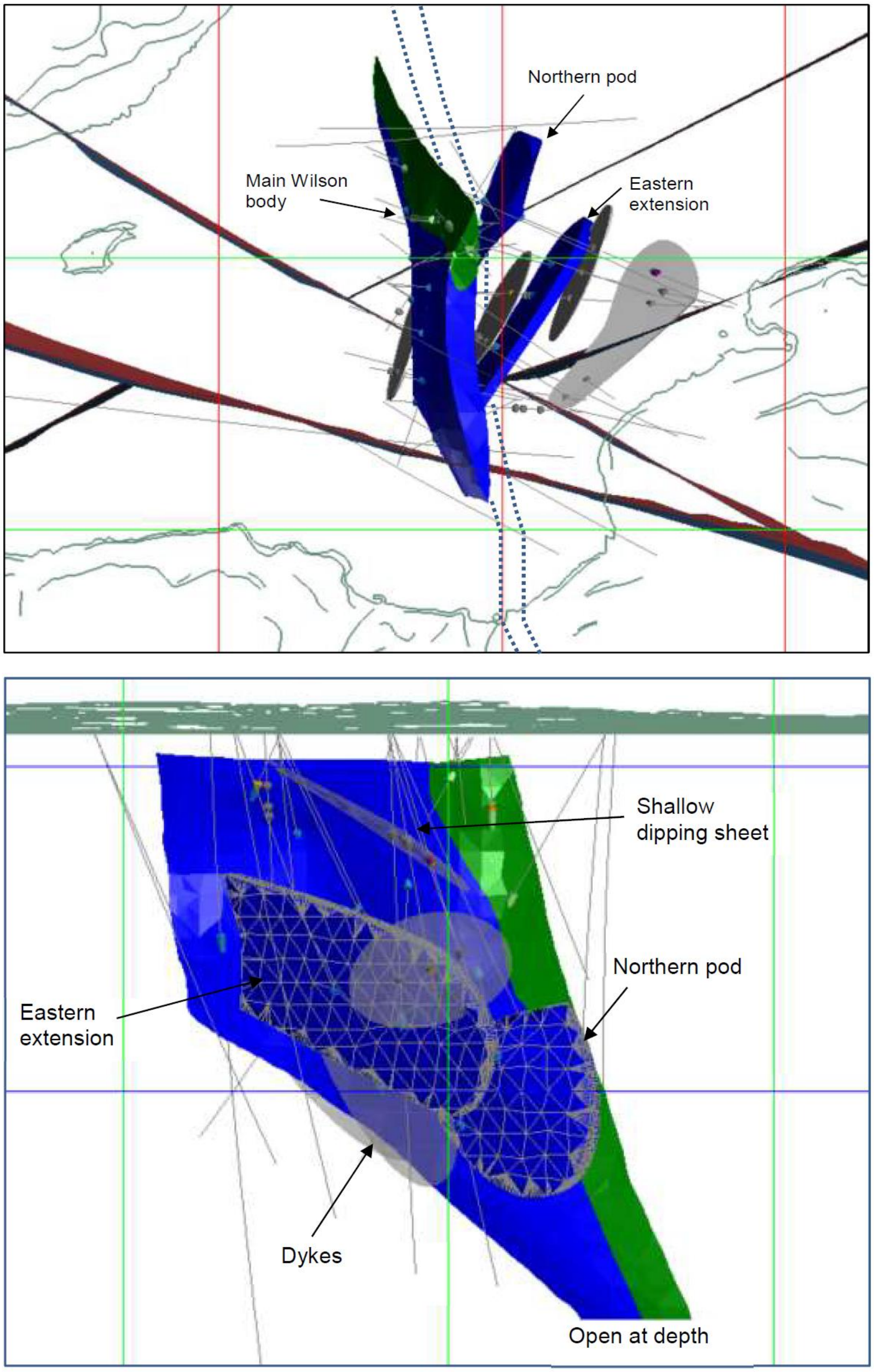
7.1.2.10 Wilson Kimberlite

In 2019 the Wilson kimberlite was discovered during drill testing of geophysical and geological anomalies near the Tuzo kimberlite. In contrast to the Curie kimberlite, drilling at Wilson shows no connection to Tuzo, and as such Wilson is a distinct, new kimberlite discovery. Located roughly 200 m east of Tuzo, the Wilson kimberlite lies within the open pit mine plan for the Tuzo pit. It is a roughly north-south trending, north-northeast plunging series of interconnecting sheets.

On the basis of core logging, petrography, and groundmass spinel and whole rock chemistry, Wilson comprises two 3D model codes, TK located mainly in the northern part of the body and HK/HKt located in the south and at depth in the north. These are shown in green and blue respectively in Figure 7-7.

The TK model code comprises a single petrographic unit. The HK/HKt model code combines coherent and coherent transitional rocks and the difficult to classify HK/HKts. All the HK/HKt rocks have similar groundmass spinel signatures and micro-diamond stone densities, with subtle differences in whole rock geochemistry that are attributed to differences in dilution, and so are grouped into a single model code. There are also a number of smaller dykes in the immediate vicinity of Wilson. The best interpretation is that these are two sets of kimberlite sheets, one oriented NNE striking, roughly parallel to the extension and the second defining a shallow north dipping sheet system. The spinel chemistry of these dykes suggests that they may be feeders to the main body (Kurzslaukis and Pell, 2020).

Figure 7-7: Wilson Kimberlite Geologic Shape in Plan View (Top) and Looking West (Bottom)



Source: De Beers (2023)

7.1.2.11 Satellite Kimberlite Bodies within the GK Property

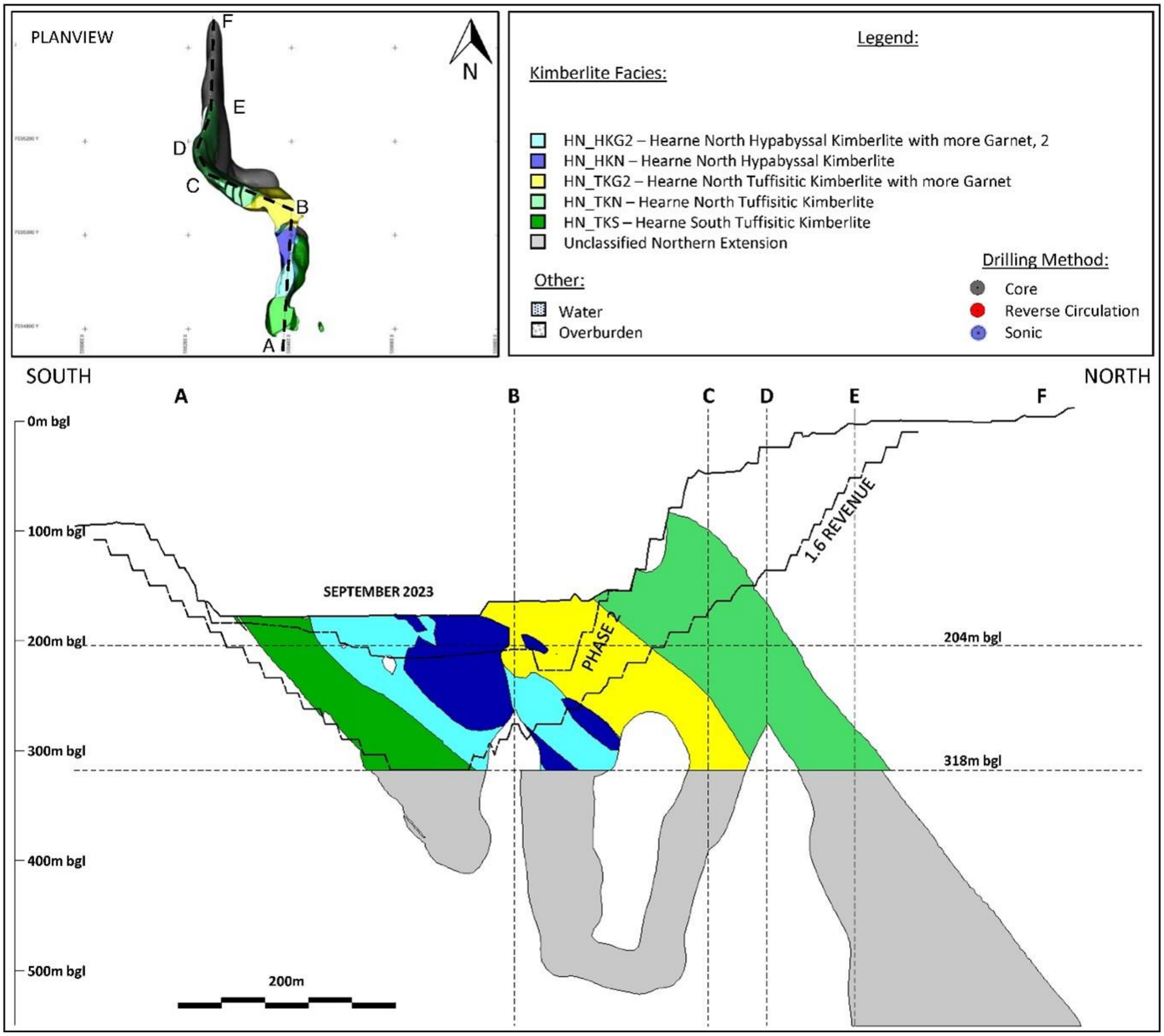
Several small kimberlite occurrences were intersected during exploration drilling programs following up geophysical and diamond indicator anomalies. These bodies include Tesla, Curie, and Wallace occurrences as well as the Dunn Sheet, and GK dyke that comprise part of the Gahcho Kué kimberlite field. None of the satellite kimberlites is currently considered sufficiently economic, but on-lease Resource Exploration Program is underway. The nearest contemporaneous kimberlites outside of the Gahcho Kué lease area are the Kennady North kimberlites (Kelvin, Faraday 2, Faraday 1-3, NA, SA, KS, KE) that are located 8-13 km to the northeast, and the Doyle kimberlite 10km to the southwest.

7.2 Mineralization

7.2.1 Hearne Kimberlite

Five different phases of TK were recognised within the Hearne kimberlite (Figure 7-8).

Figure 7-8: Hearne Kimberlite Cross Section



Source: De Beers (2023)

Each TK phase can be geologically distinguished using features such as varying proportions of garnets, magmaclasts, autolith-like bodies, xenoliths, and clay minerals. The names of the different TK units are based primarily on their location within the two pipes. The green–brown, partly altered TK units are easily distinguished from the fresh black HK in both core and reverse circulation drill cuttings. Different phases of kimberlite within the black HK units are very difficult to distinguish from one another. The total HK was sub-divided into three units based primarily on macro-diamond grade with some support from geological differences and spatial positions in the pipe.

7.2.1.1 Hearne North

A major TK unit in Hearne North is the HNTKN that occupies the upper northern part of the main pipe. This TK contains <15% of granite xenoliths but does contain autolith-like bodies and magmaclasts. The TK grades with depth into transitional textures resembling HK. The transition zone was termed HNTKNt. This unit was geologically modelled using the upper limit of HK and the lower limit of TK textures logged in both core and reverse circulation holes. Below the transition zone is HK, some of which appears to be of the same phase of kimberlite as the overlying TK and TKt. The internal contact separating the TKN and TKNt is sub-parallel to the contact with the underlying HK. Both internal contacts dip at approximately 50° to the north. The HK immediately underlying the HNTKNt is thought to be part of the same phase and was termed HNHKN. This interpretation is supported by the similarity in macro-diamond grade between the textural varieties of kimberlite. These three textural units (HNTKN, HNTKNt, and HNHKN) represent the transition from the diatreme to the root zone within a single phase of kimberlite.

Two smaller TK units, which are unrelated to those discussed above, are present in Hearne North. HNTKG2 is located near the surface at the southern end of the pipe. This unit also seems to grade into an underlying HK, termed HNHKG2. One of the main features that distinguish the two smaller TK units from the main HNTKN is the presence of fresh garnets in the former. The HNTKSD is interpreted to be a completely different, and probably earlier, phase of kimberlite partly because the HNTKN and HNTKG2 exhibit gradational changes to HK at shallower levels in the pipe than the HNTKSD.

Although the HNHKN, discussed above, is interpreted as being related to the HNTKN, other HK units appear to be unrelated. Geologically, the latter HK units seem to contain more garnets than the HNHKN. There also appears to be sharper contacts rather than gradational changes between these and the overlying TK units. The volumetrically largest of these HK units, HNHKG, is correlated with the low- grade areas within the HK found in many of the large diameter holes. The HNHKG2 is nearly indistinguishable from the HNHKG in core.

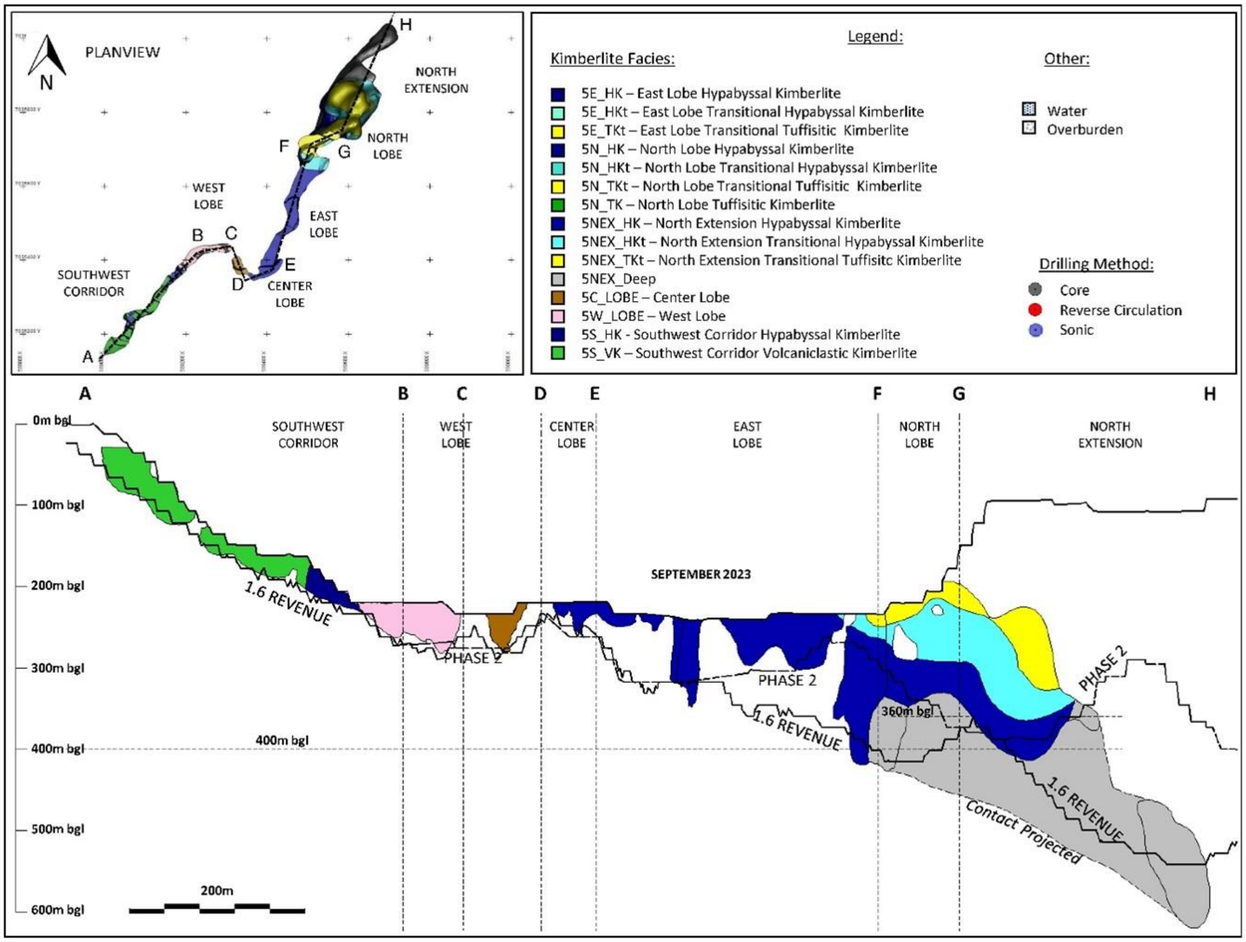
7.2.1.2 Hearne South

Based on geological interpretations from limited core drilling, this part of Hearne appears to be composed mainly of uniform diatreme-facies TK, containing as much as 50% granite xenoliths. The TK unit was named HSTKM. A separate transitional HK/TK was proposed and named HSTKW. The macro-diamond grades in both of the above units are similar.

7.2.2 5034 Kimberlite

Kryvoshlyk (2008) reported that the diamond distribution in the 5034 North Lobe appears to follow the layered character of the kimberlite overall (refer to Figure 7-9). Maximum concentrations of diamonds appear often located close to the “Orange Marker” — a specific petrological layer generally found between the two units comprising the majority of the pipe infill: the upper HKt and the lower HK units. Diamond count maxima in the East Lobe appear to create a lens-like body at a depth of 85 to 131 m towards its flanks and 107 to 211 m in its centre.

Figure 7-9: 5034 Kimberlite Cross Section



Source: De Beers (2023)

Limited diamond and geological data for the Centre and West Lobes did not allow Kryvoshlyk (2008) to produce high-confidence 3D models. The Centre Lobe macro-diamond distribution is highly variable and poorly supported by petrology, even between relatively closely spaced drill holes. The Centre Lobe micro-diamond distribution showed the presence of high-grade zones, which did not correlate with petrological changes. The resource model considers the West Lobe to be undifferentiated kimberlite and the Centre Lobe to be composed entirely of undifferentiated HK.

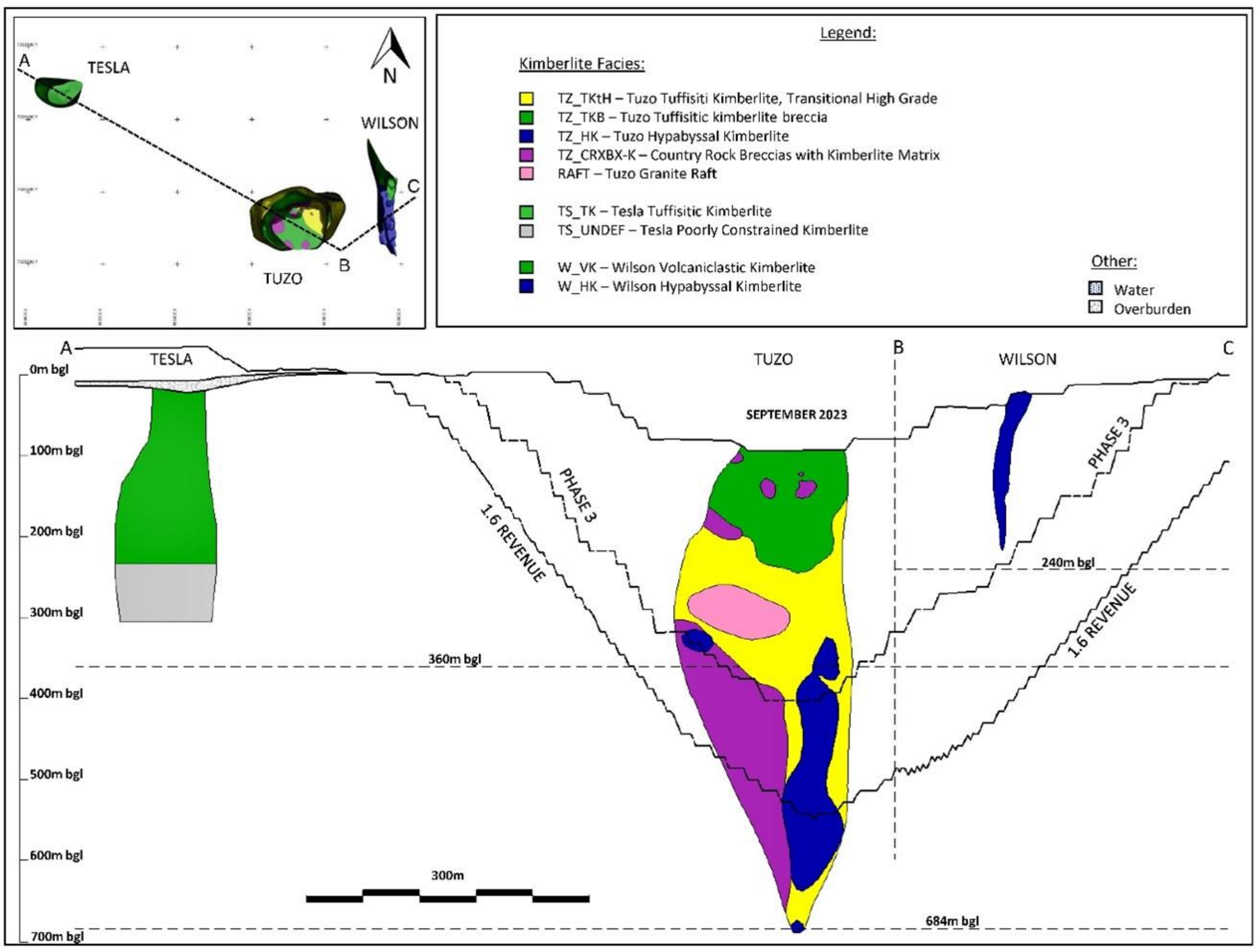
Kryvoshlyk (2008) concluded that the generation of the transitional kimberlite rock textures at 5034 is still poorly understood. If the transitional rock types are in-situ differentiates of HK magma, Kryvoshlyk (2008) maintains that they should play only a minor role in understanding the diamond distribution.

7.2.3 Tuzo Kimberlite

Tuzo country rock breccias with kimberlite (CRB + K) have the lowest average diamond counts, whereas the Upper TKB, Upper/Mixed TKB and Mixed TKB all have high diamond contents, with the Mixed TKB being the highest. The Lower TKt and the TKtH units have similar average stone densities that are double those from Upper TKB-Upper/Mixed TKB-Mixed TKB lithologies. The highest stone counts were found in the High Cr spinel HK group.

Stone density and size frequency distributions in the Lower TKt and TKtH units are very similar. Their petrographic and ground mass spinel similarities also support their being grouped into a single Resource Model Unit. The Upper TKB, Upper/Mixed TKB and Mixed TKB rocks have fairly similar stone densities, and the petrographic differences are sufficiently subtle they are also combined into a single Resource Model Unit (Kurzslaukis and Pell, 2021).

Figure 7-10: Tuzo and Wilson Kimberlite Cross Section



Source: De Beers (2023)

7.2.4 Wilson Kimberlite

On the basis of 273 - 8 kg micro-diamond samples, diamond counts are roughly double in the HK modelled unit relative to the TK unit. This was further confirmed from the results of two focused mining samples collected from Wilson in 2021.

7.2.5 Other Kimberlites

Several small kimberlite occurrences were intersected during exploration drilling programs following up geophysical and diamond indicator anomalies. These bodies include the Tesla Pipe and Dunn Sheet that comprise part of the Gahcho Kué kimberlite cluster. The Kennady North kimberlite discoveries are located about 8 km northeast of the Gahcho Kué kimberlite cluster and are outside the present mining lease.

A ground gravity survey completed in 2018 spanning the Southwest Corridor area and stretching north to the Tuzo and Tesla pipes identified an exploration target in the corridor between Tuzo and Tesla. Drilling commenced at the Curie target in 2018 and identified a kimberlite body that is likely a blowout of the Dunn kimberlite sheet. Additional drilling in 2019 did not add any significant volume to Curie.

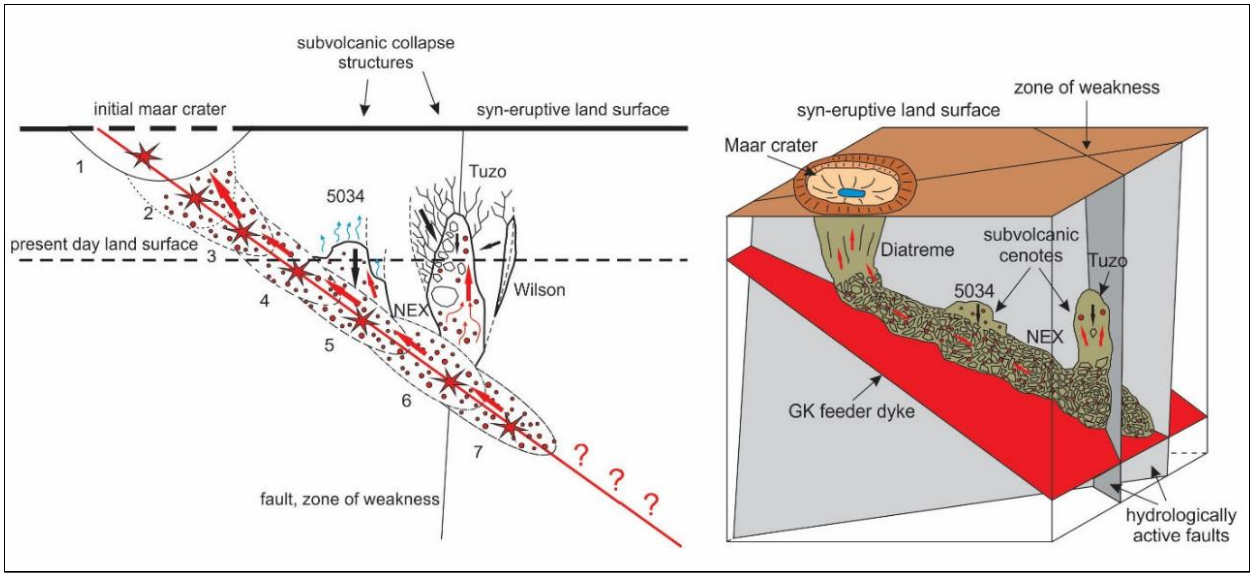
8 DEPOSIT TYPES

The composite geological model of the Gahcho Kué kimberlite pipes (from Hetman et al., 2003) is shown in Figure 8-1. The shape and infill of the individual kimberlite pipes is similar to that of the kimberlites located in the Kimberley area of South Africa, and to the 630 Ma Renard kimberlites in Quebec (Fitzgerald, 2009). They differ considerably from many other Canadian kimberlites that have been mined or developed, such as those found at Fort à la Corne, Attawapiskat, and Lac de Gras (Field and Scott Smith, 1999). The Fort à la Corne pipes are preserved as craters with kimberlite pyroclastic aprons around the craters. The Lac de Gras pipes are preserved as diatremes below the surficial craters and above the root zones. Gahcho Kué pipes preserve minor pyroclastic kimberlite attributed to the diatreme, but largely contain root-zone lithologies.

Kryvoshlyk (2019) reported that a tube-like kimberlite body (Northeast-corridor, NEX) in between 5034 and Tuzo was drilled in a resource extension program in the winter of 2018/19. 5034 can be interpreted as a conventional kimberlite root zone that consists of several elongated lobes located on a NE-inclined feeder dyke system. NEX appears to be connected with 5034 North Lobe (NL), which itself is connected to 5034 East Lobe (EL). NEX is characterized by the presence of hypabyssal kimberlite (HK) at its base and transitional fragmental rocks (TKt) under the roof. Sandwiched in between coherent and fragmental rocks are transitional coherent rocks, which show altered/soft boundaries to the underlying HK and altered/hard boundaries to the TKt above. The emplacement of fragmental rocks is interpreted to predate the intrusion of the coherent rocks. The emplacement of fragmental kimberlite in tube-like, blind bodies appears to be related to the inclined feeder dyke system from which 5034 and likely Tuzo emerged. It appears that the identification of pre-existing structures and the stress field at the time of emplacement contributes significantly to the understanding of the emplacement mechanism and the positioning of the kimberlite bodies. This interpretation is a regional phenomenon with similar emplacement geometries observed for the Kelvin and Faraday kimberlites located 8-13 km to the northeast (Barnett et al., 2017).

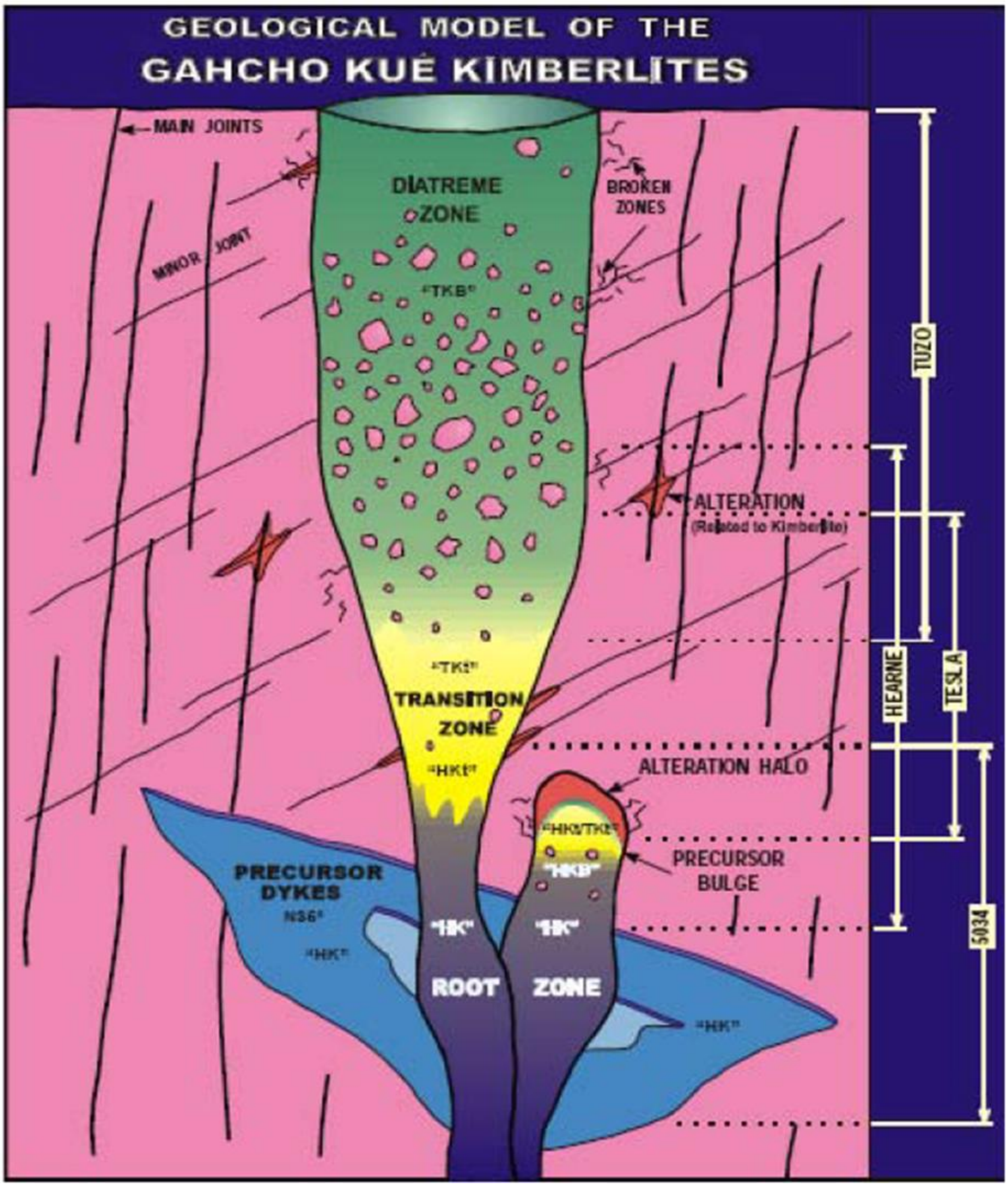
The emplacement process has been further developed by Kurzslaukis and Rodriguez (2024) with emphasis on feeder dykes being the parental magma source for the larger volume bodies (Figure 8-1). The model assumes that each large volume body breached the surface in a volcanic explosion, forming a maar. The explosive front migrated down from the surface down along the feeder dyke, following hydrologically active faults. Gravitational wall rock collapse is responsible for the steps in the roof of 5034, whereas the vertical shape of Tuzo is caused by exploitation of country rock that was weakened by pre-existing crosscutting faults (Figure 8-1).Hetman et al (2003) interpreted the Gahcho Kué pipes to be similar root-to-diatreme transition zones to those described by Clement (1982) and Clement and Reid (1989). According to Hetman et al (2003), the variations in pipe morphologies and infill displayed by the Gahcho Kué kimberlites reflect varying depths of diatreme development and are not a function of different depths of erosion for each of the pipes according to Hetman et al (2003). Estimates of at least 500 m of erosion has taken place since emplacement of the Gahcho Kué kimberlites (Flowers et al. 2006; Figure 8-2).

Figure 8-1: Emplacement Model for the Gahcho Kué Kimberlites



Source: Kurszlaukis and Rodriguez (2024)

Figure 8-2: Composite Geological Model of Eroded Gahcho Kué Kimberlites



Sources: Hetman et al (2003)

9 EXPLORATION

The information contained in this section is based on the "Gahcho Kué Kimberlite Project NI 43-101 Technical Report" (JDS 2022) and has been updated to include descriptions of ongoing exploration work during operations. While the information is historical in nature, it has been incorporated in the Exploration section for continuity and completeness. Exploration at Gahcho Kué has included drilling, surveying, geological mapping, geophysical surveying, geochemical sampling and hydrological / geotechnical work.

All recent exploration was implemented directly by De Beers or was subcontracted out under direct supervision of De Beers as the Mine operator with input from MPD. Exploration / delineation drilling, as well as all related sampling and processing of drill material, is described in Section 10.

9.1 Survey Control

The Gahcho Kué site was surveyed by GKJV in 1998 using the North American Datum (NAD) 27 coordinate system, with elevations recorded in height above ellipsoid (HAE).[1]

All pre-2004 drill hole collars at Gahcho Kué were surveyed using UTM NAD 27 Zone 12. Pre-existing survey control for the Base Station at the site references a First Order Geodetic Monument located near the Hoarfrost River. This coordinate was established by global positioning system (GPS) survey between 1996 and 1998 by GKJV. A surface grid tied to the UTM system was established during 1997– 1998 over each of the kimberlites. Several permanent reference points within each grid were established on land using a Trimble 4800 series GPS. These reference points were re-occupied by GKJV in 1998 with a Trimble 4800 series GPS, which confirmed the accuracy of the original locations (Hodgkinson, 1998).

From November 2003 to January 2004, GPS determination of Canadian Active Control Network (CACS) NAD 83 coordinate values with elevations in masl for the GPS Base Station at Gahcho Kué was performed using two independent methods (Hewlko, 2004). The first method involved the processing of CACS data and satellite data collected at the base station in November 2003 and January 2004. The resulting six positions agreed within 3 cm in the northing direction, 3 cm in the easting direction, and 9 cm in elevation. The second method of determining the position of the base station was to process the data observed at the base station by single point positioning. The six positions agreed within 0.6 m in the Northing, 1.1 m in the Easting and 1.7 m in Elevation. All drill hole collars surveyed for the 2004 – 2008 drilling programs utilised real time GPS CACS NAD 83 coordinates.

Unless otherwise noted, drawings and coordinates are based on the NAD83 coordinate system, with elevations in masl, and are referenced to the CACS benchmark located in Yellowknife.

[1] The term above mean sea level (amsl) refers to the elevation (on the ground) or altitude (in the air) of any object, relative to the average sea level datum. As sea level can vary depending on air pressure, an alternative can be used, where base height measurements are referenced to an ellipsoid of the entire earth. HAE is the base reference for all GPS instruments.

The following shifts were used to convert the NAD27 HAE system to CACS NAD83 masl:

- Northing Shift: +221.619 m
- Easting Shift: - 64.211 m
- Elevation Shift: +16.917 m

The shifts noted above differ from the theoretical shift between NAD27 HAE and NAD83 masl because of the enhanced survey accuracy achieved by tying into a CACS benchmark.

9.2 Geological Mapping

A 16 km^2 area near Kennady Lake was selected in 1998 for geological mapping (at 1:2000 scale) using air photo bases. The purpose of the mapping project was to document the bedrock geology, structural geology, surficial geology (overburden type), and drainage patterns within the area.

A re-mapping of glacial geology and reinterpretation of KIM dispersal over Gahcho Kué and the surrounding Kennady North Project was conducted by MPD in 2019 and 2020, and the results were shared with De Beers in 2022 (Palmer, 2021).

9.3 Exploration Programs

No work was conducted by the original claim staking company, Inukshuk. Exploration between 1992 and 1996 was conducted by Canamera Geological Ltd. (Canamera) as the operator for MPD and its predecessor company Mountain Province Mining. From 1997 forward, the GKJV was responsible for all exploration, with De Beers as “mine operator” performing the work as directed via regular meetings and workshops with MPD.

9.3.1 Canamera Geological Ltd.

Canamera acted as the operator for Mountain Province Mining Inc. prior to the joint venture with Monopros Ltd. (De Beers). Exploration work carried out by Canamera between 1992 and 1994 comprised 993 reconnaissance and follow-up glacial-till samples and an airborne electromagnetic survey. From 1995 to 1996, additional exploration included bedrock and surficial mapping, airborne and ground geophysical surveys, and collection of 1,842 sediment samples.

In January 1995, the AK5034 (5034) kimberlite was discovered, and from 1995 to 1996 it was tested by 68 exploration and delineation NQ core holes. In addition to the core drilling, geotechnical investigations of the kimberlite were completed by Canamera and Bruce Geotechnical Consultants Inc. Data collected included core recovery, rock quality designation, lithological information and alteration, point load tests, preliminary determinations of rock mass types, strength ratings, and preliminary determinations of slope requirements for rock mass types.

In 1996, a 105.2 t mini-bulk sample of the 5034 kimberlite was obtained by PQ core drilling of 43 holes for macro-diamond recovery. Material from NQ delineation holes completed in 1996 contributed an additional 10.2 t to the mini-bulk sample.

9.3.2 GKJV Pre-Production

Initial exploration by the joint venture in 1997 comprised a low-level airborne magnetic and five-frequency electromagnetic (EM) survey over the AK property. Geophysical anomalies generated from the surveys were followed by 2,211 sediment samples, 652 m of NQ core in five holes, and 85.35 m of reverse circulation drilling in four holes. Eight targets were identified in the AK property from this work and included the discovery of three additional kimberlites: Tesla in May 1997; and Tuzo and Hearne in August 1997. Delineation drilling on the four kimberlites (including 5034) comprised nine NQ diamond holes for 2,658.89 m.

During 1998, exploration stage sediment sampling (945 samples) and diamond drilling programs (664 m in four holes) were performed. Thirteen drill holes (2,673 m) were completed in 1999 on geophysical targets from airborne and ground geophysical surveys. A total of 708 sediment samples were collected primarily in the southern portion of the AK property. The sediment samples included material for geochemical analysis collected from a detailed grid up- and down-ice of the Gahcho Kué kimberlites.

The 2000 exploration program included airborne and ground geophysical surveys, and collection of 670 20-litre indicator mineral samples and 385 geochemical samples. Sample collection was primarily from the southern portion of the AK property.

Detailed electromagnetic surveys at 40 m line spacing and 20 m station spacing were conducted at Kennady Lake near 5034, Hearne, Tuzo, and Tesla, and 12 km to the northeast over the Kelvin kimberlite intrusion. The electromagnetic data collected during this survey completed full coverage of Kennady Lake south of Tesla and mapped the full extent of the Dunn dyke.

A total of 23 geophysical targets were drill-tested, one NQ core hole was drilled at the Hearne kimberlite, and three holes tested the Dunn anomaly, located about 250 m west of the 5034 and Tuzo kimberlites, for a total 543 m drilled.

Six ground gravity surveys and four extensions to grids were completed in the AK Claims in 2003. In addition, glacial sediment sampling was undertaken (21 samples).

A total of 1,198 linear km of airborne gravity survey was completed in October of 2011, covering the extent of the Mine area.

Delineation drill programs were undertaken from 1997 to 2008. Drilling and sampling of the deeper portions of Tuzo was undertaken from 2010 to 2013.

In conjunction with the Tuzo deep drilling programs, additional drilling was conducted to delineate geophysical anomalies identified during geophysical surveys conducted during 2012. These programs consisted of a flown 1037 line-km survey followed by 3230 ground gravity surveys. 12 holes, totalling 1064.8 m of drilling, were drilled to delineate the anomalies identified during geophysics surveys; however, no new kimberlites were identified.

9.3.3 GKJV Production

From commencement of operations several focused mining samples have been completed in order to better define grade, size frequency distribution (SFD), and revenue. In 2017-2018, five focused mining samples were collected from 5034, one each from the Center, East, West, Southwest Corridor, and North Lobes. Three samples were collected from Hearne in 2018, with two additional samples in 2019. These samples were each run exclusively through the main process plant over a period of several days to generate the results. The results from the Center, North, East, West, and Hearne bodies were used to update the grade, SFD, and revenue models. Centre and East were applied in 2017, West, Southwest Corridor, and Hearne in 2018, and Hearne updated again in 2019 (Ellemers et al., 2017a; Ellemers et al., 2017b; Dankowski, 2017; Dankowski, 2018; Donovan, 2018a, Donovan, 2019a to c).

Additional focused mining samples to update grade, SFD and revenue models have since been collected from Tuzo (2020), Wilson (2021) and NEX (2021,2022,2023).

9.3.3.1 Petrography, Mineralogy & Other Studies

Detailed petrography and mineralogy are integral part of GKJV's exploration process. Reports include Caro and Kopylova (2004), Hetman et al. (2004), Kryvoshlyk (2007), Seller (2008), Kryvoshlyk (2008), and Mann (2013). Details of methodologies are discussed in Webb et al. (2006), Field and Ferreira (2006), Seghedi and Maicher (2007), Stiefenhofer (2007), Kryvoshlyk (2008) and Mann (2013). Methods include abundant use of thin sections and polished slabs, detailed mineral counts, and whole-rock geochemistry. The most recent comprehensive studies of this nature as referenced above are those of Kurzslaukis and Pell (2020, 2021) for the Tuzo and Wilson kimberlites, and Kurzslaukis and Rodriguez (2024) for the Hearne kimberlite.

9.4 Hydrology & Geotechnical

Golder Associates (Eichenberg, 1999) trained GKJV personnel in the geotechnical aspects of core logging, and in 1999 a geotechnical study was performed by Golder Associates (Eichenberg, 1999). The Laubscher rock mass classification system was used to assess the geotechnical data. Geotechnical units identified were based on fracture frequency, rock strength, and joint conditions, in country rock and in kimberlite. The following work was performed:

- Core orientation, fracture frequency, rock strength and joint conditions were measured; and
- Rock mass rating and rock mass strength for each unit was calculated.

Point load testing of kimberlite and country rock xenoliths from the Tuzo 2002 HQ core specimens was performed (Charlebois, 2003). The aim of this exercise was to obtain fresh point-load strength index data for comparison against possible future rock-strength classification by ore dressing studies (ODS).

Geotechnical and geohydrology consultants were employed on site during the 2004 drilling program for detailed logging. A standard geotechnical logging template developed by SRK Consulting Services (SRK) was used to record field drill hole data, including geotechnical logs, field geological log, density sample results and down-hole survey measurements. A site-specific geotechnical discontinuity atlas was produced. SRK supervised a geotechnical drilling program in the area of proposed open-pit mining, comprising geotechnical logging and an assessment of geological structures, rock strength, and hydrogeology for pit design and slope optimization.

An assessment of uniaxial compressive strength and elasticity of 66 kimberlite and country-rock samples collected from the 2011/2012 core drilling campaign was carried out by Mirarco (Suorineni, 2012). Instrumented unconfined compressive strength testing was carried out on all intact core specimens.

Additional geotechnical drilling was commissioned in 2016/2017 to further assess the impact and continuity of the J5 joint set after the magnitude of the joint set was confirmed during the mining of 5034. These drill programs were supervised by Piteau Associates and conducted during mine operations. The field investigation was conducted by Aurora Geosciences and consisted of twelve boreholes which were used to obtain rock mass characteristics through oriented core logging.

Following the 2017 Piteau Associates work, an additional field investigation commenced from 2017 to 2018 to address data gaps and target potential adverse structural orientations that could not be analyzed in detail from previous work. In total, 15 geotechnical holes were drilled. Photogrammetry mapping data of the temporary and final pits walls, as well as surface mapping data of the outcrops and the upper west, north and east walls of the 5034 pit were also collected.

Hydrology and geothermal drilling programs were also completed in 2004, supervised by HCI Hydrologic Consultants, Colorado, USA. Work comprised hydro-structural drilling of faults and potential lake dewatering dykes. Hydrological data for hydrological modelling were tied into environmental baseline studies. Packer testing was undertaken at 3 m and 9 to 12 m, for a total of 141 test intervals. Sub-permafrost sampling was undertaken, as was water sampling of the 5034 proposed pit, where 12 airlift tests at 30 m intervals were completed. To collect geothermal data for modelling to tie into environmental baseline studies, thermistors were installed at a depth of 250 m.

Geotechnical activities in 2022-23 included 12 shallow drillholes (max depth 16.5 m) to assess near-surface rock competency for modification of the fine processed kimberlite tailings storage area (total 109.5 m). Two in-pit drillholes were completed to install piezometer and time domain reflectometer (TDR) instruments (261 m total). An additional 27 drillholes were opportunistic, piggybacking off of exploration drilling to install piezometer and/or thermistor instrumentation. The majority of drillholes were positioned around Hearne and Tuzo, totalling 6,663 m.

10 DRILLING

The property was the subject of several drilling campaigns since the initial work by Canamera in January 1995. In 1995, small diameter core drilling (47.6 mm NQ core) by Canamera discovered the 5034 kimberlite while drilling geophysical anomalies at the head of a kimberlitic indicator mineral dispersion train.

Following on the 5034 discovery, small-diameter NQ core drilling was used extensively to test geophysical and kimberlite indicator mineral dispersion-train targets peripheral to the 5034 cluster (Tuzo and Hearne were discovered in 1997), as well as to delineate the shape of the kimberlite bodies and to provide data (including micro-diamonds) for geological and mineral resource modelling.

In 1996, large diameter core (LDC) drilling was used to collect small mini-bulk samples from 5034, using PQ-sized core (85 mm diameter), and in 2007 the GKJV obtained 149 mm diameter LDC samples. These LDC samples provide additional information regarding the commercial diamond content of the pipes.

Large diameter reverse-circulation (RC) drilling (LDD) was used to collect kimberlite mini-bulk samples by the GKJV. LDD programs have included smaller scale 140 mm (5.5 inch) diameter drill holes in 1998 and 1999; 311 mm (12.25 inch) drill holes in 1999; to the largest employed, the 610 mm (24 inch) diameter drill holes in the 2001, 2002, and 2008 mini-bulk sampling programs. The LDD mini-bulk sample programs obtained macro-diamonds for grade and revenue estimation.

In 2011, 2012 and 2014 small diameter (HQ) drilling was conducted on the Tuzo pipe to collect kimberlite samples at depth.

Further drilling and sampling programs in 2017 through 2019 have focused on defining the Southwest Corridor, Northeast Extension and Wilson. In late 2019 and early 2020 a brownfields exploration program was launched on the leases with drilling results described below.

10.1 5034

Canamera's 1995 and 1996 drilling of the 5034 kimberlite comprised 69 NQ core holes to obtain geological and pipe volume data and 43 PQ core holes to obtain macro-diamonds for a preliminary estimate of diamond grade. An additional 11 NQ core holes and 17 RC holes of various sizes were drilled by GKJV between 1998 and 2002. Mini-bulk sampling conducted between 1998 and 2002 to determine diamond grade and revenue has included 140 mm (5.5 inch) diameter drill holes in 1998, 311 mm (12.25 inch) diameter drill holes in 1999, and 610 mm (24 inch) diameter holes that were drilled in 2001 and 2002. The 1998 and 1999 drilling focused on the 5034 West, Centre and East Lobes. In 2001, the East Lobe and the west neck of the Centre Lobe were drilled. In 2002, work focused on the narrow corridor drilled previously in 1999 through the West and Centre Lobes. There was one delineation NQ core hole drilled by GKJV at 5034 in 2003.

In 2004, 13 core holes drilled into the 5034 kimberlite as part of pit geotechnical, hydrogeology, and ore dressing studies (ODS). In 2005, a single core hole for hydrogeology studies was drilled through the East Lobe of 5034, and two core holes were drilled at the North Lobe of 5034 to provide additional geological data. A substantial core program followed this in 2006 that comprised 11 HQ core holes for pit geotechnical, pipe volume delineation, and geological investigations. A campaign of core drilling was conducted in 2007 with five HQ core holes being drilled to provide geological data from the 5034 East Lobe and five LDC holes (149 mm, 5.875 inch) drilled into the 5034 North Lobe to obtain a small parcel of macro-diamonds for comparative purposes.

The Southwest Corridor area lies between the 5034 and Hearne pipes and has been recognized as containing diamondiferous kimberlite over the course of mining activity and confirmed as part of the 5034 kimberlite. During 2017 additional resource drilling was conducted to further define and extend the Southwest corridor. Six drill holes were completed by December 31, 2017 with an additional 10 holes in early 2018. A geophysical program was carried out in the fall and was comprised of a ground gravity survey centred on the Southwest Corridor area as well as other nearby areas, including between the Tuzo and Tesla pipes.

The 2017-2018 exploration drill program in the Southwest Corridor, originally planned for 17 holes and subsequently increased to 18 holes. A total of 15 holes were designed to cross-cut the projected southwestward extension of kimberlite from the 5034 pipe that would likely be included in the Gahcho Kué mine plan. Another two holes were directed down-dip and along strike of the kimberlite body to define the internal geology and to maximize metres of drilled kimberlite for micro-diamond sample collection. A final cross-cutting hole, designed to test the extension of the unit at a depth of 275 m, did not intercept kimberlite.

During 2018 and 2019, a total of 17 HQ core holes were drilled in the corridor between 5034 and Tuzo. The initial focus has been the zone between the 5034 pipe and the North pipe, and the zone extending immediately northeast of the North pipe. Drilling confirmed kimberlitic material between extending north of the 5034 North Lobe and North pipe, with true intercepts up to 72 m in thickness and extends vertically to depth from 248 m to 350 m. This portion of 5034 is referred to as NEX deep. Insufficient drilling and sampling have been conducted to determine the internal geology or economic potential of NEX deep.

10.2 Hearne

A total of 25 core holes were drilled in and around the Hearne kimberlite by GKJV during 1997 – 2003:

- 17 in Hearne North;
- 6 in Hearne South (1 that intersected both pipes); and
- 2 of which did not intersect kimberlite.

In 1998, 19 LDD holes (140 mm diameter) were drilled into the Hearne kimberlite to test the diamond grade:

- 16 were located at Hearne North;

- 1 in Hearne South; and
- 2 holes intersected only granite.

In 1999, eight LDD (311 mm diameter) holes were drilled into Hearne North and two were drilled into Hearne South to obtain macro-diamonds for initial revenue estimation. In 2001, three LDD (610 mm diameter) holes were drilled into the northern half of Hearne North, and five more LDD (610 mm diameter) holes tested Hearne North in 2002 to increase the parcel of macro-diamonds available for revenue estimation.

In 2004, 14 NQ core holes were drilled into the Hearne kimberlite as part of pit geotechnical and ODS programs. In 2005, a single core hole was drilled for hydrogeological studies; and in 2006, a single core hole was drilled to support pit geotechnical studies.

In 2018, six HQ core holes were drilled in the Hearne deposit. The objective was to test the potential extensions of the Hearne pipe, particularly between the North and South Lobes, as initial results of the program confirmed the presence of kimberlite at depth. The drill program confirmed that the North and South Lobes of the Hearne body are connected by a kimberlite breccia. The kimberlite breccia is present vertically 40 m deep from surface and extends vertically to at least 220 m from surface.

The Hearne Northwest Extension was discovered in late 2021, when kimberlite measuring 25 m across in a bench face was exposed during routine mining operations. Delineation drilling of the Hearne Northwest Extension started in 2022 with 16 drillholes and 5,026 m completed by the end of the year. Ten of the sixteen drillholes had significant kimberlite intersections ranging from 23-114 m. The 2023 drilling program included seven drillholes collared outside of the pit, and four collared on kimberlite within the pit to test the width and depth of the extension. Kimberlite intersections up to 287 m were encountered, with an additional 150 m depth projected from the 3D modelling (MPV, 2023,2024).

10.3 Tuzo

Between 1997 and 1999, eight NQ core holes were drilled into Tuzo. All of these were angle holes collared outside the kimberlite body and drilled into, and sometimes through, the kimberlite. In 2002, seven vertical HQ core holes were drilled into the pipe. LDD mini-bulk sample drilling took place in 1998 and 1999. Drilling to a maximum depth of 166 m, 17 LDD holes (140 mm diameter) were completed in 1998, and an additional 11 LDD holes (311 mm diameter) were completed in 1999 to a maximum depth of 300 m.

In 2004, two HQ core holes were drilled at Tuzo as part of a pit geotechnical study. This was followed by an 11-hole HQ core program in 2006 to provide pipe delineation and geological data. In 2007, a grid of 27 HQ core holes was completed to provide additional geological and pipe volume delineation data. The final resource drilling at Tuzo was an LDD mini-bulk sample program conducted in 2008 with nine holes (610 mm) completed to provide additional macro-diamonds for diamond revenue estimation.

An additional six HQ diameter core drill holes (4,127 m) were drilled in 2011/2012 with the purpose of further delineating the deeper portion of the Tuzo kimberlite and obtaining material for micro-diamond sampling.

A three-hole drill program was completed in 2014 and successfully extended the Tuzo kimberlite to a depth of 750 mbs level. Drilling for a similar extension to the discovery at Hearne was started at Tuzo in 2023. One drillhole collared northeast of Tuzo intersected kimberlite from 669.8-710 m (~40 m total). A second drillhole positioned 100 m to the east of the first drillhole did not intersect kimberlite.

10.4 Wilson

Drilling to define Wilson consisted of 28 HQ core drill holes in 2019. The discovery drillhole intersected tuffisitic kimberlite beneath 18 m of lake water and bottom sediments to roughly 137 m, and hypabyssal kimberlite from 152 to 207 m. A total of 1,702 kg of kimberlite were treated for micro-diamonds, with 5,560 diamonds recovered from the +0.075 mm size classes. Eighty-six +0.85 mm diamonds recovered from the two drillholes weigh a total of 2.33 carats. Along with the drilling results, modelling of the micro-diamond data from a total of 273 - 8 kg samples, and two focused mining samples totalling 15,579 carats have defined an Indicated and an Inferred Resource at Wilson.

10.5 Satellite Deposits

The Gahcho Kué Resource Extension Program (REP) includes both near-mine and greater lease area exploration. To date, focus has been on near mine targets, resulting in the successful discovery, definition, resource estimation, and classification of the Southwest Corridor, Hearne Corridor, and the Northeast Extension of North Lobe (NEX). The Curie and Wilson kimberlites were also discovered, with Wilson advanced to resource status as described above.

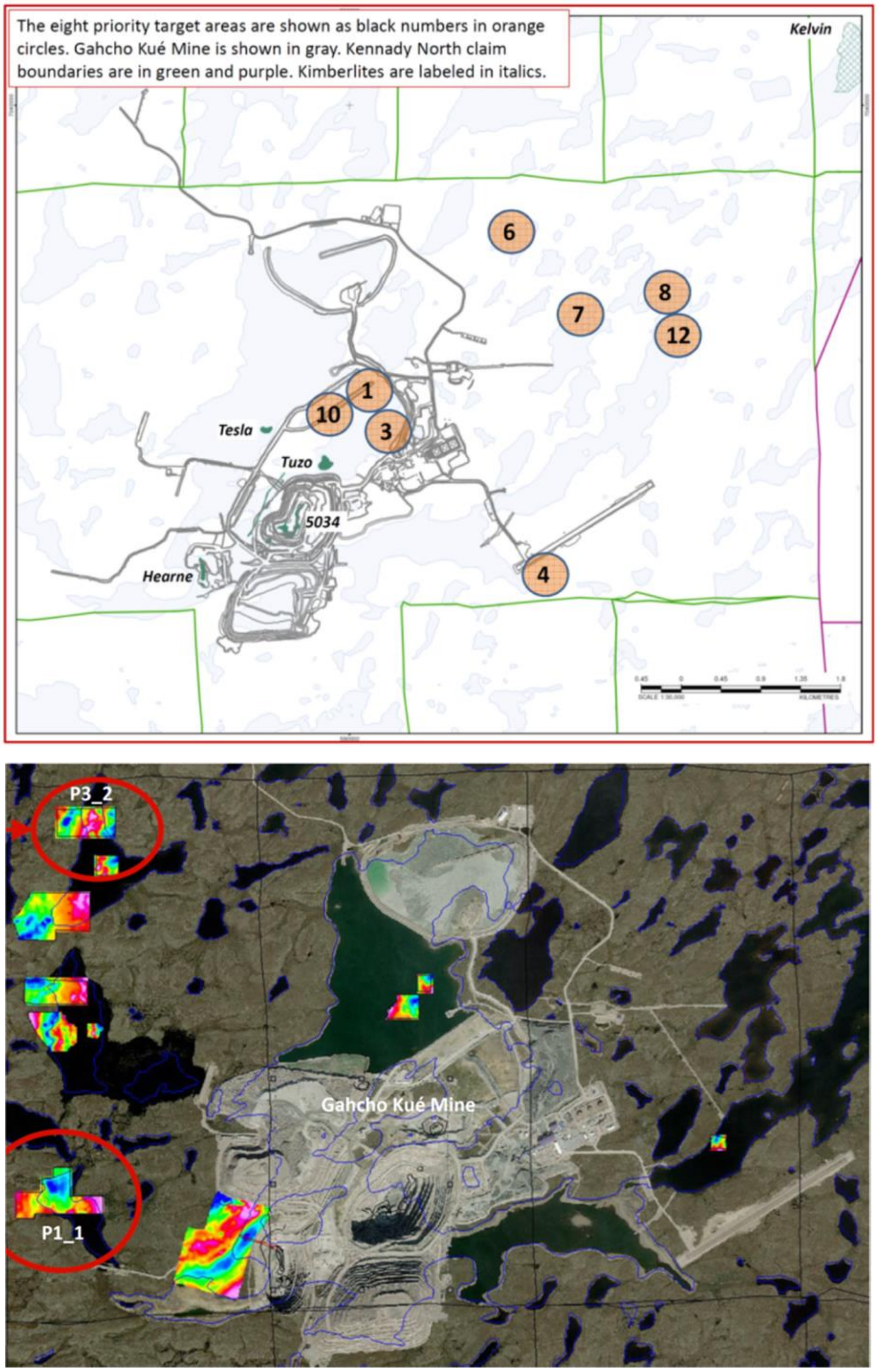
Drilling commenced at the Curie target in 2018 with a total of four HQ core drill holes conducted. The Curie target has been confirmed to have kimberlite intersected at a vertical depth of only 18 m, with the deepest intercept at 119 m depth. Following additional geophysics, drilling in 2019 did not intersect any significant volumes of kimberlite. No further drilling is planned for Curie.

10.6 Brownfields Exploration

In late 2018 and early 2020 collaborative workshops between De Beers and MPD prioritized 13 targets, of which eight were selected for drill-testing (Figure 10-1). These target areas were located within and to the north of the Gahcho Kué Mine operations. Targets 1,3,8, 10 and 12 were previously drill-tested with no significant kimberlite intersected. Targets 6 and 7 were eliminated from drilling based on follow-up ground geophysics. Target 4 was drill tested with two drillholes (223.81 m total) late in 2022 and no kimberlite was encountered.

In early 2021 a desk-top study of structural features was combined with historical geophysical data to generate additional target areas over the GKJV leases, and several areas of interest (‘AOI’) were identified. The Western Target areas are located 2-3 km west and northwest of the mine (Figure 10-1). The target areas underwent ground geophysical surveys in early 2022, and two AOI were drill-tested. The lake-based target P1_1 was drill-tested in the winter (508 m from five drillholes) with only 0.2 m of silicified kimberlite intersected. Land-based target P3_2 was drill-tested in Q3 (270 m from two drillholes) and encountered no kimberlite (MPVD, 2022).

Figure 10-1: Plan Views of the Gahcho Kué Mine Area with Brownfields Exploration Areas of Interest



Notes:

The top image shows target areas selected in the De Beers/MPD workshops. The bottom image shows the western AOI selected from the De Beers desktop study.

Source: MPD (2022)

11 SAMPLE PREPARATION, ANALYSES & SECURITY

Information contained in this section has been taken from AMEC's 2009 Technical Report (AMEC, 2009) and the Mineral Services' 2013 Report. The QPs have reviewed the information contained in the previous Technical Reports and are of the opinion that sample preparation, analyses and security measures used meet industry standards and are adequate. Sections from these reports are included below.

11.1 Core Sample Preparation

11.1.1 Canamera (1994 – 1996)

The kimberlite intersections recovered by Canamera Geological Ltd. In Vancouver BC, where the core was split after detailed petrologic logging. Portions of the split samples were processed for micro-diamonds by caustic fusion at both the Canamera Geological Ltd. laboratory in Vancouver and at the Saskatchewan Research Council facility in Saskatoon (Clement et al., 1996).

11.1.2 GKJV (1996 – 2007)

Core samples recovered by GKJV over 1997-2007 core drilling programs were utilised for the following studies:

- Geology studies – slab and thin section analyses, petrology investigations, whole rock chemistry, heavy mineral analysis, and internal dilution estimation;
- Mineral Resource estimation – density determinations, micro-diamond estimation geotechnical studies – slope stability analysis, rock strength point load and uniaxial compressive strength tests, concrete aggregate suitability, weathering and slake testing;
- Process plant design – ODS;
- Environmental baseline – ARD; and
- Micro-diamond analysis.

Kimberlite core with corresponding country rock contact zones were shipped to Yellowknife, Vancouver, Toronto, or Sudbury for detailed logging by project petrologists. Core was kept intact during collection at the drill sites and packed into labelled core boxes with depth markers placed between each drilled core run. Geotechnical logging was conducted at the drill sites. After detailed petrological logging was completed off-site, Project petrologists selected samples for geology studies including slab and thin section analyses, petrological investigations, whole-rock chemistry, heavy-mineral analysis, and internal-dilution estimation.

Samples removed for slab and thin section, micro-diamond, whole rock chemistry, heavy mineral analysis, uniaxial compressive strength, ore dressing studies, acid rock drainage and slake weathering tests were removed from the core boxes, processed, and are considered destroyed. Density and rock-strength point-load samples were returned to their respective core boxes after completion of processing. Kimberlite core sampled for geology studies from the 2007 program is the only core that was split.

All unprocessed kimberlite core, along with 30 m, more or less, of the country-rock contact zones, is currently stored at a De Beers warehouse in Sudbury, Ontario. Country-rock core is stored at the Gahcho Kué site.

11.2 Mini Bulk Sample Preparation

11.2.1 Canamera (1996 – 1998)

In 1996 a 105.2 t mini-bulk sample of the 5034 kimberlite was obtained by PQ core drilling of 43 holes with an additional 10.2 t from 30 NQ delineation holes contributing to the total of 115.4 t. Reportedly, 103.7 t were processed at the Canamera Geological Ltd. diamond recovery plant (Clement et al., 1996).

11.2.2 1998 GKJV – 150 mm (5.5-inch) RC Mini-Bulk Sampling Program

From the 1998 mini-bulk RC drilling program, a total of 73 x 150 mm diameter RC drill holes provided 222 t of kimberlite (callipered mass) from the 5034, Hearne, Tuzo, and Tesla kimberlites for a total of 7,170.32 m of drilling. The screen aperture used was nominally 1.0 mm. Samples were collected on average every 36 m, but the actual interval ranged from 6 to 60 m. The 1998 mini-bulk samples were processed at the De Beers Grande Prairie treatment facility at a bottom cut-off of 1.0 mm (Williamson and Hetman, 1998).

11.2.3 GKJV (1999 – 2008)

The 1999 LDD bulk sampling program produced 1,820.3 t of kimberlite, measured by caliper, from the 5034, Hearne, Tuzo, and Tesla bodies in 43 boreholes for a total of 10,451.2 m of drilling (Grenon et al., 1999). A nominal 1.4 mm screen aperture size with tolerances between 1.35 to 1.52 mm was employed at the drill site (Grenon et al., 1999). Drill holes were processed by individual bulk samples collected between 18 m and 24 m intervals. The process plant lower cut-off used was 1.6 mm square aperture (Williamson et al., 1999).

During the 2001 bulk sampling program, a total of 968.5 t of kimberlite were measured by caliper from seven LDD holes drilled in the 5034 and Hearne North kimberlites. The total interval of kimberlite sampled was about 1,240 m. The bottom screen cut-off at the drill rig was 1.58 mm. A nominal 1.5 mm bottom screen cut-off was employed during sample processing that was conducted at the De Beers Grande Prairie plant (Skinner et al., 2001). Drill holes were processed by individual bulk samples collected at 12 m bench intervals.

A total of 1,919 m of kimberlite was RC drilled and sampled at the 5034 and Hearne kimberlites in 2002. The bottom screen cut-off at the drill rig was 1.58 mm. Based on caliper measurements, a total sample mass of 1,502 t was extracted. A nominal 1.5 mm bottom screen cut-off was employed during sample processing that was conducted at the De Beers Grande Prairie plant. Drill holes were processed by individual bulk samples collected at 12 m bench intervals. The 2002 LDD mini-bulk sample processing is reported in Skinner et al. (2002).

The LDC kimberlite intersection in 2007 of the 5034 North Lobe totalled 638 m, and an additional hammered kimberlite intersection of 45.4 m of kimberlite was processed. Geological logging of 5034 North Lobe LDD core determined geology units that were utilised for sample processing intervals. Sample processing was conducted at the De Beers plant in Grande Prairie, Alberta at 1.0 mm bottom cut-off, with a primary crush at -12.0 mm, and secondary crush of the -12 +6.0 mm fraction at -6.0 +1.0 mm (Skinner, 2007).

During 2008, the drilled Tuzo kimberlite intersection totalled 1,234.1 m in RC samples and produced about 956.2 t as measured by caliper. A nominal 1.5 mm bottom screen cut-off was employed during sample processing that was conducted at the De Beers Grande Prairie plant (Thomson, 2008). Drill holes were processed by individual bulk samples collected at 12 m bench intervals.

Mini-bulk sample preparation procedures are typical of the industry and are adequate to support Mineral Resource estimation.

11.3 Analyses

11.3.1 Micro-Diamond Samples

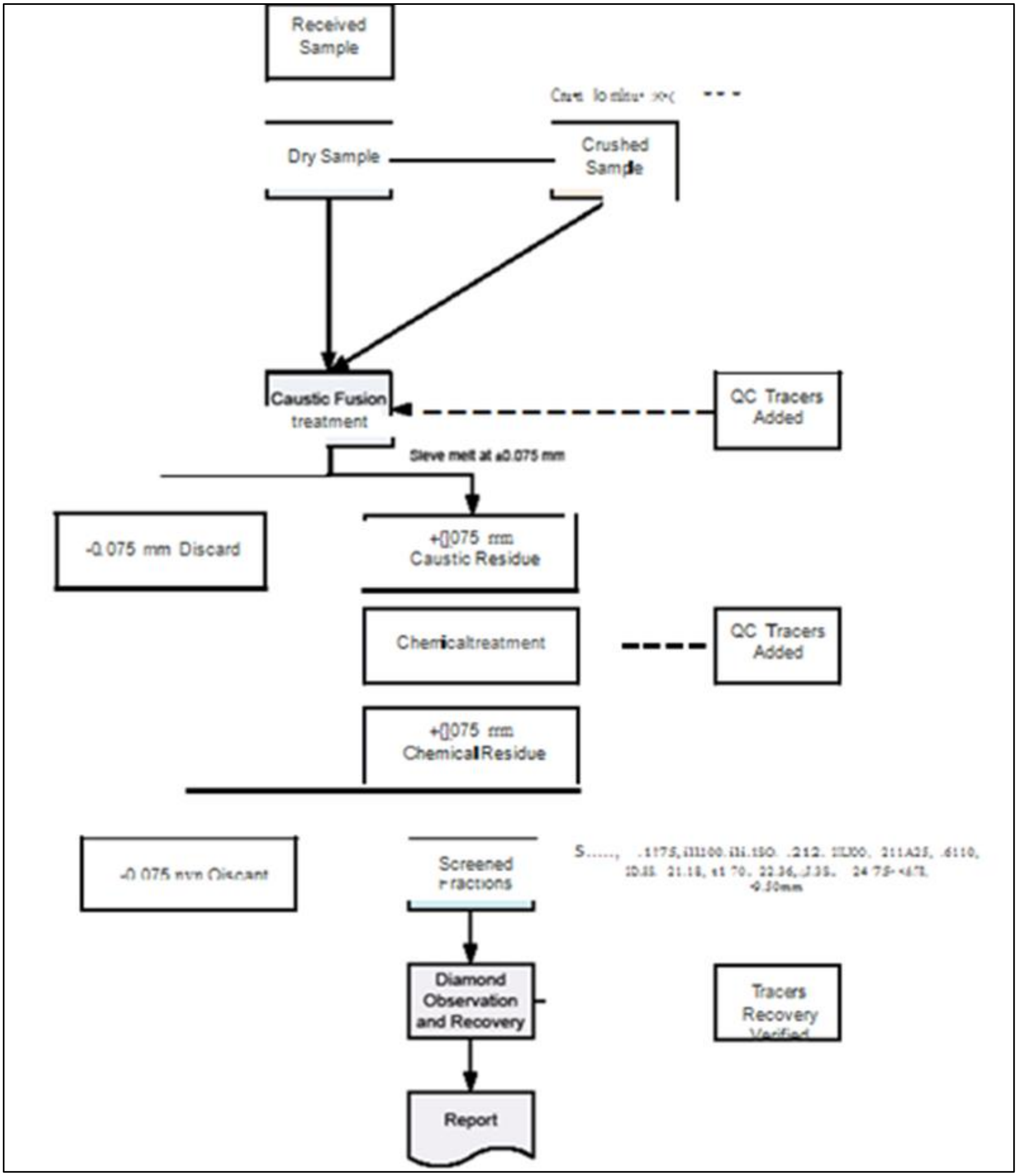
Micro-diamond samples were processed at De Beers Kimberley South Africa micro-diamond laboratory (De Beers Kimberley), SGS Lakefield Research Laboratories (SGS) and at the Saskatchewan Research Council (SRC) Geoanalytical Laboratories. Selected micro-diamond and residue samples recovered at SGS and SRC have undergone audits at the De Beers Kimberley Micro-Diamond Laboratory as part of routine quality assurance and quality control (QA/QC) measures.

The following discussion of micro-diamond processing is based on a visit by AMEC to the Saskatchewan Research Council Micro-Diamond recovery facility in Saskatoon, Saskatchewan. Figure 11-1 is a generic micro-diamond recovery flowsheet.

11.3.2 Sample Receiving and Preparation

Kimberlite samples are received by the laboratory, sorted, and assigned laboratory sample numbers. The samples are logged into the laboratory information system (LIMS) and are dried for 12 to 16 hours at 60°C. The samples are crushed, if necessary, to about -½ inch and split into 8 kg aliquots. The samples are removed from the oven and allowed to cool.

Figure 11-1: Generic Micro-Diamond Recovery Flow Sheet



Source: Hatch (2013)

11.3.3 Caustic Fusion Processing

The caustic fusion process begins with placing 75 kg of virgin caustic (NaOH) in an approximately 40 L furnace pot. The 8 kg sample is then loaded on top of the caustic. Bright yellow synthetic diamonds, 150 to 212 µm in diameter are loaded on top of the kimberlite sample as a spike.

The temperature is then ramped up to 550° C, and the sample is held at that temperature for 40 hours. After 40 hours, the pots are removed from the kilns and allowed to cool. The molten sample is then poured through a 75 µm screen. These screens are single-use screens that are discarded after use. Micro-diamonds and insoluble minerals remain on top of the screen. Insoluble minerals are typically ilmenite and chromite. The pot is then thoroughly soaked with water to remove any remaining caustic and trapped diamonds, and the water is again poured through the screen.

Because not all of the material dissolves, additional steps are required to clean ilmenite, chromite, and other materials from the concentrate. Samples are sent to the "wet" lab where acid is added to neutralize the solution. The residue is then rinsed and treated with acid to dissolve readily soluble materials from the residue.

The sample is transferred to a zirconium crucible along with an additional bright yellow synthetic tracer diamonds and fused with sodium peroxide to remove any remaining minerals other than diamond from the sample. The sample is allowed to completely cool, and the liquid is decanted from the beaker. The remaining residue is then wet screened to divide the recovered diamonds into micro-diamond size classes. Stones are stored in plastic vials containing methanol.

11.3.4 Sample Picking, Weighing & Data Recording

Samples are then sent to the observation room where they are handpicked by trained observers. Spikes are recovered first. After spike recovery is deemed complete, diamonds are picked from the residue and individually weighed. The weight of each stone in each size class is recorded. In GKJV's case, stones smaller than 300 µm are not individually weighed, but the total parcel in each size class is weighed.

Stones are weighed on ultra-micro balances capable of accurately weighing 75 µg. Data are recorded on paper that is then manually entered into a spreadsheet by trained clerical personnel.

11.4 Mini-Bulk Samples

GKJV mini-bulk samples underwent dense media separation (DMS) concentration at the De Beers DMS facility in Grande Prairie. Sealed bulk sample concentrates were shipped under "Kimberley Process" chain-of-custody procedures to the De Beers Johannesburg, SA facility for final diamond recovery by x-ray fluorescence. The recovered micro-diamonds were shipped under the same chain-of-custody procedure to the De Beers Diamond Trading Company (DTC) in London UK for appraisal and revenue analysis.

11.4.1 1999 GKJV Mini-bulk Sample Processing

Sample processing during 1999 was by gravity feed from the sample bag through a scrubber fitted with 12.5 mm square aperture a trommel screen, all +12.5 mm material was crushed to 10 mm and fed back into the scrubber. All -12.5 mm to 1.6 mm material was fed via a dropout box onto a 1.6 mm square aperture poly-panel pre-preparation screen, where this DMS feed was washed.

Following preparation, the sample was gravity fed into the mixing box from where the FeSi sample mix was pumped through a 200 mm diameter cyclone with a 46 mm spigot.

11.4.2 2001 – 2008 Grande Prairie Dense Media Separation (DMS) Circuit

A purpose-built 5 t/h (200 mm cyclone) DMS plant, with an integral scrubber, trommel screen, crusher, preparation screen and concentrate recovery system was installed at De Beers' processing facility in Grande Prairie, Alberta and used in 2001.

The sample material was gravity fed from the 2 t sample bag into a 2 t feed bin; from the feed bin the sample was fed onto a 9 m long feed-belt; feed speed was controlled by a gate in the front of the conveyor feed tray. From the conveyor, the material was gravity-fed into the scrubber, with the assistance of the crusher pump water. After scrubbing, the sample was discharged through a 14 mm trommel screen into a 4/3 Warman pump. This material was fed via the 4/3 Warman pump through a drop-out box onto the prep screen on the DMS unit. Material over 14 mm in size fell from the trommel screen lip into a 6 x 4 Masco jaw crusher, set to a 10 mm closed-gap setting. This crushed product was gravity fed into a 3/2 Warman pump and returned to the scrubber. In this way, the circulating +14 mm oversize material remained in closed circuit until reduced to below 14 mm in size. Due to the minimal amount of +14 mm material present in the samples, the jaw crusher could not be choke-fed during production; however, most of the oversize material preferentially, remained inside the scrubber during feeding. This material was choke-fed through the crusher when the scrubber was reversed during clean- out at the end of treatment of each sample.

During processing, fines (-1.5 mm material) are removed on the preparation screen, while the sample material is split into high- and low-density components in the cyclone. Sample concentrate reports to pails within a concentrate cage, and tails are collected in a per-numbered sample bag and stored on a per-sample basis. The single deck prep screen is fitted with 1.6 mm square aperture poly-panel screen panels and a set of spray bars. After washing on the prep screen, the sample material is gravity fed into the DMS mixing box, where the sample material is mixed with the dense medium (270D grade ferrosilicon (FeSi) and water mix). This mixture is pump-fed at a pressure of ~98 Kpa into a 200 mm DMS cyclone with a 46 mm spigot. Lights (sample tailings) from the cyclone are drained and washed across the lower deck of a double deck product screen to recover FeSi and discharged to a bulk-sample bag for weighing and storage. Spigot product from the cyclone (DMS concentrate) is similarly washed across the upper deck of the double deck product screen (1 mm square poly-panel) and gravity fed to a 20-litre concentrate pail, located within a secure cage.

DMS concentrates are collected into a pail within a cage that is secured by two padlocks and two single-use security seals. The pail is sealed while inside the glove-box equipped concentrate cage, before being removed from the cage and weighed. These concentrate drums were all sealed with uniquely numbered security seals and were then stored in a locked transport container prior to shipment.

A video camera was installed inside the transport container (which was also alarmed), and two cameras overlooked the treatment plant concentrate cage. Two seals, as well as two padlocks, seal both the cage and transport container. The plant supervisor and the operator each held a key to one of these padlocks; consequently, neither the cage nor the concentrate container could be opened without both the plant supervisor and the operator being in attendance.

Prior to export, concentrate pails were drained of water, weighed, and boxed within a palletised wooden crate, which was firmly screwed together and then strapped using metal bands. Uniquely numbered, tamper-evident seals were strategically placed on these straps to detect unauthorised opening the crates. Sample shipments were made on a regular basis. Shipments would be collected from the Grande Prairie premises by a Brinks Inc. armoured vehicle and driven with an armed escort, to the Edmonton airport, where they were air-freighted to Johannesburg via London.

Following DMS concentration, an overall concentrate percentage yield (concentrate mass divided by sample mass calculated from caliper measurements of hole diameter) was recorded. An overall sample recovery was calculated by dividing the headfeed sample mass by the sample mass calculated from caliper measurements of the hole diameter. All samples were subjected to similar processing, except for clay-rich samples, where small clay balls could still be found in the tailings following treatment. Such samples were re-processed.

Other measurements recorded during processing include moisture content and representative screening analysis of the tailings material. The treatment plant's operational parameters were recorded. This included measurement of operational time-and-motion information with discrimination of operational activities and downtime. Medium density was recorded regularly, as was the operating-medium pressure at the cyclone. Testing with density tracers was routinely undertaken, and the density cut-point and probable error (Ep) were determined.

Various measures were implemented to prevent sample contamination. The plant was cleaned after every sample. This involved a thorough cleaning of the scrubber, feed bin, pumps, screens, etc. A more thorough clean-out and a clean-up procedure was followed between processing material from the different kimberlite pipes.

In an attempt to avoid contamination, the scrubber was reversed and pressure-washed. Spillage was collected from beneath the plant and re-introduced into the process stream. All screens were hosed and un-blinded between samples. The cyclone-feed pump would be stopped and restarted, to dislodge any trapped grains. The plant was operated without load for 15 minutes between samples in order to flush out any entrained material, in an attempt to prevent contamination between samples.

Macro-diamond sample preparation and recovery was performed using industry-standard procedures. The resultant diamond populations are adequate for Mineral Resource estimation and mine planning.

11.4.3 2016 – 2023 GKJV

As part of mining operations to anticipate run of mine recoveries from kimberlite, focused mining samples were collected from selected kimberlites prior to mining. Over this period, focused mining samples were collected from Wilson, 5034 (Center, East, West, Southwest Corridor, North Lobe, NEX), and Tuzo (see Section 9.3.3). These samples were recovered and assessed under the same quality control, quality assurance and security protocols that are in place for the operating mine.

11.5 Program Quality Assurance / Quality Control

11.5.1 Canamera Geological Ltd. 1992 – 1996 QA/QC

Monopros Ltd. undertook a due diligence study of the 5034 kimberlite and the AK and CJ claims in 1996 (Clement et al., 1996). The study encompassed:

- Assessment of the information supplied by Mountain Province Mining Inc.;
- Discovery history;
- Local geological and topographic setting;
- Kimberlite discoveries;
- Pipe location and general geology of the occurrence;
- Petrological and mineralogical results and reports;
- Borehole information;
- Drill sampling information;
- Geophysical surveys;
- Details of micro-diamond samples;
- Geochemical analysis of indicator minerals;
- Macro-diamond sampling and diamond valuation;
- Treatment procedures for macro-diamond samples; and
- Access to diamonds for examination and valuation.

Kimberlite drill core received from Canamera was transported from Vancouver, BC and initially stored in the De Beers' warehouse in Grande Prairie, AB, moved to the De Beers' warehouse in Yellowknife, NWT and subsequently to De Beers' Sudbury warehouse facility where it is currently stored. The country-rock drill core remains on the Gahcho Kué site.

11.5.2 GKJV 1997 – 2003 Core Programs QA/QC

A surface grid tied to the Universal Transverse Mercator (UTM) system was established in the winters of 1997 and 1998 over each of the kimberlites. Several permanent reference points in each grid were established on land using the Trimble 4800 series global positioning system (GPS). These reference points were re-occupied later that year, again with a Trimble 4800 series GPS, which confirmed the accuracy of the original locations (Hodgkinson, 1998).

SRK Consulting conducted three quality assurance exercises during the 1998-1999 GKJV geotechnical program (Eichenburg, 1999), covering:

- Hole collar locations and drill rig setup;
- Core orientation (Pajari® tool and acid-test surveys); and
- Geotechnical measurements.

11.5.3 GKJV 1998 – 2002 Bulk and Mini-Bulk Sampling Programs QA/QC

In all cases, marked or synthetic diamond tracers were added to the samples to monitor recovery efficiency. Additional QA/QC measures are discussed below.

The coordinate grid established in 1997 to 1998 was re-established from previously laid-out permanent markers using a Trimble 4800 Series GPS system. The LDD hole collar locations were all established by measuring from the grid (Williams, 1999). A contractor independently surveyed about 50% of the collar positions (Valeriote, 1999).

An external audit of the procedures for the 1999 evaluation program at Kennady Lake was performed by a geologist and geostatistician from MRDI (now AMEC), during a site-visit lasting six days from 10 to 16 February 1999.

Conclusions and recommendations from that audit included but were not limited to:

- Data entry and verification procedures should be reviewed to reduce data entry errors;
- Manual sample logging prior to treatment at the Geological Sample Processing Services (GSPS);
- Facility results in occasional errors such as duplicate sample numbering and incorrect seal numbers on sample manifests;
- More frequent field granulometry samples should be taken;

- An estimate of slimes lost during dewatering of the kimberlite should be made for each hole;
- Security during all phases of the sample drilling and treatment is adequate and meets or exceeds industry standard;
- Data collected during sample treatment in Grande Prairie should be consolidated into one central entry point, with formal back-up procedures in place;
- The sample treatment plant is adequate. However, the double-deck screen arrangement requires frequent monitoring during operation to ensure efficient diamond recovery;
- Control of security seals at the Grande Prairie facility requires attention;
- DMS concentrate transportation should be reviewed to eliminate the road transport from Edmonton to Vancouver, en route to Johannesburg;
- A data acquisition program be initiated to provide engineering data for a future feasibility study;
- Alternative containers for transporting DMS concentrate from Grande Prairie to Johannesburg should be investigated;
- Process equipment at the GSPS facility should be reviewed to eliminate double screening and manual de-dusting steps;
- Additional computer terminals should be considered at the GSPS facility to reduce waiting time and potential data entry errors; and
- Random checks of samples revealed several discrepancies on the Geotrack sample tracking system in use at the GSPS facility.

Recommendations for improvements were implemented (Williams, 1999). Similar audits were undertaken at the Monopros Ltd. Grande Prairie, Alberta mini-bulk sample processing plant and the Geological Sample Processing Services (GSPS) diamond recovery plant in Johannesburg, SA.

Procedures during the 2001 to 2002 program included:

- 2001 program LDD hole collars were located using Real Time Kinematics GPS with the Leica system 500 tied into a local GPS reference stations; collars were re-surveyed after hole completion;
- 2002 program LDD hole locations were determined using a Trimble 5700 series system GPS in Real Time Kinematics mode tied into a local base station receiver (Rikhotso, Williamson and Podolsky 2002). Hole collars were re-surveyed after completion; and
- Kimberley Process Chain-of-Custody documentation is used for all concentrate transfers.

11.5.4 GKJV 2004 – 2008 QA/QC

- Density samples were subjected to a procedure based on ASTM Designation – C 97-96; variations in electronic scale output were monitored with standard weights. Density samples underwent a 1% external and 1.5% internal lab testing of duplicate density samples for verification of field density results; and

- Kimberley Process Chain-of-Custody documentation.

11.6 Database

Drilling data collected from the 1999 to 2003 exploration and evaluation programs were captured for GKJV using Access®. During 2001, a major database validation was completed, and the earlier files were consolidated into one database. Drilling data collected from the 2004 to 2005 Advanced Exploration programs continued to be captured using Access®.

In 2005 to 2006, a Datamine® geological data management system was implemented and utilized for capturing drill program data. The Datamine® data management system configures a central geological database through a series of configurable tables, columns and pick up lists with a query builder function. In 2007, all Gahcho Kué Mine drilling and sampling data were transferred into MinSAMP System's SQL database and this system became the single source of geological data. Data stored includes collar survey, drilling (core and large diameter drilling), geological and geotechnical logging, sample collection and consignment, sample processing and plant configuration, diamond sorting and consignment data. The geological model is in Gahcho Kué GEMS SQL server project. The MinSAMP system database is currently stationed on a Microsoft Windows Server/SQL 2008-R2 (64-bit) in DBCi's mine sites (dynamic data) and corporate office (projects/sites in 'closed/inactive' and 'care and maintenance') data centres. Each have appropriate access security, are on daily, weekly and monthly backup schedules and on/off-site storage for disaster recoveries as per DBCi's IM/IT Policies and Procedures.

A number of audits and reviews were scheduled to review the data used in the estimate as well as the estimation results. Reviews on resources focused on the following areas:

- Systems audit;

- Data and database audit;

- Historic LDD data review; and

- Historic core data review.

Data was verified by the competent person prior to estimation and can be relied upon. Checks were also conducted on the data submitted for estimation by the estimation team. The estimation was completed by De Beers Canada Inc. and a third party.

The database was internally audited between April and July 2004. Line verification was undertaken on collar location, downhole survey data, geological logs and macro-diamond data.

Drill hole folders were compiled for the Gahcho Kué data room in conjunction with the audit. A major restructuring of the GEMS project and associated database was completed by the mine resource geologist. The hard copy drill hole reports were compiled corresponding to the drill holes in the GEMS database and filed and indexed in the geology and resource data room. The geology and resource data room files are also digitally copied and stored in a mine "Electronic Data Management System" on a central server. AMEC, and its precursor MRDI, audited the database in 1999, 2003, 2005, 2007, and 2008 and found no significant errors or omissions (AMEC, 2008).

Spatial data has been collected using conventional survey techniques and different software which have evolved over time. The resource has been subjected to a number of sampling programs since discovery. Spatial datasets exist for drilling and sampling information. All resource data is in a 3D secure spatial database (GEMS) in the SQL version. All drilling and sampling information at Gahcho Kué, including bulk sample data, is included in the GEMS SQL. Furthermore, drilling and sampling information is also stored in the MinSAMP database. Drill hole collar locations have been surveyed by a licenced surveyor. Down-hole surveys have been undertaken using a variety of instruments utilizing magnetic, optical and gyroscopic methods. Future survey control will continue to be undertaken in accordance with De Beers and AA plc standards.

Updates to the Gahcho Kué kimberlite GEMS model geological "solids" were carried out upon the completion of each drilling program and the data was verified by both internal and external audits prior to each model update. Additionally, an update including mining information occurred during 2018 (Waldegger, 2018) and 2019 (Donovan, 2019). This includes blast hole and face mapping data as well as drilling data from recent brownfields exploration.

The volume models were created using GEMS and Leapfrog. The volumes generated were quantified by running the volumetrics at a needling density of 9 x 9. Leapfrog® software was used to support the development of the 2018 and 2019 volume models, specifically the update to Southwest Corridor and Northeast Extension. In this case, Leapfrog® was used to develop the initial model shape, which was imported to GEMS for comparison to previous modelling and final completion/review (Waldegger, 2018 and Donovan, 2019).

During May 2017 an audit of the Resource and Reserve reconciliation was completed (SRK, 2017). The audit focused on the Processes, People and Systems involved in generating and reporting of the 2016 and 2017 Resource and Reserve Statements for Gahcho Kué Mine. There were only a few findings during the audit which required action, and those items have been addressed.

11.7 Sample Security

Security procedures were in place during bulk and mini-bulk sampling drilling programs at the Gahcho Kué site during sample processing at the De Beers DMS facility in Grande Prairie; during diamond recovery at the De Beers Group Exploration Macro-Diamond Laboratory (GEMDL) in Johannesburg, RSA; and at the Saskatchewan Research Council Geoanalytical Laboratories.

The purpose of security procedures at the Gahcho Kué site was to set out the security duties, transportation and chain-of-custody processes around the handling, storage, documentation and overall security for the bulk sampling programs. Independent security contractors were employed at the Gahcho Kué site for the 2001, 2002, and 2008 large-diameter drill hole RC bulk sampling programs.

Mini-bulk samples collected during LDD RC programs were secured in closed bags with uniquely numbered single-use security seals at the Gahcho Kué site. The chain-of-custody was maintained through a series of consignment document sign-offs and tracking of the sample and security seal numbers from the initial collection of the sample, during transportation and to the final processing stages. Field consignment records of the bag and seal number, bag weight and condition were documented.

The mini-bulk samples were transported directly from Gahcho Kué to Grande Prairie in vans that were padlocked and affixed with uniquely numbered security tags via winter ice roads when possible or flown by commercial aircraft to Yellowknife and then transferred to closed vans for shipment to Grande Prairie.

The De Beers Grande Prairie bulk sample DMS processing warehouse is a locked facility, monitored by multi-camera video surveillance by contracted security personnel. DMS concentrate is fed into a pail within a locked cage. Once a sample is completed the pail is sealed using a glove-box arrangement. Concentrate cages and storage areas are double sealed and locked, requiring the presence of one senior GKJV person and one contracted security personnel for access. Records are kept of visitors to the facility. DMS concentrates are locked into sealed 20-L containers, each of which has a uniquely numbered, single-use seal affixed. These containers are stored inside a class-three demountable vault until periodic shipments are made to Johannesburg using a security contractor.

At the Saskatchewan Research Council Geoanalytical Laboratory macro-diamond recovery facility, GKJV security staff reviewed the security procedures and systems and made recommendations for improved camera surveillance and hands-off micro-diamond sorting by glove box. The recommendations were implemented.

The De Beers GEMDL facility in Johannesburg conforms to all the De Beers' Diamond Control Teams requirements for the secure processing of diamondiferous material. This involves access control, surveillance, hands-off processing and diamond control in accordance with the *South African Diamond Act* No. 56/86. The QPs are of the opinion that the security procedures and measures undertaken during the Gahcho Kué sampling programs are adequate.

12 DATA VERIFICATION

Data verification processes undertaken in the previous Technical Reports have been reviewed. The QPs are of the opinion that the data verification is adequate for use in the Report. A summary of data verification from these reports is provided below. Independent data verifications were undertaken on a number of occasions between 1999 and 2023:

- 1999, 2004, 2007 – Independent consultants made site visits to review quality assurance / quality control (QA/QC);
- 1999 – External consultant audit of the 1999 evaluation program;
- 2000 – Geology (petrological) peer review;
- 2004 – Geotechnical and hydrogeology consultants QA/QC site visit, internal and external mineral resource evaluation data base audits, geology (petrological) peer review, Gemcom® three-dimensional (3D) model peer review;
- 2007 – Internal and external petrological peer reviews; external verification of macro-diamond resource evaluation data set;
- 2008 – External review of 2003 Technical Report resource estimation and density (rock density) models;
- 2012 – Peer review of updated geological models and Mineral Resource estimates; external consultant reviews of geological solid models and zonal estimate for Tuzo Deep Lower;
- 2017 – Peer review of updated geological models and Mineral Resource estimates;
- 2019 – External review of updated geological models and 5034 NEX grade model and classification;
- 2021 – External review of resource modelling and estimation of the Tuzo deposit and geological and resource model for Wilson; and
- 2022-2024 – Peer reviews of updated geological models and Mineral Resource estimates.

Data storage and verification procedures are adequate to support the geological interpretations and mineral resource estimation. All drilling and sampling data is stored in the MinSAMP system's SQL database. Geological models are stored in Gahcho Kué GEMS® SQL server project. The MinSAMP system database is currently stationed on a Microsoft Windows Server/SQL 2008-R2 (64-bit) on the GK mine site (dynamic data) and corporate office (projects/sites in 'closed/inactive' and 'care and maintenance') data centres. Each have appropriate access security, and are on daily, weekly and monthly backup schedules and on/off-site storage for disaster recoveries. Most paper files have been scanned and stored digitally. The Mine database undergoes periodic internal verification as well as periodic audits by external reviewers.

13 MINERAL PROCESSING & METALLURGICAL TESTING

13.1 Metallurgical Testing

Mineral processing and metallurgical testing supports the mineral recovery and process plant design and was undertaken by ADP Projects (Pty) Ltd, Krupp Polysius AG and De Beers. Mineral processing and metallurgical testwork undertaken on from the Gahcho Kué kimberlites is summarized below. The QPs are of the opinion that the metallurgical testwork was adequate for use on the design of the process plant.

13.1.1 2002

Sample and mineralization characteristics were evaluated from a combination of the 2002 ODS results, and suitable information from the treatment of the LDD chips at the De Beers Grand Prairie facility during the 2000 (5034, Hearne, Tuzo and Tesla) and 2001 (5034 and Hearne) Gahcho Kué evaluation programs. This included dense media separation (DMS) and granulometry data.

Examination of the DMS operating parameters indicates that data derived from the sample treatment plant are reliable. The information is summarized in Table 13-1 and Table 13-2.

Preliminary data from both the ore dressing studies (ODS) and the LDD chip processing indicated that the kimberlite has a low DMS yield that should result in easy DMS operations and a relatively small recovery plant. The fines content presented in Table 13-2 is the total amount of fines produced during both drilling and scrubbing operations. As such, this is not considered representative of the fines that would be generated in a production plant.

Table 13-1: Mineralization Characteristics 2000 (Summary)

Pipe	Density (g/cm^3)	Total % (-1.0 mm)	DMS Concentrate (% of DMS Feed)	X-ray Yield (%)
5034	2.59	49.8	0.40	3.10
Hearne	2.59	49.8	0.38	2.61
Tuzo	2.40	65.7	0.31	4.05
Tesla	2.39	58.0	0.20	2.23
Average	**2.39**	**55.2**	**0.36**	**3.00**

Source: JDS (2014)

Table 13-2: Mineralization Characteristics 2001 & 2002 (Summary)

Pipe	Total % (-0.1 mm)	DMS Concentrate (% of DMS Feed)	
		2001 Grande Prairie	2002 ODS (Theoretical Yield Ep = 0.08)
5034	42.5	0.42	0.03
Hearne	54.7	0.28	0.09
Average	**46.7**	**0.37**	**Not Applicable**

Source: JDS (2014)

A significant amount of internal granite dilution can be expected at times. This could have an impact on liberation (granulometry) and result in accelerated wear.

The kimberlite content of the expected run-of-mine (ROM) feed based on these data is widely variable but on average is higher than 90%.

Information relating to the x-ray properties of diamonds was available from the evaluation programs and from the 2002 ODS. The ODS included magnetic susceptibility testing of the diamonds and gangue and the development of a luminescent profile of the gangue material. The recoverability of diamonds by x-ray sorting based on stones recovered during the evaluation programs, is summarized in Table 13-3. The number of stones larger than diamond sieve #12 was small, and the results were therefore biased toward the luminescence intensity (LI) values of the small stones. Generally, the large stones (>#12) showed good luminescence, while the smaller ones were more problematic. Recovery of small sizes would require very sensitive diamond sorting equipment, that is, the x-ray sorting equipment will need to be set at a lower than normal threshold setting, which could have an impact on diamond recovery.

Luminescence data obtained for the gangue material show that high yields can be expected when X-ray recovery technology is used to process DMS concentrate. Yields for the finer size fractions are estimated to be in the order of 0.3%. Excessively high yields can be expected for the coarser size fractions (+8 mm material). The data also showed that a yield in excess of 44% could be expected when processing material from certain areas of the kimberlite pipes. The actual diamond recovery may vary compared to the testwork.

Table 13-3: Diamond Recovery Characteristics (Evaluation Process)

Pipe	% Recovery Characteristics of 0.25 Volts
5034	90.8
Hearne	94.3
Tuzo	90.3
Tesla	Not Applicable

Note:
The 0.25 V is a threshold setting on an X-ray machine. When a diamond luminesces, the light is converted to an electrical signal, and if the signal is above 0.25 V the machine will eject the diamond and surrounding particles to the concentrate chute.
Source: JDS (2014)

All the diamonds samples have a magnetic susceptibility less than 20 x 10-6 cm^3 and thus could be recovered using high intensity magnetic separation. Magnetic susceptibility results showed that of the diamonds tested, 13% were diamagnetic and would not be recovered in using high intensity magnetic separation; thus, other methods are required to recover those stones. With the use of an NdFeB magnet, gangue mass reductions of up to 81.95% were measured.

13.1.2 2005

Testwork, as shown in Table 13-4, was completed from 2002 to 2005.

Table 13-4: Testwork Summary

Testwork Location	Tests Undertaken / Data Generated
Gahcho Kué LLD (Grande Prairie processing facility) Diamonds sorted at the GEMDL (South Africa)	Particle size distribution DMS concentrate yield Diamond recovery Diamond size distributions Granulometry
DebTech (South Africa)	Diamond and gangue luminescence Diamond and gangue magnetic susceptibility Recovery plant yield Drop weight data Slimes characterization Whole ore desimetric analysis Rock mechanics Preliminary scrubbing tests
Patterson and Cooke Consulting Engineers (South Africa)	Slime slurry rheology and pumping
Krupp Polysius (Germany)	High-pressure rolls crushing
Kawasaki (EarthTechnica, Japan)	Cone crushing

Source: JDS (2014)

Testwork findings were as follows:

- Gahcho Kué kimberlites exhibit similar impact breakage to their associated granite rock. The impact breakage characteristic of these samples can be classified as medium to hard; therefore, crushers utilizing higher input energies such as 1 kWh/t or higher may be required;
- Gahcho Kué material is resistant to comminution by abrasion as indicated by ta values of 0.27 to 0.52, where ta is the measure (index) of resistance to abrasion breakage. This

indicates that a scrubber or a mill could be utilized as a ‘washer’ rather than a comminution unit;

- Laboratory scrubbing results indicated that comminution attributed to scrubbing would generate very low fines, less than 10%;
- Polysius testwork generated design data for application of a high-pressure rolls crushing (HPRC) unit either in a secondary or tertiary crushing mode. The required product size for treating approximately 350 t/h of a mixture of plant feed (-50+30 mm) and DMS rejects (-30+6 mm) will be achieved by a truncated feed size at higher press force, 3.4 N/mm^2 and with specific energy of 3.0 kWh/t;
- EarthTechnica crusher testwork generated design and scale-up data for secondary crushing application using a Kawasaki type crusher. These data were generated for a blend of Hearne and 5034 samples. However, it was established that if these kimberlite bodies are treated separately it would result in similar trends within certain limits. This conclusion was based on the individual drop-weight tests (DWT) and rock mechanics results provided to their technical team by GTS Metallurgy;
- Three Kawasaki crusher options, such as KM3015Z, KM3682Z and KG4015Z, were investigated for scale-up;
- DMS yields should be relatively low, potentially less than 1%, for both 5034 and Hearne kimberlite bodies. The optimum split size based purely on the lowest calculated yield was found to be 8 mm. A split DMS was recommended for the conceptual Gahcho Kué process flowsheet;
- Co-thickening has benefit in terms of reagent consumption, water savings and generation of high-density slurry. A high-density thickening unit with picket rakes would be necessary to assist with the compaction of the mud-bed to achieve higher-density slurry;
- The results from the ore dressing study showed that the Gahcho Kué material is similar to other kimberlites processed in Southern Africa with respect to comminution and densimetric profiling;
- Normal wear rates are expected for the processing of the Gahcho Kué material through standard diamond processing comminution devices such as cone and high-pressure roll crushers. DMS yields can be classed as “medium to low” with less than 1% yield being obtained for both the 5034 and Hearne kimberlites;
- One problematic area that was identified by the ore dressing study was the large amount of luminescent material that reported to the DMS sinks fraction. This material was subsequently tested on a dual-wavelength X-ray machine to determine the probable yields that could be obtained from a production unit. Initial indications were that up to 90% of the luminescent gangue material could be rejected; and

- High flocculant consumption rates were obtained for treatment of slimes where the grit fraction had been removed. Flocculant consumption for co-thickened slurries were approximately half that of the slimes only fraction.

13.1.3 2006

Conceptual use of grease recovery technology was explored during 2006. Grease technology was considered to have advantages over the earlier use of x-ray technology at Gahcho Kué because grease technology typically has the following:

- High efficiency, typically greater than 95% diamond recovery for -3 +1.5 mm material and 97% recovery for -6 +3 mm material;
- Low capital and operating costs;
- Low yields of 0.05% for -3 +1.5 mm material and 0.01% for -6+3 mm material;
- High throughputs, typically 500 kg/h for -3 +1.5 mm material and 1,000 kg/h for -6 +3 mm material;
- Small footprint; and
- Fully enclosed for security of product.

The conceptual recovery plant designed in 2006 was based on grease recovery for -6 mm material and X-ray recovery for +6 mm material. To remove non-diamond material, degreased -6 mm concentrate was proposed to be chemically treated using hot molten caustic, and +6 mm X-ray concentrate to be hand-sorted.

13.1.4 2007

Samples of Gahcho Kué Tuzo gangue were characterized at DebTech for amenability to x-ray sorting and magnetic separation technologies. The samples were composed of material fractions, -8 +3 mm and -3 +1.18 mm. The respective size fractions were separately subjected to x-ray excited luminescence intensity, as well as mass magnetic susceptibility measurements.

Tuzo gangue was found to be amenable to x-ray sorting. Magnetic susceptibility data for the Tuzo drill core samples and diamonds indicate that magnetic sorting to reduce the feed to recovery can be applied.

13.1.5 2011 – 2013

A review of all testwork completed was undertaken by De Beers Technical Services to establish the final design criteria for the process plant design.

13.2 Mineral Processing

As a producing mine the Gahcho Kué Diamond Mine operates a full scale and a permanent process facility which treats run-of-mine kimberlite material to produce a rough diamond concentrate. The Gahcho Kué process plant has been operating continuously since commissioning in September 2016. To date the plant has treated a mix of various lobes from the 5034, Hearne and Tuzo deposits. Section 17 further describes the process plant design methodology.

Two production scale bulk samples known as “revenue samples” were treated independently during 2017 to provide insights into the size, quantity and quality of stones recovered from specific lobes in 5034. The samples are discussed in further detail in Section 14.

14 MINERAL RESOURCE ESTIMATES

14.1 Introduction

The baseline estimation and classification of the mineral resources was completed by AMEC and summarized in the "Gahcho Kué Kimberlite Project NI 43-101 Technical Report" (AMEC 2009). Additions and modifications to the AMEC mineral resource for the Tuzo Deep mineral resources deeper than 300 metres below surface (mbs) elevation are summarized in the "Update of the Mineral Resource Estimate for the Tuzo Kimberlite, Gahcho Kué Project, Northwest Territories, Canada NI 43-101 Technical Report" (Mineral Services 2013) as a result of an additional 'Tuzo deep' drilling program undertaken in 2012.

The (AMEC, 2009) and (Mineral Services, 2013) resource statements were compiled into a single resource estimate for the 2014 (NI) 43-101 Technical Study (JDS 2014).

The geological resource block models were updated by Waldegger (2018), Donovan (2019), Gostlin and Donovan (2021) and Donovan (2022, 2023, 2024) using additional diamond drilling and mining information. Modelling was updated in Leapfrog and completed in GEMS. All databases were constructed and maintained in the GEMS modelling system. Geological wireframes were built using GEMS modelling tools with the exceptions of Southwest Corridor, Hearne Corridor and Northeast Extension, which were built in the Leapfrog® modelling System and imported, to GEMS for confirmation and mine project usage. Mineral resource estimates were completed in both GEMS and Isatis. Open-pit shells for use in Resource declaration were developed in Whittle and Deswik.

Large diameter drilling was used to collect samples of kimberlite for grade and diamond value modelling. Macro-diamonds[1] from the LDD were used to estimate local grades on 5034 West and Centre lobes and Hearne Pipe. Grade estimations for these pipes were completed using variography and kriging methods. Diamonds from this drilling were also used to confirm diamond size and value data for all lobes and pipes. Micro-diamonds[2] from drill core were used to create local estimates of grade for the 5034 North-East Lobe and Tuzo Pipe. Micro-diamonds are stones (less than 0.5 mm) recovered from the dissolution of drill core using a caustic fusion process. These results were used for local estimation (kriging) into blocks (25 m x 25 m x 12 m) and then converted to carats per hundred tonnes above a commercial bottom cut-off using a micro−macro model of grade as a function of size. Micro-diamonds were used in these cases primarily due to the difficulty of obtaining adequate macro-diamond samples for the purposes of local resource

[1] Macro-diamonds for the purposes of this report are those stones recovered from LDD samples by a treatment process that involves crushing and screening.

[2] Traditionally, stones retained on a 0.5 mm square-mesh screen after sieving are referred to as macro-diamonds, while stones that pass through the sieve are referred to as micro-diamonds. For the purposes of this report, micro-diamond results refer to stones recovered from diamond drill core subjected to acid digestion or caustic fusion. Strictly speaking, these results may contain both micro- and macro-diamonds. The micro-diamond treatment process involves dissolving the kimberlite in an acidic or caustic solution and recovering any diamonds released above a specified bottom cut-off (usually 75 µm or 106 µm). The micro-diamond results can be used to estimate the grade in carats per tonne (c/t) of a kimberlite above a given cut-off. Estimates of grade using micro-diamonds must be adjusted to reflect a realistic bottom cut-off (e.g., 1.0 mm), and may need adjustment to reflect differences in liberation and recovery in a commercial treatment plant and the micro-diamond treatment process.

block estimation. In these cases, the available macro-diamonds were used for valuation purposes and for calibration of micro-diamonds models.

Micro-diamonds from drill core were used to create global estimates of grade for the 5034 North and South pipes. Zonal estimates of grade (grade / rock type) were completed in 2013 for Tuzo Deep.

Density modelling was completed using dry bulk densities. Spatial analyses were completed using dry densities per unit for the combined lobes and bulk densities were block estimated by kriging function.

Appropriate techniques were used to ensure calculation and reporting of the diamond mineral resource at a +1 mm lower cut-off. The mineral resource was adjusted appropriately for expectation of main treatment plant recoveries.

To establish a reasonable cut-off grade and assess reasonable prospects for economic extraction to support declaration of the mineral resources, average diamond pricing was applied to the resource, and Whittle software was used to establish a series of pit shells.

14.2 Mineral Resource Estimation

Chuchra (2013) and Ellemers (2013) updated the three dimensional geological and block models following the completion of the 2013 Tuzo Deep model. The geological and block models were further updated by Waldegger (2018) and Donovan (2019) using additional diamond drilling and mining information. A revised model for Tuzo based on reinterpretation of internal units (Kurzslaukis and Pell, 2021) was completed by Gostlin and Donovan (2021) with Wilson and portions of NEX (Pell and Kurzslaukis, 2020, Kurzslaukis et al., 2019) updated by Bell (2021), Gostlin and Donovan (2021) and Donovan (2022, 2023, 2024). Modelling was updated in Leapfrog and completed in GEMS and includes all available resource information including the Tuzo Deep kimberlite (from 360-564 mbgl), 5034 North and East Lobe indicated (300-400 mbgl), 5034 Southwest Corridor, recently classified 5034 Northeast Extension and Hearne Corridor. Rock types in the Gahcho Kué Mine are described in detail in Section 7.1.2.6.

14.2.1 Grade Estimation

The Gahcho Kué Mine resource grade has been estimated in 2004, 2008, 2012, 2013, 2018, 2019, and 2021 (MPD, 2010; Ellemers, 2013; Bush, 2018: Bush, 2019b, Bush, 2021a & b). Changes in the estimates are largely due to changes in the geological model and estimation methodology as well as additional drilling to extend the resource (Southwest Corridor in 2018 and Northeast Extension and Hearne Corridor in 2019). Additional changes relate to updated emplacement and geological interpretation (Hearne in 2019 and Tuzo in 2021).

A global estimate is one value for the entire kimberlite, a zonal estimate is one value per rock type, and a local estimate is kriged into mining blocks (Table 14-1). For Gahcho Kué, a mining block is defined as 25 x 25 x 12 m.

Table 14-1: Grade Estimate Types

Deposit	Lobe	Estimation Type
5034	West	Local
	Centre	Local
	Northeast	Local
	North Pipe	Global
	Southwest Corridor	Local
	NE Extension	Local
Hearne	North	Local
	South	Local
	Corridor	Zonal
Tuzo	0-360 mbgl	Local
	360-564 mbgl	Zonal

Source: De Beers (2019)

Local mining block estimates for grade were completed in the West and Centre Lobes of 5034 and the Hearne kimberlite using macro-diamonds recovered from large diameter drilling. Kriging was completed in two passes. In the first pass the search radii were 75 x 75 x 50 m in the X, Y and Z directions. In the second pass, the search radii were increased to inform all blocks within the model (MPD, 2010). West Lobe grade was updated in 2018 with the new data from the run of mine samples. After re-establishing geological continuity through spinel geochemistry and size frequency distribution continuity was confirmed through sample support analysis, the grade was factored by the reconciled sample grade vs grade model. Original model spatial variability was retained (Ellemers et al., 2017a; and Ellemers et al., 2017b).

A local block estimate was completed for the classification of Southwest Corridor using micro-diamonds recovered from diamond drilling as well as macro-diamonds from a focused mining sample. Two-pass ordinary kriging was used with a third pass completed in order to fill remaining blocks. For the HK units a 75 x 75 x 24 m (X-Y-Z) search ellipse in the first pass and second pass extended to 100 x 100 x 48 m. For VK units a 60 x 60 x 24 m search ellipse in the first pass and second pass extended to 120 x 120 x 48 m. Search ellipse radii were chosen based on the geostatistical parameters of each unit (Bush, 2018).

A local block estimate was also completed for the Northeast Extension (NEX). Micro-diamond data from diamond drilling of NEX as well as micro-diamond and macro-diamond data from North Lobe were applied to produce the final estimated values. Two-pass ordinary kriging was used with remaining blocks populated via grid filling. For the HK unit a 71 x 71 x 24 m (X-Y-Z) search ellipse on the first pass with a 107 x 107 x 36 m ellipse on the second pass, both with 90 m ranges. For the HKt unit a 71 x 71 x 48 m (X-Y-Z) search ellipse on the first pass with a 107 x 107 x 60 m ellipse on the second pass, both with 80 m ranges. For the Tk-TKt unit a 71 x 71 x 36 m (X-Y-Z) search ellipse on the first pass with a 107 x 107 x 60 m ellipse on the second pass, both with 55 m ranges. Search ellipse radii were chosen based on the geostatistical parameters of each unit (Bush, 2019, 2021a, b).

Local block estimates were completed for all rock types in Hearne. Microdiamond and macrodiamond data were used to produce the estimated values. Two-pass ordinary kriging was used in most cases followed by grid infill where needed. HKG2 and TKG2t used a 36 x 36 x 24 m (X-Y-Z) search ellipse on the first pass with a 71 x 71 x 36 m ellipse on the second pass, both with 81 m ranges. HKN also used a 36 x 36 x 24 m (X-Y-Z) search ellipse on the first pass and 71 x 71 x 36 m ellipse on the second pass with 66 m ranges. TKN and TKS use a single pass of 107 x 107 x 36 and a 99 m range followed by grid filling.

The grade models for 5034 Center and 5034 Northeast were updated in 2017 with the new data from the run of mine samples. After re-establishing geological continuity through spinel geochemistry and SFD continuity was confirmed through sample support analysis, the grade was factored by the reconciled sample grade vs. grade model. Original model spatial variability was retained (Ellemers et al., 2017a; and Ellemers et al., 2017b).

In 2021, a complete reinterpretation of the Tuzo emplacement and geological models resulted in an updated estimate. This resulted in local estimates for each rock type defined within Tuzo. Microdiamonds from the various drilling campaigns as well as macrodiamonds from the 2008 LDDH program and two recent focused mining samples were used to inform the estimates. Multi-support kriging (MSK) was completed for each of the rock types. TKB required two passes using search ellipses of 36 x 36 x 24 m and 71 x 71 x 24 m respectively. TKtH required two passes using search ellipses of 36 x 36 x 36 m and 71 x 71 x 48 m respectively. HK supported only one pass using a search ellipse of 71 x 71 x 48 m. CRBK-U required two passes using search ellipses of 36 x 36 x 36 m and 71 x 71 x 48 m respectively while CRBK-L required two passes using search ellipses of 71 x 71 x 24 m and 107 x 107 x 48 m respectively. Any un-estimated block remaining after the final pass were updated with moving average grid filling (Bush, 2021a).

The estimates for the Wilson rock types were updated in 2021 from zonal to local estimates using microdiamonds from delineation diamond drilling and macrodiamonds from two focused mining samples. Focused mining sample results were employed by discretization of multiple pseudo-microdiamond samples within the corresponding mined volume. Ordinary kriging was used to estimate grade in each of the Wilson rock types. Both HK and VK were estimated in two passes with search ellipses of 36 x 36 x 36 m and 71 x 71 x 48 m respectively and grid infilling of the remainder (Bush, 2021b).

Validation of the mineral resource estimates included visual inspection, comparison of statistics and analyses to detect spatial bias and smoothing.

All databases were constructed and maintained in the GEMS® and Leapfrog Geo modelling system. Geological wireframes were built originally using GEMS® modelling tools with Leapfrog® Geo assuming more of the modelling function starting in 2018. All models are now completed solely in Leapfrog Geo and imported to GEMS® for confirmation, volumetrics, and mine project usage. Mineral resource estimates were completed in both GEMS® and Isatis®. Open-pit shells for use in Resource declaration were developed in Whittle® and Deswik®.

14.2.1.1 Composite Preparation (CP)

The adjusted sample macro data were imported into GEMS where they were bench composited to 12 m lengths while honouring geology. The cut-off for the minimum length of composites to be used in the estimation was investigated by comparing the average cp/m^3 value of composites at several cut-offs to ensure there was no bias in the selection of composite length. The difference in the average cp/m^3 value between all composites, and those where bottom cut-offs were applied, is negligible. To maximize the use of available grade information, a minimum length of 6 m was imposed.

14.2.2 Bulk Density Estimation

Several programs of density sampling have taken place throughout the development of the Gahcho Kué Mine. Programs prior to 2004 were noted to contain samples with no indication of dry density. These samples have been superseded by additional programs from 2004, 2005, 2006, and 2007 in which industry standard were applied for measuring both wet and dry densities as well as stringent protocol for QA-QC. For 2004 and 2005 programs the method applied was coated immersion followed by drying and reweighing of the samples producing both wet and dry densities (Waldegger, 2005). 2006 and 2007 programs followed De Beers MRM protocol. This consisted of sampling of core, 10 to 15 cm in length, at intervals of 6 m in kimberlite and 12 m in country rock, selected to be representative of local geology seen in core. Samples were collected immediately at the drill and plastic wrapped to retain in-situ moisture. Wet and dry bulk densities were determined using coated immersion (MPD, 2010).

Density modelling for the Gahcho Kué Mine was completed using dry bulk densities calculated from 2004 forward with the exception of areas where no dry density data was available. At these locations wet densities were used to predict dry density. Spatial analyses were completed using dry densities per unit for the combined lobes and bulk densities were block estimated by kriging function (MPD, 2010).

With the 2019 update to the Hearne geological model new density estimates were completed for all lithologies. These were done using the previously available data along with some additional data from holes drilled in 2018. Densities were estimated by ordinary kriging (Bush, 2019a). The 2021 update to Tuzo was completed using original density data but with a modelled conversion factor to convert historical wet density data to a usable ‘dry’ density value. Wilson density estimation used current best practice from the 2019 Wilson delineation campaign.

14.2.3 Assortment Modelling

The 5034, Hearne and Tuzo kimberlites have been divided into several significant geological units, representing a range of emplacement environments. Two assortment models and two SFD models are used for Tuzo following the focused mining of 2020 defining TKtH and Tuzo (all remaining rock types). The 5034 body is modelled with seven distinct assortments and seven separate SFD models. The Northeast HK, Northeast HKt, Northeast TKt, Center, West, and Southwest Corridor each have individual SFD models and assortments. Hearne is modelled with two distinct assortments and two district SFD models defining Hearne Main and Hearne North. Wilson is also modelled with two assortments and two SFD models defining the HK and VK units.(Table 14-2).

Table 14-2: Size Frequency Distribution and Assortment Models (1-3)

Sieve	5034 Centre	5034 West	5034 NE	5034 NE NEX HK	5034 NE NEX HKt	5034 NEX TKt	5034 SW Corridor	Hearne - Main	Hearne - North	Tuzo	TKtH	Wilson - HK	Wilson - VK
	% Carats	% Carats	% Carats	% Carats	% Carats	% Carats	% Carats	% Carats	% Carats	% Carats	% Carats	% Carats	% Carats
+23	1.24	0.85	0.74	0.74	0.42	0.42	0.68	0.74	0.66	0.49	0.51	0.48	0.57
+21	2.43	2.04	1.58	1.58	1.24	1.14	2.32	1.71	1.04	0.92	1.14	1.03	1.23
+19	4.39	3.59	2.97	2.97	2.81	2.50	3.27	3.66	2.48	2.19	2.58	2.08	2.33
+17	3.03	2.58	2.17	2.17	2.05	1.86	2.51	2.52	1.98	1.74	1.86	1.27	1.50
+15	2.11	1.77	1.57	1.57	1.48	1.35	1.70	1.86	1.46	1.30	1.36	0.92	1.06
+13	8.36	6.59	6.32	6.32	6.21	5.64	6.65	6.78	5.87	5.38	5.60	3.88	5.03
+12	6.77	5.06	4.72	4.72	4.84	4.99	5.46	5.24	4.80	4.45	4.67	3.49	4.48
+11	13.97	10.55	9.89	9.89	10.44	11.19	9.91	11.13	10.58	10.00	10.36	8.23	10.25
+9	18.40	15.56	15.29	15.29	16.78	18.19	15.00	15.74	16.70	16.44	16.61	16.06	17.49
+7	13.83	13.13	12.90	12.90	13.88	15.01	12.62	13.41	13.60	14.18	14.10	14.12	14.81
+6	11.29	13.33	14.26	14.26	15.01	15.78	13.35	12.90	14.19	15.58	15.47	15.71	15.48
+5	9.39	13.91	14.29	14.29	14.05	13.75	14.06	13.53	15.02	15.99	15.33	16.14	14.26
+3	4.44	9.56	11.58	11.58	9.67	8.03	10.69	9.29	9.96	10.28	9.44	13.91	10.12
+2	0.35	1.46	1.73	1.73	1.12	0.18	1.80	1.48	1.65	1.08	0.93	2.67	1.39
+1	-	-	-	-	-	-	-	-	-	-	-	-	-
-1	-	-	-	-	-	-	-	-	-	-	-	-	-
Total SSV	**100**	**100**	**100**				**100**	**100**		**100**			**100**

Source: De Beers (2023)

14.2.4 Resource Classification

The Gahcho Kué Mine mineral resource was classified by the Mineral Resource Classification Committee (MRCC) using the De Beers Mineral Resource Classification Scorecard (MRCS). The scorecard system is based on completion of key questions that define the level of confidence in one of the five elements that comprise a diamond resource estimate: geology, volume, grade, density, and revenue. De Beers Canada resources and reserves are classified according to the Canadian Institute of Mining and Metallurgy Resources and Reserves Standards.

In classifying the mineral resource, qualitative levels of confidence in the geological model and the estimates made up of volume, grade, density, and average diamond value were assessed. The assessment also considers data integrity, methodology and adherence to procedures. The primary considerations in arriving at a resource classification are the geological model, the quality and density of sampling, and the method of estimation used. Diamond revenue (US$/ct) estimation involves two key parameters, size frequency distribution and assortment. The former defines the size range and proportion of diamonds per size range, while the latter relies on modelling the diamond value $/ct/sieve class for each geological facies based on the actual sample grades. The combination of these considerations and the degree of confidence in each will dictate the resource classification.

The Gahcho Kué Resource was classified between the 23 January 2009 and the 3 March 2013 with Southwest Corridor added in October 2018, the Northeast Extension added in July 2019 and Wilson added in September 2021 (Table 14-3). Tuzo was reclassified in Oct 2021 based on updated emplacement, modelling, and estimates. The 5034 NE, 5034 W, 5034 C, 5034 SWC, 5034 NEX to 354 mbgl, Tuzo to 360 mbgl, and Hearne to 204 mbgl resources are classified as Indicated. The 5034 NEX below 354 mbgl, Hearne North 204-318 mbgl, and Tuzo 360-564 mbgl resources are classified as Inferred. All Resource classifications were ratified and approved by Dr. A. Grills or Dr. K. Gostlin as the classification Competent Persons. The reference elevation (Lake Surface) is 420.9 masl. An amendment to the classification of the 5034 NE from 300-400 m below ground level(mbgl) was granted in 2014. As of the end of December 2013, 5034 NE below 300 mbgl was documented as not classified and therefore comprised part of the Gahcho Kué deposit statement. However, it was determined that in 2008, this formed part of the original classification of 5034 and the amendment was requested and granted (Ratshitanga, 2014).

Table 14-3: Resource Classification Summary

Mine Resources	Geology	Grade	Volume	Revenue	Density	Score	Classification	Date Classified	Competent Person
5034 NE	238	232	163	214	78	77	Indicated	2/9/2009	Dr. A. Grills
5034 WC	204	208	151	222	72	71	Indicated	1/23/2009	Dr. A. Grills
Hearne 0-204 mbgl	216	211	155	222	75	73	Indicated	1/23/2009	Dr. A. Grills
Hearne 204-318 mbgl	172	189	123	193	63	62	Inferred	6/16/2009	Dr. A. Grills

Mine Resources	Geology	Grade	Volume	Revenue	Density	Score	Classification	Date Classified	Competent Person
Tuzo 0-360 mbgl	246	237	162	234	74	79	Indicated	10/22/2021	Dr. K. Gostlin
Tuzo 360-684 mbgl	201	198	130	159	61	62	Inferred	10/22/2021	Dr. K. Gostlin
5034 Southwest Corridor	240	219	158	207	81	76	Indicated	10/5/2018	Dr. K. Gostlin
5034 NE Extension	255	235	160	224	80	80	Indicated	7/24/2019	Dr. K. Gostlin
5034 NE Extension	205	197	136	206	70	68	Inferred	7/24/2019	Dr. K. Gostlin
Wilson 0-240 mbgl	243	205	160	235	71	76	Indicated	9/29/2021	Dr. K. Gostlin

Source: De Beers (2023)

The classification risk for 5034 is its small size and the irregular "root zone" nature of the body that may affect volume estimates. This is mitigated somewhat by the volume of the body that has been mined and the increased understanding. The diamond parcel available for revenue estimation from 5034 is well in excess of 3,000 carats that has traditionally been considered adequate for average price calculations. Production results during LoA have resulted in the need to update all revenue models.

The North Pipe of 5034 has been incorporated into the more recently classified Northeast Extension. Remodelling has affected the volume given the large amount of additional information in the region. However, much of the former North Pipe was converted by transfer. Northeast revenue data was applied to Northeast Extension following significant petrological analysis identifying continuity. However, this was updated in 2022 with results of bulk assortment samples in Northeast that are now applied, both SFD and assortment, to the various lithologies of Northeast Extension.

The South Pipe of 5034 has been incorporated into the Southwest Corridor for the classification mentioned above. This volume has been included by transfer by classification.

The classification risk for the Hearne kimberlite is the small size of the body. Simulation studies have shown that sample data for grade are sufficient to define an Indicated Mineral Resource above 204 mbgl. The number of samples falls off rapidly with depth. The macro diamond parcel is in excess of 2,700 carats and is sufficient for both size frequency distribution and assortment analysis. This has been significantly augmented by continuous mining including four focused mining samples and a significant amount of well-reconciling production data.

Tuzo was entirely remodelled and re-estimated in 2020 and 2021. The Tuzo body has a geologically complex internal geology and carries significant amounts of dilution that is irregularly distributed throughout the body. An Indicated classification was applied for all parts of the Mineral Resource above 360 mbgl. Inferred classification was applied for all parts of the mineral resource between 360-672 mbgl based on confidence and distribution of data at these depths. The Tuzo body is modelled to a depth of 746 mbgl where material below 672 mbgl is included in mineralization.

The Wilson body has been classified to a depth of 181 masl (240 mbgl) while leaving the volume below this as mineralization class. Some grade risk has been identified due the small size and extents of sampling. However, risk is limited by the minimal contribution to plan and the exclusion of material below 181 masl.

14.3 Model and Estimate Validation

Gahcho Kué Mine has developed Resource and Reserve reporting process flow maps to ensure the accuracy in the generation and reporting of Resource and Reserve related information. The following parties conduct reviews:

1. On-site by the De Beers CPs of Resource and Reserve;

2. Offsite by De Beers Canada Calgary Support Centre;

3. Offsite by specialists within De Beers Group including the Mineral Resource and Reserve Committee Members; and

4. Offsite by ZStar specialists with international expertise in grade/value and volume modelling.

Data informing the earth and resource models is checked on-mine by Production Geologists and validated by the Resource Geologist. The geological model was updated in 2023 using the abundance of data from blast holes and face maps collected during regular mining operations.

Existing resource estimates are managed and maintained on the Gahcho Kué SharePoint and on-mine systems by the Resource Geologist. New resource estimate updates (Ellemers, 2017a: and 2017b; Bush, 2018; Bush, 2019a; Bush, 2019b; Bush 2021a & b) were incorporated to the resource model.

As the block models are transferred from GEMS® into mining software for the purpose of mine planning and scheduling, the GEMS® model is compared to the mining model to ensure that the material reported in mining is accurately representing the GEMS® model and that any error between the software packages is identified.

Spatial checks were conducted on the exclusive resources using the spatial checking template provided by Group MRM to confirm the remaining Mineral Resources after conversion to Ore Reserves. These checks were conducted by the Gahcho Kué Resource Geologist and reviewed by the Resource CP, Reserve CP and technical specialists.

14.4 Mineral Resource Summary

The Gahcho Kué Mine resources are summarized in Table 14-4. In order to comply with the Reasonable Prospects of Eventual Economic Extraction (RPEEE), classified resources of an inferred level of confidence or higher were subject to a preliminary evaluation in order to test their potential economic viability in the future. This test assumed a revenue factor of 1.6 x revenue, and mining, treatment and sales cost in 2023 constant dollars, and relied on an independent Whittle run in order to define the potential open pit limit. The revenue to which the factor of 1.6 was applied is the RPEEE 2023 3+9 Forecast Price Book at RV (96% of SSV as per the JV agreement) at a strict bottom cut-off of 1.1 mm plus incidentals.

Those resources that passed the open pit or underground RPEEE test were then considered valid resources, included in the Resource Statement and were available for consideration for Reserve conversion. Those resources that did not pass the RPEEE test were reverted to deposit levels of confidence and reported there. In this case, a portion of the estimate was reverted to deposit. Note that the RPEEE evaluation was undertaken using the same bottom cut-off as stated in the Resource Statement i.e., 1.0 mm.

The QPs are of the opinion that the resource estimate presented provide an accurate and complete basis for state of the resource as of April 22, 2024. Resources are inclusive of mineral reserves.

Table 14-4: Mineral Resource Summary (April 22, 2024)

Resource	Classification	Tonnes (Mt)	Carats (Mct)	Grade (c/t)
5034	Indicated	6.9	15.0	2.16
	Inferred	1.4	2.5	1.82
Hearne	Indicated	0.6	1.2	1.95
	Inferred	1.5	2.8	1.82
Tuzo	Indicated	11.5	18.1	1.57
	Inferred	10.3	18.4	1.78
Wilson	Indicated	2.3	2.1	0.89
	Inferred	-	-	-
Subtotal (In-Situ)	**Indicated**	**21.4**	**36.4**	**1.70**
	Inferred	**13.3**	**23.7**	**1.79**
Stockpiles	Indicated	3.3	2.4	**0.73**
	Inferred	-	-	-
Grand Total Exclusive Resource	**Indicated**	**24.7**	**38.8**	**1.57**
	Inferred	**13.3**	**23.7**	**1.79**

Notes:

1. Mineral Resources are reported at a bottom cut-off of 1.0 mm.
2. Mineral Resources are constrained within an optimized pit shell using a 1.6 revenue factor. Prices used to determine optimal pit shell varied by facies and ranged from 71 US$/ct to 146 US$/ct with an exchange rate of 1.30 C:USD. Process recovery of the diamonds was assumed to be 100% Operating costs used to determine the optimal pit shell include an open pit mining cost of 4.1 C$/t mined and a processing cost of C$72.0/t milled.
3. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.
4. Tonnage quoted as dry metric tonnes.
5. Resources are inclusive of indicated tonnages converted to Probable Reserves.
6. Resources have been depleted of any material that was processed prior to and including April 22, 2024.
7. MPD's attributable portion of mineral resources is 49%.

Source: De Beers (2024)

The QPs have reviewed the resources and compared to those stated in the 2022 (NI) 43-101 Technical Report and 2023 modelling work provided by De Beers. Figure 14-1 summarizes differences in resource carats from December 2021 to April 2024 that capture the following changes in resource estimates:

The opening resource balance at the start of 2022 was 68.4 million carats.

- Depletions – Mine depletions resulted in a decrease 13.8 million carats from the Inclusive Resource:

    - Economic assumptions - A new RPEEE test was applied (Ledoux, 2023a). Indices and costs were updated. The year-on-year change resulted in a decrease of 380 thousand carats. This breaks down to an increase of 100 thousand carats indicated and an increase of 110 thousand carats of inferred material in 5034, loss of 333 thousand carats in Tuzo inferred, a gain of 1 thousand indicated and loss of 258 thousand inferred carats in Hearne;

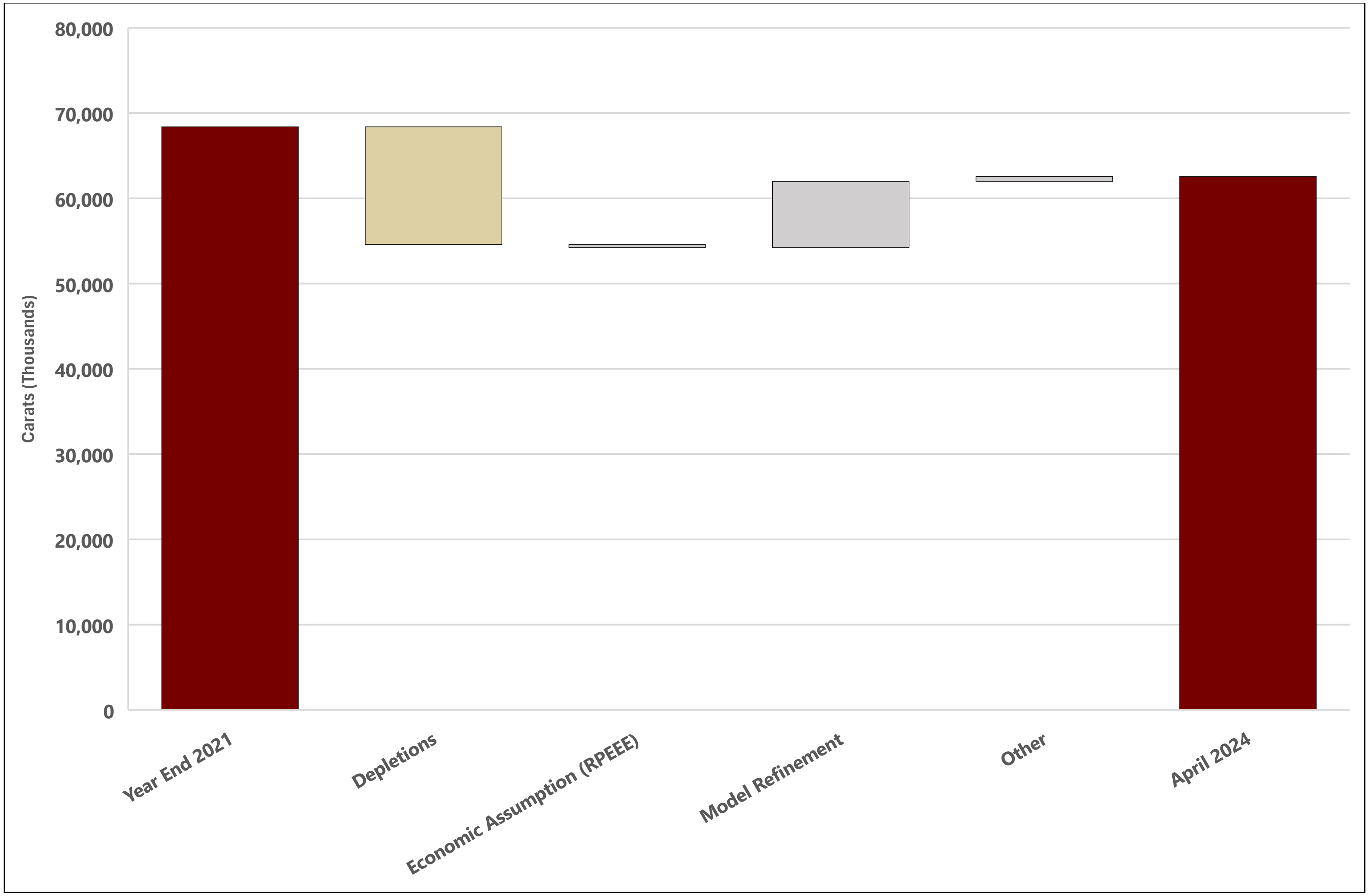
    - Model Refinement – Volume and dynamic model changes result in an increase of 7.8 million carats. Model refinement was largely based on increased volume of the model, update of number of benches to Hearne, and updated geotechnical information that allows the pit walls to be steepened at the bottom of Tuzo in order to increase Mineral reserves;

    - Reconciliation adjustment – 2023 reconciliation adjustment is mainly related to correction for 2022 Q4 actual results as well as minor single tonne/carat adjustments for a total of +225 thousand carats. The correction to 5034 was +459 thousand carats, -21 thousand carats from Tuzo, +346 thousand carats from Hearne, and -575 thousand carats from stockpile. A 16 thousand carat increase in Wilson represents the adjustment for Q4 2022 and also material maintained in stockpile from 2022 with minimal mining or depletions; and

    - These changes combined have decreased the Gahcho Kué Resource by 5.8 million carats. This is mostly related to depletions that are somewhat offset by model refinement.

The closing balance April 2024 amounts to 62.5 million carats.

Figure 14-1: Reconciliation of Resource Carats (December 2021 to April 2024)



14.5 Target for Further Exploration

The Hearne Northwest Extension was discovered during routine mining activities in late 2021. From 2022 to 2023, a significant amount of core drilling was conducted to determine the volume extent of the extension (see drilling Section 10.2). A total of 1,623 m of kimberlite core from 28 drillholes was recovered, logged, photographed, and sampled for density, microdiamond, petrographic, whole rock, and mineral chemistry analysis.

The QPs are of the opinion that the Hearne Northwest Extension is a target for further exploration (TFFE) based on the information provided by the Gahcho Kué Joint Venture. The estimate of TFFE is conceptual in nature as there has been insufficient exploration to define a Mineral Resource, and it is uncertain if future exploration will result in the estimate being delineated as a Mineral Resource. Further core drilling and assessment of the core following the protocols described above will be required to increase confidence above a TFFE. The range of tonnes and grade for the Hearne Northwest Extension is provided in Table 14-5.

Table 14-5: TFFE Estimate for the Hearne Northwest Extension

Kimberlite	Tonnes (Mt)		Grade (cpt)	
	Low	High	Low	High
Hearne Northwest Extension	7.2	10.9	1.8	2.2

Notes:
1. Grade ranges are expressed at a 1.0mm bottom cutoff and exclude incidental diamonds.
2. The Hearne Deep Extension is modeled to a depth of 130m below average sea level.
3. The Hearne Deep Extension is open at depth.

Source: McCandless (2024)

15 MINERAL RESERVE ESTIMATES

15.1 Open Pit Geotechnical

Mine geotechnical investigations at Gahcho Kué have been ongoing since 1996 primarily under the supervision of independent consultants SRK, Piteau Associates and more recently WSP. Between 1996 and 2013 a geotechnical model for the Gahcho Kué deposits was created through eight drilling and core logging campaigns, and three field mapping programs. These programs resulted in the development of the mine geotechnical parameters and pit slope design criteria used during the 2014 PFS. The original criteria outlined in a 2004 SRK study identified six distinct structural domains used to develop the pit design sectors for 5034, Hearne and Tuzo. The pit slope design parameters outlined in the 2014 PFS and subsequent pit designs were used as the basis for operational mine planning and reserve reporting during 2014, 2015 and 2016.

During 2015 and 2016, field observations of the performance of the eastern walls in 5034 warranted additional investigation into the geotechnical design criteria. The significance of the J5 joint set, a shallow dipping northeast trending structure was made apparent during the excavations of the first two benches of the 5034 pit. The J5 structure's unfavourable orientation presented the possibility for significant crest loss and compromised ramp widths on the eastern pit walls of 5034.

As a result, the GKJV commissioned a new geotechnical study under the supervision of Piteau Associates in 2016 with the following primary objectives:

- Conduct a drilling and logging of twelve bore holes with a primary focus on assessing the geotechnical characteristics of 5034, Hearne and Tuzo, as well as the significance and continuity of the J5 structure;
- Perform updated kinematic analysis using new geotechnical data and re-assess the geotechnical domains for all three pits; and
- Provide revised geotechnical design criteria based on updated analysis for the purpose of open pit optimization and detailed pit design to mitigate the potential concerns of J5 in 5034, Hearne and Tuzo.

Results from the Piteau field investigation were used to update rock mass data, and develop recommendations and alternatives on inter-ramp angle, bench face angle and catchment width which were provided to Gahcho Kué in early 2017.

Following the 2017 Piteau Associates work, an additional field investigation commenced from 2017 to 2018 drilling 15 geotechnical drill holes. Photogrammetry mapping data of the temporary and final pits walls, as well as surface mapping data of the outcrops and the upper west, north and east walls of the 5034 pit were collected. The developed surface mapping structural database consisted of 2,755 structural features along with characteristic information (spacing, persistence, toughness, etc.).

The purpose of the investigation was to address data gaps and target potential adverse structural orientations that could not be analyzed in detail from 2017. Following sample testing, kinematic analysis and pore water pressure calculations, geotechnical analysis of the ultimate pit shapes was conducted by Piteau and used to assess the potential for inter-ramp and overall slope stability. As a result of in-lab rock strength testing, the universal compressive strength (USC) ranges from 237 MPa to 245 MPa between the Tuzo, 5024, and Hearne pits.

The GK rock mass was previously subdivided into eight structural domains. Certain structural domains that have a significant amount of new structural data available were subsequently divided and domain boundaries updated. The rock mass was divided into 15 structural domains between the Tuzo, 5034 and Hearne pits following the 2017 update.

In 2018 and early 2019, the drilling program targeted the saddle portion between the existing 5034 open pit and the proposed Tuzo open pit. This result developed the new geology model for the Northeast Extension. The configuration of the Hearne pit was also updated to incorporate the slope design recommendations from Piteau Associates 2018 geotechnical investigation report.

In 2020, Golder completed a pit slope design study that provided slope design recommendations for moving to 28 m tall double benches in the 5034 (including NEX) and Tuzo pits. The slope designs were primarily based on slope performance observations in the 5034 pit. The Hearne pit slope recommendations were not modified in this study by Golder.

In 2022 Golder completed a pit slope design study that provided new slope design recommendations for the Hearne pit. The updated slope designs were based on favourable bench geometries observed and resulted in increases in the Hearne internal ramp angles design recommendations.

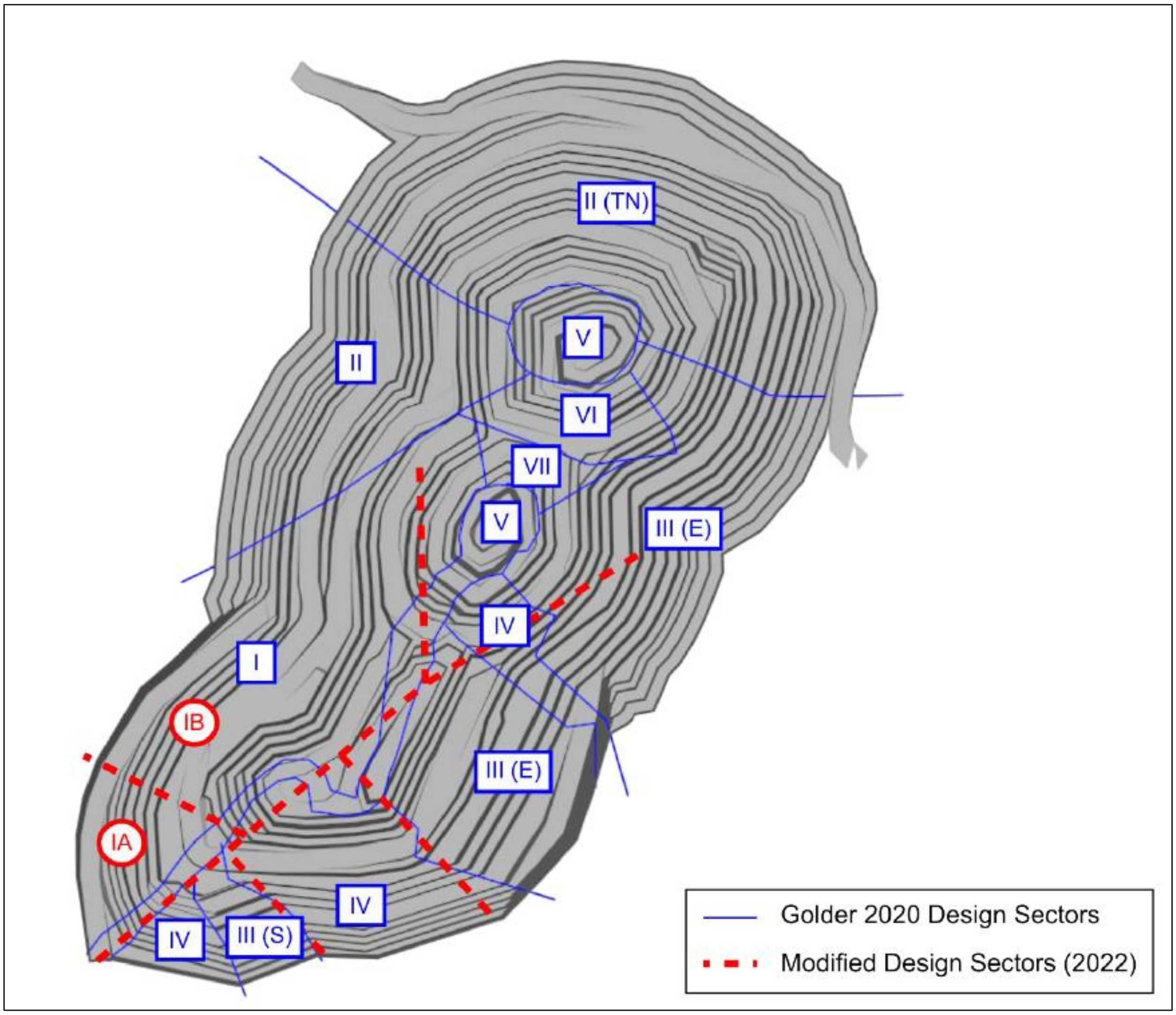
In 2024 WSP conducted an updated pit slope parameter design for the 5034, NEX and Tuzo pit based on more recent observations at the 5034 and NEX pits as well as an updated geotechnical hazard assessment.

Recent observations at both the 5034 and NEX pits includes improved slope performance based on observed crest losses compared to the existing expected crest losses from the 2020 Golder study. The new observed crest losses where then used to inform the new allowable crest loss when determining the new minimum bench width recommendations.

An updated geotechnical hazard assessment was also conducted and included new structures found in the pit (Diabase splays, the Dunn dyke and the Dunn dyke splay). The findings indicate that implementing localized management measures operationally would effectively mitigate most potential hazards.

The updated pit slope design parameters for the 5034, NEX and Tuzo pits are provided in Table 15-1 and are also shown in Figure 15-1.

Figure 15-1: 5034/NEX/Tuzo Pit Slope Design Sectors



Source: Golder (2022)

Table 15-1: Pit Slope Design Criteria

Design Sector	Lithology	Structural Domain	Slope Dip Direction (degrees)	Bench Height (m)	Inter-Ramp Angle (degrees)	Design Bench Width (m)	Expected Crest Loss (m)	Effective Bench Width (m)
I	Granite	5034-West 5034-Central Saddle	060 to 180	28	59.5	16.5	6.5	10
1A	Granite	5034-South 5034-West Saddle	060 to 100	28	59.5	16.5	6.5	10
1B	Granite	5034-Central 5034-West	100 to 180	28	64	13.7	5.5	8.2
I	Granite	Tuzo-West	100 to 125	28	64	13.7	5.5	8.2
II (TN)	Granite	Tuzo-North	125 to 260	28	64	13.7	5.5	8.2
III (E)	Granite	5034-East 5034-Central Tuzo-North Tuzo-East Saddle	260 to 340	28	64	13.7	5.5	8.2
III (S)	Granite			28	58	17.5	7.5	10
IV	Granite	5034-East 5034-Central	340 to 060	28	60	16.2	6.2	10
V	Kimberlite	5034-KB Tuzo-KB	ALL	14	45	13.8	4.8	9
VI	Granite	Saddle	340 to 060	28	61	15.4	3.4	12
VII		Saddle	180 to 260	28	61	15.5	5.5	10

Source: WSP (2024)

15.2 Open Pit Optimization

De Beers used Geovia Whittle™ software to complete optimizations on all deposits. Optimized pit shapes remain unchanged from the previous Technical Report (JDS, 2021). Hearne and 5034 pits are nearing completion, and assumptions used to derive Tuzo and 5034-NEX pits have not changed materially from 2021 work.

Input parameters used to conduct 2021 optimizations are included in Table 15-2. Joint venture approved diamond prices were used to determine the diamond pricing for the basis of the optimization. Open pit shapes are derived by varying the price (revenue factor) and generating a ‘breakeven’ pit shell for each revenue factor.

Table 15-2: Open Pit Optimization Parameters

Parameter	Unit	Value
Mining OPEX Variable	C$ / t mined	3.66
Mining OPEX Fixed	C$ / t processed	12.16
Mining Sus. CAPEX	C$ / t processed	1.76
Processing OPEX	C$ / t processed	10.96
Processing Sus. CAPEX	C$ / t processed	0.33
G&A OPEX	C$ / t processed	39.94
G&A Sus. CAPEX	C$ / t processed	1.24
Total 'Process' Cost Input	**C$ / t processed**	**66.40**
Exchange Rate	C$: USD	1.19
Dilution	%	1.35 m "skin"
Mining Recovery	%	99
Prices		
5034 Southwest Corridor	US$/ct	70.01
5034 West	US$/ct	71.22
5034 Centre	US$/ct	101.20
5034 North East	US$/ct	63.67
Tuzo	US$/ct	45.94
Wilson	US$/ct	47.06
Price Escalation		
5034/NEX		1.05/1.08
Tuzo		1.14
Pit Slope Parameters	Refer to Section 15.1	

Source: De Beers (2021)

Mine operating and capital assumptions were estimated based on historic and budgeted costs. Mining cost adjustment factors (MCAF) were not used, as impact of mining depth on cost at Gahcho Kué is not distinctly correlated. The mine rock storage sequencing is optimized to smooth haulage requirements by long hauling during the earlier years of the plan, and short hauling waste to the external mine rock storage facilities or backfilling in-pit while mining the lower-most benches.

G&A and Milling costs were estimated based on historic values and budgeted costs. Estimated sustaining capital was also considered in optimizations.

The resulting shells were analyzed using Minemax Scheduler software to select optimal configuration to maximize the extraction of the mineral resources estimated within the 3D block model, while respecting the following key constraints:

- Existing mining fleet capacity (op. hrs and pit bottom productivities);
- Maximum mill capacity of 3.6 M t/a; and
- Maximum 2 benches sink rate per quarter (8 benches per year).

The selected shells were then used as the basis for detailed pit designs which have been used to calculate the Mineral Reserves.

15.3 Open Pit Design

All stated reserves for the Gahcho Kué Mine exist within detailed pit designs. These detailed designs are based on the recommended geotechnical parameters for each geotechnical zone, as well as the selected optimal Whittle shell. Detailed pit designs for each of the three deposits were generated with the following considerations:

- Double and single lane haul ramps designed to meet the regulations outlined in the NWT Mines Health and Safety Regulations. (3x and 2x the width of the largest haul truck + berm);
- Catchment benches;
- Minimum mining widths;
- 14.0 m benches; and
- Double benching where applicable.

Due to the close proximity of the Tuzo and 5034 pipes as well as the addition of 5034 NEX, the two pits connect.

The final benches of Hearne have been steepened based on 2022 Golder recommendations.

The pit design for Tuzo was updated in Q1 2024 based on latest geotechnical recommendations that allowed the pit to extend deeper.

The pit design for 5034 and NEX were updated in Q1 2024. The design changes incorporate the opportunity to steepen some walls, while mitigating a geotechnical risk of the South-West Corridor (SWC).

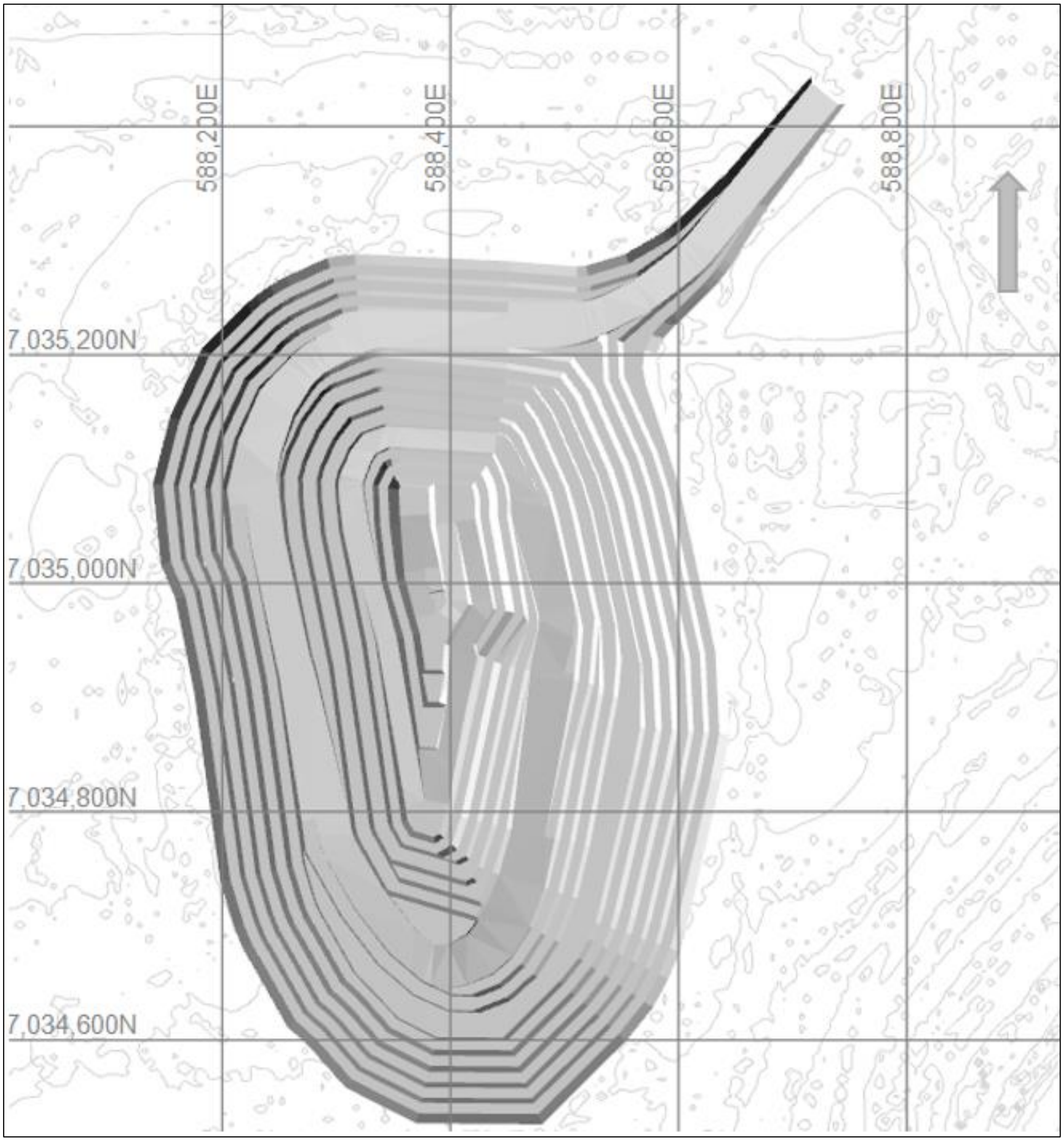
Ramp orientations have been established to optimize exit distances relative to waste rock piles and critical infrastructure. Ramps are a mixture of concentric and switchback designs based on geotechnical criteria.

Pit designs for 5034, Hearne and Tuzo are presented in Figure 15-2 and Figure 15-3.

Figure 15-2: 5034 / Tuzo Ultimate Pit Design

Source: De Beers (2024)

Figure 15-3: Hearne Ultimate Pit Design



Source: De Beers (2024)

15.4 Mining Dilution and Losses

Mining dilution and losses have been incorporated in the conversion of Mineral Resources to Mineral Reserves.

A global factor of 1% has been applied to all reserves to account for mining losses due to stockpile manipulation and fleet destination errors.

Internal and external dilution has been considered and addressed separately for each pit. Internal dilution is incorporated into the mineral resource with the exception of a large raft of waste (1.7 Mt) in the Tuzo body which is excluded from the mineral resources and reserves. External mining dilution is estimated by spatially modelling a 1.35 m thick 'skin' of dilution at all waste and kimberlite contact areas. This assumes that all material from mixed ore/waste contact areas will be sent to the treatment plant rather than low grade stockpiles. The dilution thickness was chosen by evaluating a series of dilution skins with of incremental thickness and comparing results to actual data. The application of the 1.35 m external dilution skin results in the following average mining dilution by deposit:

- 5034: 8.9% (inclusive of 5034 NEX Pushback)
- Hearne: 7.1%
- Tuzo: 8.0%

15.5 Cut-off Grade

Kimberlite forms a discrete contact with the host granite rock clearly separating, in most cases visually, ore from waste. While the kimberlite itself may contain varying levels of granitic dilution, and varying levels of diamond grade and quality, diamonds are not found beyond the contact. Therefore, all Gahcho Kué kimberlites qualifying as reserves are mined with no selectivity, including zones of unexplained lower diamond content.

An in-situ cut-off grade of 25 cpht (exclusive of external dilution) was used for the optimization. This allows all kimberlite, with the exception of low-grade kimberlite below 25 cpht in Tuzo, to be treated as ore and reflects current practices at Gahcho Kué. This was achieved by excluding blocks below an in-situ grade of 25 cpht from the block model and setting the cut-off value to near zero (inclusive of external dilution) to ensure diluted blocks along the kimberlite and waste rock contact are included as ore.

15.6 Open Pit Mineral Reserves

The optimization results and subsequent pit designs have determined the economic mineral reserve estimate for each deposit as summarized in Table 15-3.

Table 15-3: Mineral Reserve Estimate (April 22, 2024)

Pipe	Classification	Tonnes (Mt)	Carats (Mct)	Grade (c/t)
5034	Probable	6.1	12.3	2.01
Hearne	Probable	0.3	0.5	1.54
Tuzo	Probable	11.3	17.3	1.52
Wilson	Probable	2.5	2.1	0.84
In-Situ Total	**Probable**	**20.3**	**32.1**	**1.59**
Stockpiles	Probable	3.3	2.4	0.73
Total	**Probable**	**23.6**	**34.6**	**1.47**

Notes:

1. Mineral Reserves are reported within detailed designed pits and confirmed to have a positive economic return. Economic evaluation is based a LOM production schedule using an average diamond price of $US95/ct, a process recovery of 100%, an exchange rate of 1.30 C:US, a mining OPEX of $5.9/t mined, a processing OPEX of $58.5/t milled.
2. Mineral Reserves are reported at a variable bottom cut-off (BCO) based on the LOM production schedule. A BCO of 1.1 mm is used for 2024-2026, and a BCO of 1.0 mm is used for 2027-2031.
3. Mineral Reserves have been depleted to account for mining and processing activity prior to and including April 22, 2024.
4. Mineral Reserves are based upon the updated resource model (2024) and therefore reflect any changes to the estimation of tonnes, grade and contained carats within that resource.
5. Mineral Reserves may be subject to legal, political, environmental and other risks and uncertainties. The QP is not aware of any legal, political, environmental or other risk factors that might materially affect the estimate of Mineral Reserves.
6. CIM definitions were followed for Mineral Reserves.
7. Tonnages are rounded to the nearest 100,000 t.
8. Tonnage and grade measurements are in metric units; contained diamonds are reported as millions of carats.
9. MPD's attributable portion of mineral reserves is 49%.

Source: De Beers (2024)

Table 15-3 was reviewed by the QPs and complies with CIM definitions and standards for a National Instrument (NI) 43-101 for an operating mine.

The economic analysis presented in Section 22 confirms that the probable reserve estimates meet and comply with CIM definitions and (NI) 43-101 standards. At the time of this report, the mine is economically viable using current diamond prices and prevailing long-term price estimates.

15.6.1 Stockpiles

The Gahcho Kué Mine stockpiles run of mine (ROM) ore on a pad adjacent to the primary crusher. Ore is loaded into the hopper of the primary crusher using front end loaders at a rate of approximately 400 t/h. As of April 22, 2024, the run of mine (RoM) stockpile at the primary crusher had an ending inventory of approximately 3.3 Mt and 2.4 M carats inclusive of dilution and mining losses.

Stockpile strategy is defined by the building and maintenance of stockpiles by lobe that provide the appropriate grade and tonnage in accordance with the life-of-mine plan and based on mining availability. Grade and density accounting follows a 'first-in-average-out' strategy where depletions are calculated month-on-month using the previous month end averages. Weighted values with material from the current month are applied only when depletions exceed previous month totals.

16 MINING METHODS

16.1 Mining Methods

The Gahcho Kué Mine employs conventional open pit truck/shovel mining methods. Waste and ore are blasted and loaded using a fleet of diesel-powered trucks, shovels, drills and ancillary equipment. Waste rock will be stored in two surface mine rock piles as well as in two of the excavated pits at later stages of the mine life. Kimberlite ore is hauled to a run-of-mine storage pad where the ore is stockpiled and loaded into the primary crusher via a front-end loader. Kimberlite processing creates two additional waste streams of coarse and fine processed kimberlite. Coarse processed kimberlite (CPK) is loaded into haul trucks and stacked in a pile north of the plant, while the fine processed kimberlite (FPK) is deposited via slurry into a settlement pond known as Area 2. Non-acid generating (NAG) and potentially-acid generating (PAG) waste rock is differentiated using an on-site sampling system of blast hole cuttings. PAG rock is encapsulated within the surface mine rock piles and eventually below the restored final lake elevation of Kennady Lake during period of pit backfill.

The mine design and consequent mine plan considers conventional truck / shovel mining utilizing 29 m^3 bucket diesel hydraulic front shovels, a 17 m^3 front-end loader and 218 t class haul trucks to mine kimberlite and waste. This large fleet is augmented by 12 m^3 bucket front-end loaders, scaling excavators and 90 t haul trucks. Production drill and blast activities are supported by a fleet of rotary blast hole drills drilling 251 mm diameter holes. Pre-shear and auxiliary drilling are conducted by down the hole percussion drills drilling 171 mm diameter holes.

Pit designs were developed using optimized Whittle shells as a basis, and these were used to develop the mine production plan and schedule. The mining sequence is optimized to smooth waste stripping requirements, while ensuring adequate kimberlite exposure to meet kimberlite feed requirements, as well as mine rock storage considerations within the Hearne and 5034 pits throughout the mine life.

Pre-stripping began on land in the northern half of the 5034 pit in 2014, with the majority of the granite waste used for road, dyke and infrastructure pad construction. Unsuitable overburden material was placed in the South mine rock pile. Mining continued in the north side of 5034 until 2016, when mining in the south half of the ultimate 5034 pit began. Mining in the 5034 pit will be completed in late-2024. From this point, mine rock from the adjacent 5034 NEX Pushback will be placed in the mined-out 5034 pit.

Mining of Hearne pit started in December 2017 and will be completed in late-2024. Priority has been placed on mining Hearne in these years to open up in-pit waste storage capacity. Once Hearne is complete, fine processed kimberlite will be diverted from the FPK storage facility to the empty pit.

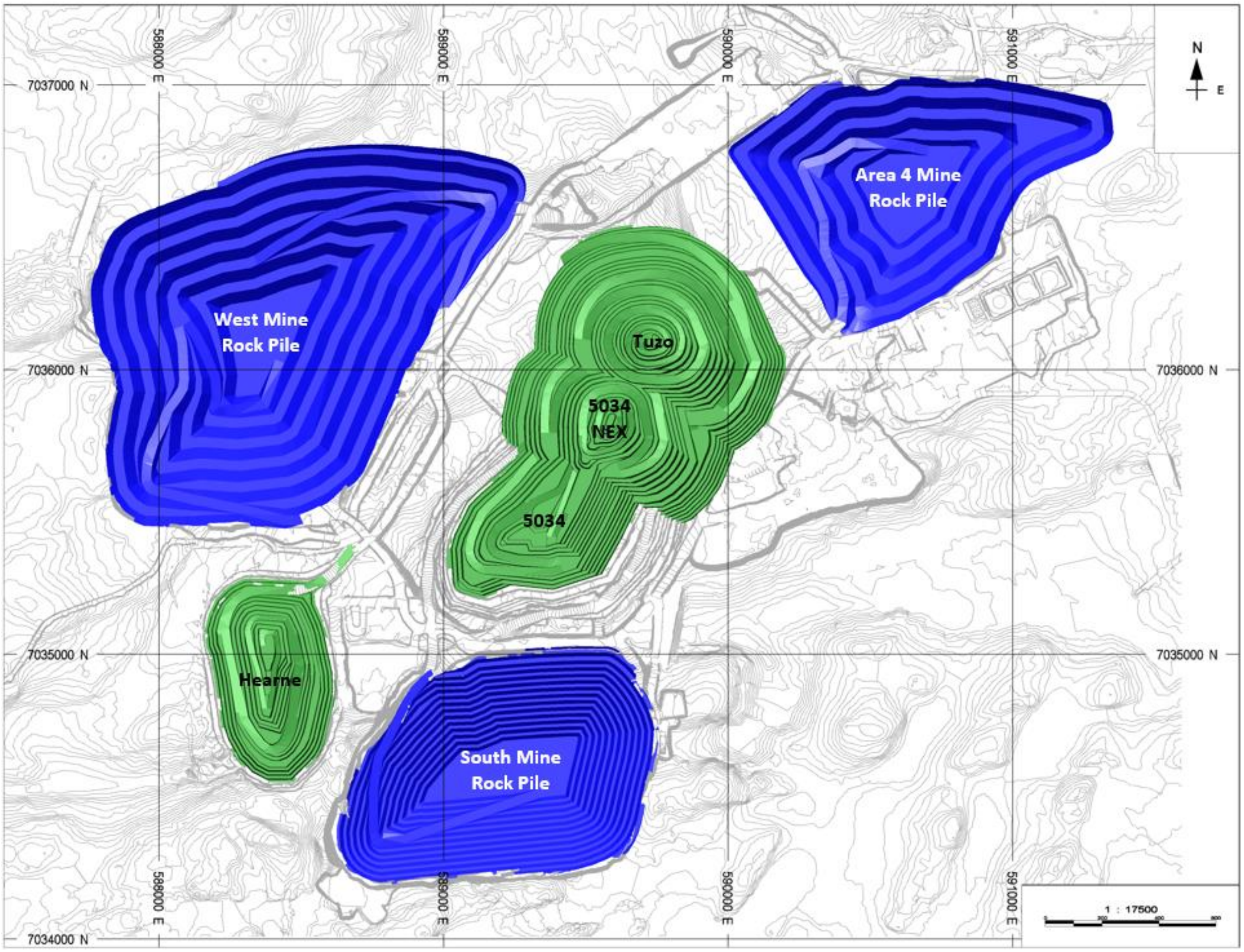
In 2020, equipment began stripping the 5034 NEX Pushback which also incorporated the first phase of Tuzo. Tuzo ore from this first phase that will be mined with the NEX Pushback was released starting in 2021 and will continue through to late-2026. In 2024, NEX ore will be released, and it will be the primary kimberlite production source until mining in the NEX Pushback is complete in late-2026. At this stage in the mine life, the combined mined-out area of the NEX Pushback and the 5034 pit will be used for Tuzo mine rock storage. Waste stripping in the third and final phase of Tuzo pit began in early 2024 and ore release will start in 2026. Kimberlite production in Tuzo (including Wilson kimberlite) will be sustained until late 2030.

Commissioning of the treatment plant was completed in March 2017. The annual process production is a planned 3.60 Mt to the end of the mine life (original nameplate was 3.0 M t/a).

All three kimberlite deposits exist under Kennady Lake and required substantial dewatering efforts prior to mining. Dewatering of the Southern portion of Kennady Lake (Area 8, 7 and 6) was completed in 2015 along with construction of the primary dewatering infrastructure exposing the 5034 and Hearne deposits. Completion of the remaining dewatering dike network and substantial dewatering of Area 4 was conducted in 2018 and 2019, which exposed the Tuzo mining area.

A general layout of the final configuration of the mining area is shown in Figure 16-1.

Figure 16-1: General Mine Arrangement, Gahcho Kué Mine



Source: De Beers (2021)

16.1.1 Operations

The Gahcho Kué Mine operates 365 days per year, 24 hours per day. The mine operation is run using two-12 hours shifts, with the majority of operations and operational support personnel working a 14 day on / 14 day off rotation. A portion of Yellowknife based mine management and mine administrative staff work a four day on / three day off schedule working 12-hour shifts and provide a consistent management presence at the mine site.

16.2 Mine Production Plan

The current mine production plan for Gahcho Kué has been developed to maximize the value of the 5034, Hearne, Tuzo and Wilson reserves through a strategic mining sequence. This sequence considers internal phasing to balance strip ratios during pre-strip activities, concurrent mining of all three pits, ore stockpiling and blending as well as in-pit backfill of the Hearne and 5034 pits during the later years of the mine life. The three pits are mined in the following order and for the following durations:

- 5034 – commenced in 2014 and extends to 2026 (including the NEX pushback);
- Hearne – commenced in 2017 and extends to late 2024; and
- Tuzo and Wilson – 2020 to 2030.

The annual life-of-mine (LOM) schedule is summarized below in Table 16-1.

Note that there are some minor variations between the stated Mineral Reserves and the LOM production schedule. Inferred material has been included in the production schedule (excluded from Reserves), although this material has been assigned zero grade and does not contribute to recovered carats (4.2 M Cts are classified as Inferred). In addition, Reserves are stated with specific cut-offs and are based on the setting of the bottom size screen panels and differ from the production schedule. The LOM production schedule reports down to a BCO of 1.1 mm until the end of 2026 and changes to 0.8 mm starting in 2027 whereas the Mineral Reserves report a BCO of 1.0 mm starting 2027. In reality, smaller diamonds (below the Reserve cut-off) are recovered. These smaller diamonds are called incidentals and have been included in the LOM plan and based on historical production records (and sales), account for 2% of the recovered carats in the plan.

Table 16-1: Life of Mine Production Summary

LOM Schedule	Units	Total	2024	2025	2026	2027	2028	2029	2030	2031
Mine Schedule										
Waste mined Total	**Mt**	**167.8**	**31.7**	**38.3**	**35.9**	**36.7**	**21.0**	**4.2**	**0.1**	**-**
Waste mined 5034	Mt	**63.5**	22.6	34.4	6.5	-	-	-	-	-
Waste mined Hearne	Mt	**0.7**	0.7	-	-	-	-	-	-	-
Waste mined Tuzo	Mt	**103.6**	8.3	3.9	29.5	36.7	21.0	4.2	0.1	-
Mill Feed mined Total	**Mt**	**24.6**	**4.6**	**2.3**	**4.7**	**2.7**	**5.5**	**3.9**	**0.9**	**-**
Mill feed mined 5034	Mt	**9.1**	3.0	2.3	3.8	-	-	-	-	-
Mill feed mined Hearne	Mt	**0.8**	0.8	-	-	-	-	-	-	-
Mill feed mined Tuzo	Mt	**13.7**	0.8	0.0	0.8	2.7	5.5	3.9	0.9	-
Strip Ratio	**W:O**	**6.8**	**7.0**	**16.3**	**7.7**	**13.4**	**3.8**	**1.1**	**0.1**	**-**
Process Schedule										
Material treated Total	**Mt**	**26.9**	**3.4**	**3.5**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**2.1**
Material treated 5034	Mt	**7.3**	1.6	1.7	3.6	0.5	-	-	-	-
Material treated Hearne	Mt	**0.6**	0.3	0.5	-	-	-	-	-	-
Material treated Tuzo	Mt	**18.7**	1.5	1.2	-	3.2	3.6	3.6	3.6	2.1
Bottom Cut-off	**mm**	**variable**	**1.1**	**1.1**	**1.1**	**0.8**	**0.8**	**0.8**	**0.8**	**0.8**
Average grade Total	**c/t**	**1.50**	**1.39**	**1.39**	**2.04**	**1.20**	**1.74**	**2.06**	**1.26**	**0.56**
Average grade 5034	c/t	**1.94**	1.61	1.96	2.04	2.21	-	-	-	-
Average grade Hearne	c/t	**1.42**	2.18	0.99	-	-	-	-	-	-
Average grade Tuzo	c/t	**1.34**	1.00	0.73	-	1.06	1.74	2.06	1.26	0.56

LOM Schedule	Units	Total	2024	2025	2026	2027	2028	2029	2030	2031
Recovered carats Total	**M carats**	**40.5**	**4.7**	**4.8**	**7.3**	**4.3**	**6.3**	**7.3**	**4.5**	**1.2**
Recovered carats 5034	M carats	**14.2**	2.5	3.4	7.3	1.0	-	-	-	-
Recovered carats Hearne	M carats	**1.2**	0.7	0.5	-	-	-	-	-	-
Recovered carats Tuzo	M carats	**25.0**	1.5	0.9	-	3.4	6.3	7.3	4.5	1.2

Notes:

1. Variation in the production schedule as compared to Table 15-3 can be attributed to:
   a. The LOM Production Schedule includes all of 2024 whereas the Mineral Reserves have been adjusted for depletion as of April 22, 2024.
   b. Inferred material has been included in production schedule. This material (2.2 Mt @ 1.9 cpt) was removed from Mineral Reserves and the Economic Analysis.
   c. Mineral Reserves are reported at a bottom cut-off of 1.0 mm starting 2027 whereas schedule includes reports a bottom cut-off of 0.8 mm starting 2027. Both report at a bottom cut-off of 1.1 mm until the end of 2026.

Source: De Beers (2024)

16.3 Mine Equipment

Mine equipment at the Gahcho Kué mine has been subdivided into three categories:

- Load and Haul – Primary Production Fleet (Shovels, large excavators, haul trucks loaders and large dozers);
- Drill and Blast – Drills and explosives trucks; and
- Support or Ancillary – small dozers and excavators, fuel / service trucks, tool carriers, pick-ups, buses, cranes and all other mobile equipment.

Equipment requirements, costing, maintenance and scheduling is based on Service Meter Unit (SMU) hours correlated directly to the mine plan as per the Anglo Time Model. Equipment requirements are calculated by comparing modelled productivities and SMU hour requirements for each type of equipment to the maximum effective working hours for a single unit (P200). These effective working hours account for equipment availability and all controllable and non-controllable production delays.

16.3.1 Equipment Selection

Major mining equipment size and type has been selected based on the following criteria:

- Annual mine production schedule and waste stripping requirements;
- Pit design parameters and working bench height;
- Productivity and operating costs;
- Proven original equipment manufacturers (OEM) with Canadian Arctic diamond experience;
- Established supplier maintenance, repair and supply chain systems capable of supporting the owner's team; and
- Compliance with all safety and environmental standards.

The mining fleet delivers 3.6 Mt of kimberlite annually to the process plant during production and strip an average of 28 Mt of waste per year during the same period. Peak waste stripping is approximately 37 Mt per year in 2025 through 2027 when significant stripping is required at Tuzo.

During 2017, Gahcho Kué implemented a GPS-based collision avoidance program through a partnership with Hexagon Mining. The system has been outfitted to all mobile equipment in both the production and ancillary fleets. Additionally, the mine has implemented a GPS-based high precision drill management system.

SMS-Komatsu is currently the primary equipment supplier and maintenance contractor for shovels, excavators, haul trucks, dozers and the majority of support equipment. Atlas Copco is the primary drill supplier and drill maintenance contractor, providing maintenance expertise under the direction of the Gahcho Kué maintenance program.

Life of mine equipment requirements for the Gahcho Kué mine are presented in Table 16-2.

Table 16-2: Life of Mine Equipment Requirements

Equipment Type	Model	2024	2025	2026	2027	2028	2029	2030
29 m^3 Shovel	PC5500	3	3	3	3	2	1	0
13.7 m^3 Shovel	PC2000	1	1	1	1	1	1	1
17 m^3 FEL	WA1200	1	1	1	1	1	1	0
218 t Haul Truck	830E	17	17	17	17	15	13	0
92 t Haul Truck	785	7	7	7	7	7	7	5
Rotary Drill 251 mm	PV271	4	4	4	4	3	1	1
Percussion Drill 171 mm	ACD65	3	3	3	2	2	2	1

Source: De Beers (2024)

16.3.2 Equipment Availability

Equipment availability has been modelled for each piece of equipment. Models have been constructed to account for the following operational factors:

- Equipment age and cumulative hours;
- Major capital overhauls; and
- Seasonal effects of extreme cold weather.

Target availabilities vary over the life of mine. Average availabilities for the primary production fleet are summarized in Table 16-3.

Table 16-3: Equipment Availability Assumptions

Equipment Type	Model	Target Annual Availability (LOM Average) %	Required Utilization (LOM Average) %
29 m^3 Shovel	PC5500	77	50
13.7 m^3 Shovel	PC2000	75	62
17 m^3 FEL	WA1200	72	47
218 t Haul Truck	830E	78	60
92 t Haul Truck	785	60	50
Rotary Drill 251 mm	PV271	84	39
Percussion Drill 171 mm	ACD65	75	23

Source: De Beers (2024)

16.3.3 Mine Equipment Maintenance

Mobile equipment maintenance at Gahcho Kué is managed and executed by a combination of De Beers and contractor personnel. Primary production equipment maintenance is managed through a reliability, availability and maintenance service agreement with SMS and Atlas Copco. Additional contracts are in place for specialty services such as welding, light vehicles and tire management.

Maintenance activities are conducted in several facilities at the mine as well as in the field. The primary maintenance facilities at Gahcho Kué include:

- Primary 5 bay truck shop with wash bay (built to accommodate the 218 t haul trucks and front-end loader);
- Welding shop;
- Tire shop; and
- Light vehicle shop.

16.4 Explosives

Blasting at the Gahcho Kué Mine consists of production, wall control and pre-shear blasting. Each activity requires specific patterns and explosive products to achieve optimal results depending on rock type and drill-hole diameter.

Explosive supply, transportation, inventory and manufacturing at the Gahcho Kué Mine is managed by a single service contractor responsible for all explosives related activities up to and including pumping down the hole. The Gahcho Kué mine typically uses a 70/30 bulk emulsion explosive product for production blasting which is manufactured on-site at a contractor managed facility. Bulk ammonium nitrate is stored on site in quantities sufficient for one full year of production and transported to the manufacturing facility from the storage facility on a daily basis. Pre-packaged explosive products and explosives accessories are also stored on-site in four magazines. Packaged explosive products and accessories are shipped to site periodically by air throughout the year as supply dictates.

Once manufactured, bulk explosive product is transported from the on-site emulsion facility to the blast pattern using two “triple threat” emulsion trucks. Bulk explosives are then pumped down-hole, primed and tied in by the mine’s blasting personnel.

16.5 Personnel

Being a remote operation, the mine utilizes a combination of two types of rotations to generate the on-site personnel roster. These rotations include two-week-on / two-week-off rosters for the majority of operations personnel, as well as four day on / three day off rosters for management and some technical services positions. For the purposes of this report, the organizational structure of the Gahcho Kué mine site has been broken down into the following categories:

- Mine Operations and Mobile Maintenance;
- Processing, Engineering and Fixed Plant Maintenance;
- Site Services and Camp Operations;
- Technical Services; and
- General and Administrative.

16.5.1 Mine Operations and Mobile Maintenance

Mine operations personnel refer to all personnel directly and indirectly related to the management and execution of mining activities such as:

- Heavy equipment operators;
- Drill and blast;
- Mobile equipment maintenance;
- Earthworks construction;
- Pit dewatering;
- Mine engineering; and

- Mine management.

16.5.2 Processing Operations, Engineering and Fixed Plant Maintenance

Process operations, engineering and fixed plant maintenance personnel refers to all personnel directly and indirectly related to the operation and maintenance of the process plant and major fixed site infrastructure including:

- Process plant operations;
- Metallurgy and sorting;
- Process and engineering management; and
- Process and fixed plant maintenance.

16.5.3 Site Services and Camp Operations

Site services and camp operations personnel refers to all personnel directly related to the operation of the mine's ancillary equipment and accommodation facilities including:

- Catering;
- Cleaning;
- Site services personnel; and
- Site services management and supervision.

Site services personnel may perform tasks such as crane operation, carpentry and facility maintenance, operation and maintenance of the water and sewage treatment systems, waste management, and boiler house maintenance and operations.

16.5.4 Technical Services

Technical Services personnel refers to all personnel directly related to the technical support and reporting functions of the mine operation; these include:

- Geology;
- Survey;
- Strategic and long-range planning; and
- Technical services management.

16.5.5 General and Administrative

General and Administrative personnel refer to all personnel directly and indirectly related to the management, safety, environment, logistics and overhead functions which support the operation of the mine. These roles include:

- General management;
- Health, safety and environment;
- Logistics, materials management and procurement;
- Indigenous affairs;
- Protective services; and
- Human resources and training.

16.5.6 On-Site Personnel

The organizational philosophy of the Gahcho Kué operation has been structured to minimize the number of on-site personnel. De Beers has supported this initiative through the development of an off-site support center based in Calgary, Alberta, where many supplementary administrative roles are based.

A summary of total on-site personnel is presented in Table 16-4 below. This table represents total personnel and as such, positions rostered by a 2 x 2 rotation will require half the stated requirement.

Table 16-4: On-Site Personnel

Department	2024	2025	2026	2027	2028	2029	2030
Mining Operations	262	249	249	237	210	151	90
Eng. & Site Services	209	198	194	193	189	166	155
Mobile Maintenance	185	180	168	166	147	117	76
Ore Processing	67	66	65	64	64	63	60
General & Administrative	88	92	91	86	83	69	66
Grand Total	**811**	**785**	**767**	**746**	**693**	**566**	**447**

Source: De Beers (2024)

17 RECOVERY METHODS

17.1 Kimberlite Processing

17.1.1 Process Summary

The mine extracts kimberlite ore from four different kimberlite pipes: 5034, Hearne, Tuzo and Wilson. The process plant was originally designed to treat 3.0 M t/a of ore; however, several throughput improvements have been implemented since commercial production was achieved in Q1 2017.

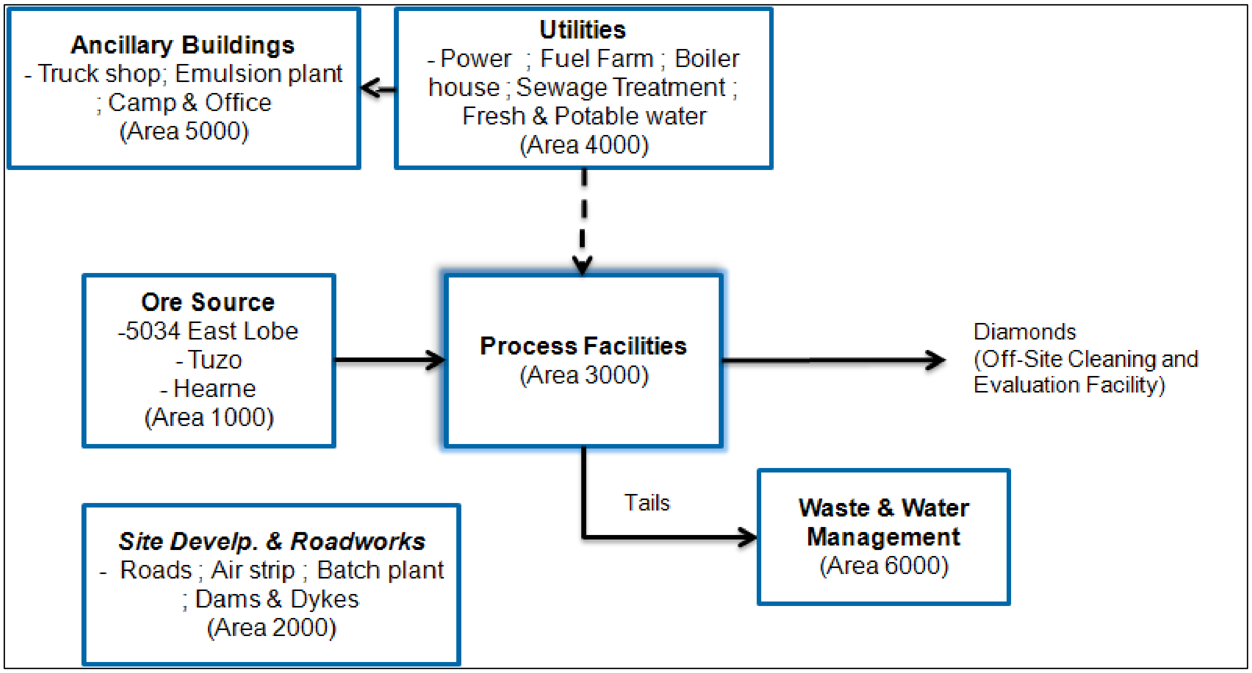
The current plan is based on a process plant throughput of 3.6 Mt for remainder of the mine life. The planned throughput is in line with demonstrated plant operation performance and the following plant modifications and improvements that have taken place to date towards increasing throughput:

- The following improvements projects were aimed at reducing the load to the thickener and the DMS modules:
  - Increase in bottom cut off from 0.8 mm to 1.1 mm with the aim to reduce the load to the Fine DMS module and as a result increase plant throughput;
  - Re-balancing of the DMS modules to ensure both module's throughput capacity was maximized;
  - Fine DMS reject removal with the aim to decrease the recirculation load thorough HPGR/scrubbing and ultimately DMS;
  - Degrit optimization with the aim to reduce the cut point at the degrit cyclones decreasing the amount of product reporting to the thickener; and
  - Pre-DMS Screening optimization with the aim to decrease the amount of undersize material reporting to the DMS module and utilizing valuable throughput capacity.

In the process plant, the ore is treated via crushing, screening, dense media separation and x-ray sorting, to produce a diamond rich concentrate that is sent to Yellowknife for final cleaning and Northwest Territories Government valuation. The processing plant targets the recovery of liberated diamonds in the 1.1 to 28 mm size range.

The following block flow diagram (Figure 17-1) shows the Process Facilities (Area 3000) compared to the other key areas of the Gahcho Kué site.

Figure 17-1: High Level BFD of the Overall Process / Site



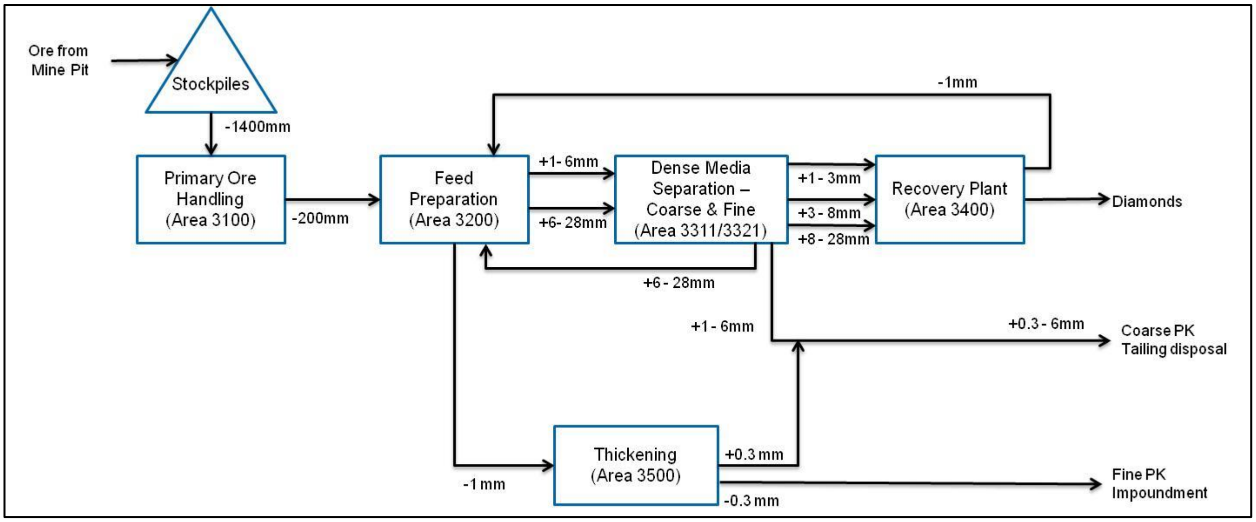
Source: Hatch (2013)

17.1.2 Process Plant Description – General Overview

The Process Facilities (Area 3000) are divided into the following areas and sub-areas:

- Primary Ore Handling (Area 3100);
- Feed Preparation (Area 3200);
- Dense Medium Separation (DMS);
- Recovery Plant (Area 3400);
- Thickening (Area 3500); and
- Plant Water and Air Systems (Area 3600).

Figure 17-2: Block Flow Diagram of the Process Plant



Source: Hatch (2013)

17.1.3 Process Design Criteria & Quality

This section presents a summary of the main criteria used for the plant design for various areas of the plant. Values in the Table 17-1 will vary or may have been adjusted depending on equipment selection during construction or changes during operations. They are presented as guidelines only.

Table 17-1: Process Design Criteria

Description	Min	Ave	Max	Units
Primary Ore Crushing – Area 3100				
Top size from mine			1400	mm
Top size to primary crushing – (grizzly cut size)			900	mm
Top size to secondary crushing – (target)		250		mm
Feed Preparation - Area 3200				
HPGR crusher feed size - target	1		75	mm
Degrit cut size - target		1		mm
Size fraction to DMS – Fine DMS	1		6	mm
Size fraction to DMS – Coarse DMS	6		28	mm

Description	Min	Ave	Max	Units
DMS area – Area 3300				
DMS modules	1 Coarse & 1 Fine			text
Medium Type	FeSi – 150D – 270 D			text
Coarse DMS – FeSi Medium to ore ratio	5:1			vol/vol
Fine DMS – FeSi Medium to ore ratio	7:1			vol/vol
Fine Process Kimberlite (PK) impoundment			0.3	mm
Coarse Process Kimberlite (PK) cut size (float screen)	1		6	mm
Coarse Process Kimberlite (PK) cut size (de-watering screen)	0.3		1	mm

Source: JDS (2014)

17.2 Recoverability and Reconciliation

Reconciliation refers to the comparison of actual production to the current estimates of production, most commonly to mine plans, or resource and reserve models. Reconciliation is carried out both monthly and annually. This comparison is used to measure the performance of the original resource and reserve estimates, mine plans and process plant.

Tonnage reconciliation at Gahcho Kué is completed monthly and compares:

- Measured tonnes treated from a weightometer on the front end of the plant to; and
- Surveyed tonnages incorporating mined volumes and stockpile depletion / additions.

Grade reconciliations compares the predicted grade in the resource model for the associated depleted volumes to the real calculated grade (recovered carats / weightometer tonnage).

17.3 Processed Kimberlite Containment

Processed kimberlite from the Gahcho Kué Plant is produced in two streams:

- Coarse Processed Kimberlite (CPK); and
- Fine Processed Kimberlite (FPK).

Coarse processed kimberlite consists of the reject fraction of materials from the coarse and fine DMS. The material is a +0.3 - 6.0 mm fraction which is discharged on a conveyor belt from the north side of the plant. The material is piled under the tail end of the conveyor where the material is loaded into 100 t haul trucks by a front-end loader. Storage capacity of the plant discharge is currently such that this loading process occurs on a continuous basis during plant operations. Once loaded, CPK material is transported directly north of the plant and truck shop where the

CPK is stacked in lifts on the coarse processed kimberlite pile. The CPK pile is designed to provide capacity until 2024. Once full, CPK will then be co-deposited in Hearne with FPK materials, once again using 100 t haul trucks to transport.

Figure 17-3: Coarse Processed Kimberlite Pile

Source: CPK Facility (De Beers, 2018)

Fine processed kimberlite consists of the final reject fraction from the thickening fraction. This would include all remaining kimberlite content less than 0.3 mm in size. The material is pumped as a slurry and deposited in one of two final locations:

1. Sub-aqueously in the Area 2 FPK storage facility (Years 2017 to 2024); and
2. Hearne pit (Years 2025 to 2031).

The Area 2 FPK facility consists of both impermeable retention walls to contain the FPK and associated discharge water from entering the receiving environment, as well as a large filtration dike on the South perimeter to allow water to permeate and filter back into the Area 3 water management pond for process plant recirculation or potential discharge. Once this facility is full, FPK discharge infrastructure will be re-oriented to co-deposit FPK materials into the Hearne pit along with CPK and potentially waste rock.

Figure 17-4: Area 2 Fine Processed Kimberlite Facility

Source: De Beers (2018)

17.4 Plant Control Philosophy

The Gahcho Kué Plant processes are automated to allow high-quality production with minimal human intervention.

The instrumentation and control systems are capable of providing the information and control necessary to operate the plant safely, efficiently, and economically.

The design of the instrumentation and control system allow for the control and monitoring of all field instrumentation, motors and actuators from a central control room using a basic process control system (BPCS). The BPCS is based on Programmable Logical Controllers (PLCs) and Human Machine Interfaces (HMIs).

The instrumentation and control system are designed for fail-safe operation and allow for fault diagnosis and reporting.

Control valves are pneumatically operated. Mechanical equipment complies with standard Z432 – Safeguarding of Machinery and include all necessary safety devices (E-Stop, Pull cords, etc.).

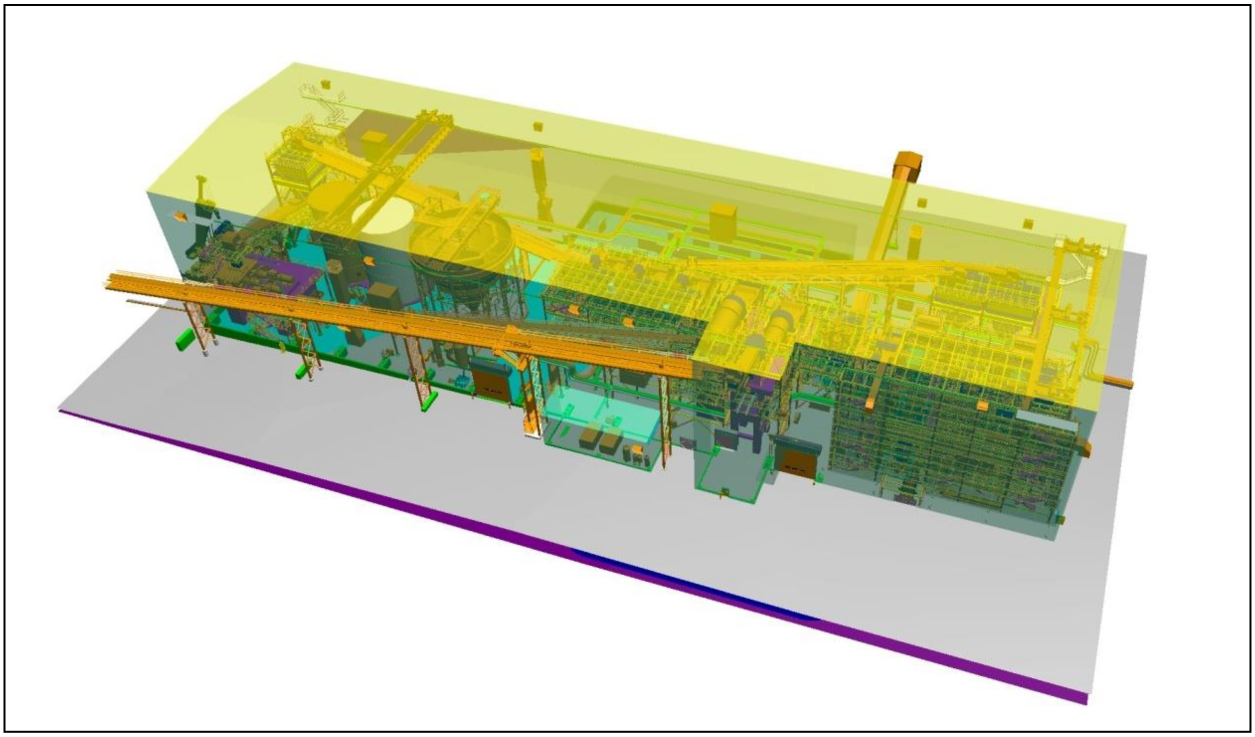
The plant is controlled from a central control room. This Control room shall be located in a strategic location to provide a clean, safe and air-conditioned operating environment and will be manned 24/7.

The PLCs and control system servers and communication devices are installed in an air-conditioned server room adjacent to the control room. Access to the server room is restricted.

17.5 Process Plant Facilities Description

The process plant is oriented along an east-west axis. Plant feed is introduced near the middle of the plant length. In the middle of the plant is the secondary cone crusher, the scrubbers and primary screening. On the west side of the plant the high-pressure grinding roll crusher (HPGR) is positioned, along with the water tanks and the thickener. On the east side of the plant the dense media separation modules are positioned and, in a separate building within the plant, the recovery. Coarse PK tails leave by conveyor from the north side of the plant.

Figure 17-5: Process Plant Oblique Isometric



Source: Hatch (2013)

Two 30 t overhead cranes, with a 5 t auxiliary hoist, service the building. Fire water pumps are located in a modular building on the north side of the process plant. Compressors are located in a modular building on the south side of the process plant.

The security system divides the plant into “Red” (recovery plant / sort house; high-security) and “Blue” (remaining plant; lower-security) areas. The Red area is physically separated by steel cladding walls from the rest of the plant. All wall penetrations are sealed. Authorized entry and exit are controlled by fingerprint identification and a system of inter-locking doors. In addition, facilities are in place for the random selection of personnel exiting the Blue area for additional search. Mandatory search will be in effect for exit from the red area. Normal access to the plant (Red and Blue zone) is done through the PCC building located at the east side of the process plant.

18 MINE INFRASTRUCTURE

18.1 Re-Supply Logistics and Personnel Transport

18.1.1 Winter Road

The primary means of material supply for the Gahcho Kué mine is via the winter road. The winter road is typically open for an approximately 60-day period from February 1 to March 30. The winter road consists of a 120 km spur road to Gahcho Kué which is connected to the Tibbitt-to-Contwoyto GKJV road shared between several other operating mines in the region. The winter road is used as the primary route for re-supply of bulk and heavy loads including:

- Fuel;
- Ammonium nitrate;
- Lubricants, emulsifiers and other bulk consumable liquids;
- Mining equipment (Haul trucks, shovels, drills, etc.); and
- Bulk materials for infrastructure and plant upgrade projects.

These items, due to their size or required quantities would be considered un-economic or not feasible to be transported by air.

18.1.2 Air Freight

All freight transported to Gahcho Kué outside of the winter road season must be done via air. Routine air freight consists of high-volume site consumables with limited storage capacity such as:

- Food;
- Non-critical maintenance parts for mobile equipment; and
- Explosive accessories.

The majority of heavy freight transport into Gahcho Kué is planned for the winter roads to minimize cost, however, the airstrip is designed to accommodate Boeing-737 and L-382 Hercules aircraft capable of transporting up to 13,600kg and 21,800kg respectively for unplanned re-supplies of certain critical spares.

18.1.3 Personnel Transport

Personnel working at the Gahcho Kué mine site arrive by air transport during all seasons. Routine personnel charter flights are organized out of two primary locations directly to the GK Aerodrome, Calgary International Airport (YYC) and Yellowknife Regional Airport (YZF).

18.2 On-Site Operations Support

On-site operational support is limited to those services which are deemed necessary to ensure the continuity of the 24/7 operation. These overhead services include:

- Full time medic;
- Full time IT personnel for troubleshooting and maintenance of site communications;
- Full time trainers to administer training on site procedures, policies, equipment operation and orientations; and
- Full time safety and environmental department.

Department heads typically work a four days on / three days off schedule and are on-site with general management weekly.

18.3 Corporate and Administrative

De Beers corporate and administrative support for the Gahcho Kué mine site is located off-site at the Calgary Operational Support Center. The facility is located at the Calgary International Airport which when required, promotes ease of travel to and from the mine site on planned weekly charters.

Corporate and administrative personnel based at the Calgary Support Center include:

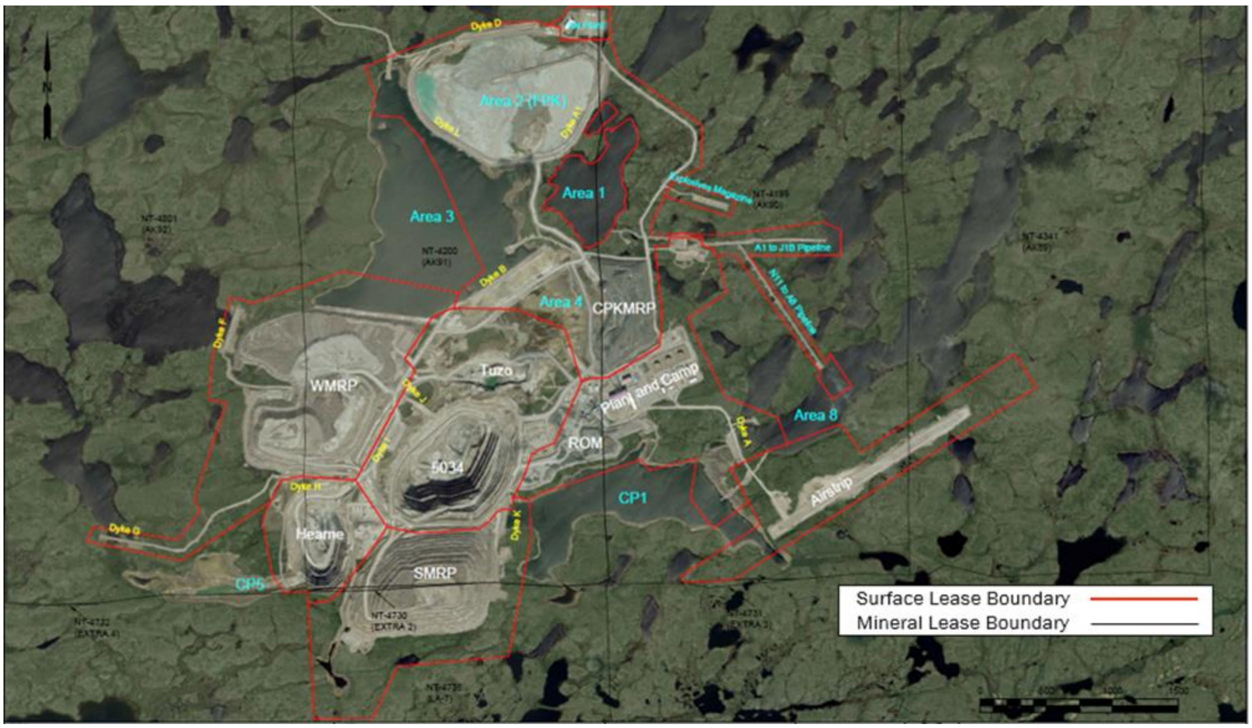
- Corporate leadership team;
- Strategic business planning and long range mine planning;
- Mine accounting;
- Resource management and exploration;
- Permitting;
- Public relations;
- Technical support and IT; and

- Human Resources Management.

18.4 Site Layout

Figure 18-1 represents the overall site layout for the GK site.

Figure 18-1: General Site Layout Drawing



Source: De Beers (2021)

18.5 Power Generation and Distribution

Power is generated by modular on-site diesel driven power plants. Five generators have been installed rated for 2,825 kWhr output at 4,160 V/3 Phase each. Each generator is provided in a modular enclosure with independent cooling and an 8-hour fuel tank. The generators are connected electrically using 5 kV switchgear.

The generators have been installed in an N+1+1 arrangement using three generators to meet average demands, one generator on stand-by and one available for routine maintenance. Total design operating load for the power station is 8.05 mW.

Power distribution is generally at 4.16 kV, with lesser loads supplied at 600 V. All plant site distribution is cable run within the utilidors as much as possible. Cable required for the outlying areas is run along the ground. The cables are suitably marked for safety purposes and to prevent damage.

The 4.16 kV feeders originating at the power plant are distributed to area substations throughout the site using overland cables adjacent to service roadways. These area substations step voltage down to 600 V for distribution to MCCs and power panels as required.

18.6 Fuel Supply, Storage and Distribution

The Gahcho Kué tank farm was designed for the storage and dispensing of diesel and oils, such as:

- Diesel fuel to feed all mobile equipment and powerhouse;
- Fresh and used lube-oil, fluids and greases for the mobile maintenance group; and
- Glycol for waste heat recovery.

These liquids are stored in:

- Three 18,000 m^3 main storage fuel tanks;
- Eight 500 m^3 fuel tanks; and
- Ten 60 m^3 multi-usage tanks.

All fuel storage facilities have been constructed with lined containment designed for 110% of the stored liquid capacity.

Diesel fuel and lubricants supplied to fixed infrastructure such as the powerhouse and truck shop are delivered via a permanent piping network. Fuel and lube supply to mobile equipment and remote infrastructure is done using a series of tandem axle fuel and fuel / lube distribution trucks.

18.7 Camp & Administration Office Complex

The Gahcho Kué camp and administrative complex was constructed as a pre-fabricated modular-type construction designed for arctic weather conditions. The facility rests on-top of temporary cribbing supports and does not include any concrete foundations. The facility is connected to the process plant, truck shop and other ancillary infrastructure via a series of arctic corridors.

The facility consists of the following components:

- Dormitory wings;

- Kitchen and food storage facilities;
- Dining hall;
- Arrivals / Departure area;
- Medical center;
- Heated three bay fire hall;
- Gymnasium and recreational facilities;
- Training and cultural center;
- Personnel control center (PCC) building, including the process plant change rooms (blue area);
- Dry;
- Laundry facilities;
- Water treatment plant;
- Sewage treatment plant; and
- Server Rooms.

18.8 Truck Shop & Warehouse Facilities

The remote location of Gahcho Kué requires that all routine maintenance of the mobile production and service equipment be carried out on-site. To effectively accomplish the task, a fully equipped workshop, warehouse and offices were constructed. A summary of maintenance and warehouse related facilities is listed below:

- Main Five Bay Truck Shop – All primary maintenance activities and warehousing for mobile production and support equipment;
- Megadome Structure – Primary heated indoor warehouse facility;
- Welding Shop – Re-purposed construction facility for welding and G.E.T repairs;
- Light Vehicle Shop – Temporary construction maintenance shop, re-purposed specifically for light vehicle maintenance;
- Tire Shop – Dedicated structure for all tire repairs and replacements;

- East Laydown – Primary winter road freight offload point for large freight complete with scales; and
- West Laydown – Adjacent to the megadome and process plant this is the primary outdoor warehouse location for critical process spares.

18.9 Ancillary Facilities

Ancillary facilities constructed for the operation of Gahcho Kué are as follows:

- Mobile aggregate crushing plant;
- Fresh water treatment module;
- Sewage treatment module;
- Microwave communications antenna;
- Incinerator;
- Mine operations muster;
- Ammonium nitrate storage facility;
- Bulk emulsion plant;
- Explosives storage magazines; and
- Environmental laboratory, geo-sampling facility and dust monitoring facility.

18.10 Aerodrome

The gravel strip aerodrome has been designed to Transport Canada specifications for landing approach angle, runway lighting, lighted windsocks, standard and RNav GPS approach, non-directional beacon, AWOS and VHF radio facilities. The aerodrome has also been outfitted with an aircraft radio control of aerodrome lighting unit (ARCAL). Additionally, the strip has been equipped with basic de-icing, refueling and airport firefighting capabilities. The overall length of the strip is 1,676 m and overall width, excluding run-off or graded areas, is 46 m.

The airstrip has been constructed and certified to accommodate 737-type jet aircraft and is regularly serviced by RJ85 and Boeing-737 jets for passengers and cargo respectively.

18.11 Roads

18.11.1 Winter Access Road

The winter access road links the Mine site with the existing Tibbitt-to-Contwoyto to winter road at MacKay Lake. A 120 km winter access road spur off the north end of MacKay Lake will be constructed each year to connect the Mine site to the Tibbitt-to-Contwoyto winter road at km 271, just north of Lake of the Enemy. The winter access road will be constructed and operated in accordance with licence and regulatory conditions and with appropriate updates and improvements as required.

18.11.2 Site Roads

Site haul, access and service roads are constructed using crushed and screened mine rock, as well as suitable overburden material and run of mine rock. Site roads have been classified into three types, each with specific design requirements. The three types of roads are as follows:

- Mine Haul Road: Primary haulage routes on site, excluding in-pit and waste dump roads designed to 3x the width of the 218 t haul fleet;
- Main Access Road: Access to mine site facilities from winter road and the N11 discharge (11 m minimum width); and
- Service Road: Used to access site infrastructure off primary haul routes (10 m minimum width).

Road materials are a mix of till and run-of-mine blast rock for fill. Sized crush rock (40 mm minus) is used for surfacing.

It is expected that regular grading and levelling using crushed gravel will be required to keep the roads in an acceptable condition to reduce wear and tear on the trucks and tires.

18.12 Fire Protection and Emergency Response

18.12.1 Fire Protection

Fire protection for each facility in the plant site area consists of a combination of hydrant / hose stations, sprinkler systems, heat and smoke detection and portable chemical fire extinguishers. Fire-fighting water is provided from dedicated storage tanks and fire pumps.

The fire water reserve and pumping system for the plant site is located inside the process plant. Here, the lower 500 m^3 of the reclaim water tank is dedicated fire water storage. This capacity will allow for two hours of fire-fighting. If an extended fire-fighting time is required, the remaining capacity of the raw water tank and the capacity of the process water tank can be used.

Two 250 m^3/h pumps—one electric and one diesel (back-up)—along with a pressure maintaining jockey pump provide the line pressure and volume to sustain fire-fighting water requirements to any one of the main areas within the plant site.

18.12.2 Emergency Response

The Gahcho Kué mine site is equipped with a volunteer emergency response team. Emergency response activities are based out of a heated three bay fire hall attached directly to the medical center. The emergency response group is equipped with a conventional pumper fire truck, modern four-wheel drive ambulance and Panther 6 x 6 ARFF fire truck for aircraft fire and rescue. The team consists entirely of volunteers who attend mandatory practices and meet or exceed the minimum hour requirements outlined by the *NWT Mines Health and Safety Act*.

19 DIAMOND MARKET & SALES PROCESS

The QPs have relied on the Mountain Province Diamonds Sales & Marketing group to provide a current overall description of the diamond market outlook.

19.1 Diamond Market Outlook

In recent years, the typically cyclical diamond market has been particularly volatile. The volatility was driven by macro factors including the global Covid-19 pandemic in 2020 that triggered an initial economic contraction, followed by rapid recovery through 2021 and 2022 as consumers spent a larger proportion of their incomes on material goods, while access to travel and other experiences remained restricted.

By early 2022, high consumer demand fueled speculative mid- and downstream diamond purchasing that propelled polished and rough diamond prices to record highs. Broader macroeconomic and geopolitical conditions, such as rising inflation and interest rate hikes, Russia's invasion of Ukraine and lack of post-pandemic recovery in China, led to a drop in downstream demand. This led to subsequent accumulation of large midstream inventories and a rapid decline in prices, first in polished then in rough diamonds. Rough prices fell 15-20% in 2023, according to the Zimnisky Global Rough Diamond Price Index, down about 25% from their record breaking all-time high in early 2022 (Zimnisky, March 2024). In the latter half of 2023, strategic measures by rough producers such as cancelled, postponed, or reduced volume sales, together with self-imposed polished manufacturing restrictions, were effective in stabilizing diamond prices going into 2024.

Macroeconomic challenges remain but the outlook for diamonds is stable, with emerging signs of recovery. In mid-2024, inflation is easing, and interest rates are holding or beginning to come down prompting a gradual recovery in consumer spending (US Federal Reserve, 2024; Bank of Canada, 2024). While diamond prices are currently lower than the highs achieved in 2022, they are expected to remain stable in the short term, with long-term gains predicted as demand continues to grow. De Beers is forecasting annual demand growth of 3% for natural diamonds to 2030, and long-term nominal rough price growth of 3-5% CAGR to 2032 (De Beers-BCG, June 2024).

19.2 Consumer Markets

The US and China have consistently been the top two consumer markets for diamond jewelry; however, India is growing rapidly and has the potential to replace China as the second largest diamond consuming country (Zimnisky, April 2024). The US consumer market is expected to remain steady with forecasts of single digit economic growth (Deloitte, 2024), and engagements and weddings are predicted to return to pre-pandemic rates, increasing by up to 25% over the next three years (Zimnisky, June 2024; De Beers, 2024). In addition to their traditional bridal focus, marketing campaigns continue to promote self-purchasing of diamond jewelry by women to counter longer term declines in marriage rates. China's post-pandemic recovery has been slower than anticipated and, despite government stimuli, the country is in recession. Long term, China is still a growth market with its increasing middle class well positioned to purchase diamond jewelry. The fastest growing jewelry market is India. Currently the market is dominated by gold, but diamond jewelry's current market share of around 15% by value is expected to increase (Zimnisky, April 2024).

The broader luxury goods market also saw significant gains post-pandemic. Despite slowing to single-digit growth in 2023-2024 (Richemont, 2024), the luxury goods market is outperforming other discretional spending categories as luxury consumers are less impacted by rising living costs.

19.3 Natural Diamond Supply

Since 2017, annual production of natural diamonds has been slowly declining from a peak of around 150 million carats. Estimates for 2023 and 2024 are around 119 million carats annually and for the rest of this decade forecasts range between 110-125 million carats. With the expected rise in global demand for natural diamonds, the outlook is positive for long term market growth and price gains.

The current decline in production is the result of the closure of several long-producing mines, including Argyle in 2020, known for its high proportion of small and brown category goods that also make up a significant proportion of Gahcho Kué production. Within the next decade several notable mines are expected to cease production, including Diavik and Ekati in Canada, as well as Kimberly tailings, Murowa, Zarnitsa and Almazy-Anabara alluvials. Combined, these closures will remove around 17-20 million carats or around 15% of global supply (Zimnisky, June 2024). Very few new mine developments or expansions are scheduled within the foreseeable future, leaving a significant gap in rough supply. Exploration for new deposits continues but has been limited by lack of industry and investor funding, and timelines from discovery through development and permitting to construction are lengthy.

Other current supply limitations include tightening G7 and EU sanctions on Russian diamonds, which represent ~20% of global production. Since the Russian invasion of Ukraine in 2022, supply and trade from Russia has been highly variable, becoming more limited through introduction of sanctions, increasing Western preference for non-Russian goods, and evolving requirements around source assurance and tracking. This has had the additional effect of catalyzing development and roll out of tracing technologies, amplifying an already growing demand for ethically mined, produced and marketed goods.

19.4 Emerging Trends

Lab-grown diamonds (LGD) have received increasing attention in recent years, as their production volume has effectively doubled every two years since 2015 (Zimnisky, January 2024). LGD jewelry is currently estimated to represent approximately 20% of total global diamond jewelry demand by value, with sales highest in the US. LGD uptake appears slower in other markets. Though LGD market share reached a high in 2023, wholesale prices continue to plummet. De Beers announced in May 2024 a price reduction of 40% in its synthetic Lightbox range, followed in June by news of plans to cease its own LGD production that supplies the Lightbox range (De Beers, May 2024; Rapaport 2024).

At the same time, despite per carat LGD prices falling, in early 2024 leading LGD diamond jeweler Pandora announced double digit year-on-year sales growth. Some analysts suggest that LGDs are bringing new consumers to the larger diamond market, creating incremental demand, rather than creating direct stone for stone competition between LGD and natural diamonds, and that there is growth potential for both market segments (Zimnisky, January 2024). Commentators have also noted that demand for LGDs appears driven by lower prices rather than ethical or environmental considerations. Detection technology that accurately identifies LGDs is being widely rolled out at retailers. This will reinforce with consumers the differentiation between natural diamonds and LGDs and accelerate the bifurcation of natural diamonds and LGD's as two separate product segments. LGD manufacturers may shift away from replicating the appearance of a natural diamond towards producing attributes not attainable in natural diamonds such as custom shapes and colours. There is also excitement about LGDs potential in emerging tech applications of diamond substrate.

Among natural diamond companies, marketing efforts are focused on reinforcing the rarity and uniqueness of natural diamonds, with many jewelry brands, typically 'fine' jewelers including Tiffany & Co, Cartier and Chow Tai Fook, committing to offer their customers only natural diamonds.

The use of AI in the diamond industry is also becoming more widespread, notably in grading diamonds, with proponents citing improved consistency and speed, especially for smaller stones. Other uses include mapping and cutting to maximize value, with technology providers again emphasizing consistency and speed as key benefits.

Global political unrest has appeared to reinforce consumer demand for ethically and sustainably sourced goods, which is driving the roll-out of digital provenance and traceability platforms through the diamond pipeline down to retailers. Mountain Province Diamonds is currently testing chain of custody via distributed ledger blockchain and continues to encourage customers to develop branding programs which highlight the positive origin story of our natural, Canadian diamonds.

Looking ahead, key trends will continue to be the growing importance of brand trust, through source assurance, digital capabilities and supply chain transparency technology. As one of Canada's most prominent mines, Gahcho Kué is well positioned in a market facing long-term shrinking supply and increasing demand, and that is demanding ever more detailed mine to market transparency and source assurance.

19.5 MPD Marketing and Sales Process Overview

MPD sells its share of the Gahcho Kué mine production through its own unique distribution model. MPD's marketing team are involved at all steps of the sales process ensuring revenue is optimized by offering customers accurate and consistent diamond parcels through a competitive, on-line sales platform.

19.6 Production Split and Royalty Valuation

MPD's 49% share of the Gahcho Kué production is confirmed after the JV royalty valuation/ production split is agreed between the Government of the Northwest Territories, MPD and De

Beers Canada. These 49:51 production splits occur approximately every 5 weeks in Yellowknife, with a prearranged annual schedule agreed to by all parties. MPD's sale dates to customers are also set annually with individual sale dates optimised to industry buying cycles. MPD's 49% share of production is sorted and valued in Canada or India in accordance with this sales schedule.

Fancies and Specials (Fancies are colored diamonds, Specials are diamonds larger than 10.8 carats) are settled through an internal tender process with De Beers. The highest bidder pays the opposing JV partner their respective share of the bid price. MPD's average time from production split in Yellowknife to closure of sale in Antwerp is 51 days, one of the fastest in the industry.

19.7 MPD Sorting, Valuation and Sale

Diamond sorting and valuation of larger stones is conducted by MPD in Canada. The high volume, smaller size diamonds are exported to Visakhapatnam, India, for sorting by Constell Group, a highly respected diamond services contractor whose clients include other major diamond producers and jewelers. Goods are sorted for sale under MPD's supervision.

The Gahcho Kué orebody and product profile are complex, producing a broad range of white commercial goods together with large, high value Special stones and higher than expected volumes of small, brown diamonds. The Gahcho Kué product also exhibits varying degrees of fluorescence.

Each of these product types has a market and an established customer base. All Gahcho Kué goods, with the natural exception of some industrials, are sold into market segments that cut and polish the rough, with resultant polished destined for the major diamond jewelry markets of the US, India and China. MPD's diamonds are sold independently on the open market as a discrete production and to date a 100% sell-through rate has been achieved.

Competitive tender sales are conducted in Antwerp and operated by Bonas Group ('Bonas'), the world's oldest diamond brokering and consultancy firm. A fixed number of sales are scheduled per year in-line with industry buying cycles with lot viewings and tender logistics managed by Bonas. Bids are submitted through an online bidding system, offering a simple, secure and convenient process for buyers. Lots are sold to the highest bidder and Bonas facilitates the collection of payment and delivery to winning bidder. Payment terms are five working days.

Market interest in the Gahcho Kué diamonds has been strong from the first sales in 2017 to now. On average, more than 150 of industry's leading companies place bids and over fifty individual companies win one or more parcels at each of MPD's tenders. These high levels of competition, combined within the open and transparent sales platform, deliver the highest, current market price and enable the company to maximize revenue.

MPD's customers include leading polished and jewelry manufacturers, rough traders and financiers, with operations in the major diamond markets of Belgium, India, Israel, UAE and China. This high caliber of participating companies indicates that industry leaders are investing in the product for the long term. MPD's direct and independent control over its sales provides a highly visible chain of custody.

19.8 Diamond Pricing

The experts from the Mountain Province Diamonds Sales & Marketing group in collaboration with WWW International Diamond Consultants Ltd., have provided updated diamond price baseline data. Modelled diamond prices for of the three Gahcho Kué Mine pits are updated based on:

- Market prices - average from June 2022 to May 2024 sales;
- Assortment distribution - average of production shipments from June 2023 to May 2024;
- Size frequency distribution - average of production shipments from June 2023 to May 2024; and
- Fancies and Specials - average of production shipments in 2023.

The QPs have relied upon and reviewed the underlying data and pricing valuation methodologies and are of the opinion that the modelled diamond prices used reflect reasonable prices to use for the GK Mine current and planned production.

Based on their outlook for the market, MPD has also provided a baseline 5.0% real growth factor in diamonds prices, year to year, to be applied to future production and the QPs are of the opinion that the MPD factor is reasonable.

19.8.1 Diamond Prices By Pipe

The following section outlines the diamond price assumptions by pipes for the Gahcho Kué Mine. The baseline price schedule (Table 19-1) is based on latest actual sales figures and reflects current market conditions.

Table 19-1: Baseline Diamond Pricing

Area	2024 Baseline Prices ($ USD)
5034-CP	112
5034-WP	84
5034-NE	85
5034-SWC	84
Hearne	86
Tuzo (including Wilson)	76

Source: MPD (2024)

20 ENVIRONMENTAL STUDIES, PERMITTING, & SOCIAL / COMMUNITY IMPACT

20.1 Permits

The Gahcho Kué Diamond Mine is in full compliance with all existing permits, authorizations and licences. Table 20-1 provides a summary of the regulatory permits, licences and authorizations applicable to the Gahcho Kué Mine. The mine is currently in compliance with all legal requirements.

Table 20-1: Existing Permits, Licences and Authorizations

Permits, Authorizations and Agreements	Legislation	Agency	Expiry and Tenure
Archaeological Research Permit	*NWT Archaeological Research Act*	Prince of Wales Northern Heritage Centre, Department of Education, Culture and Employment, GNWT	• Applied for and issued annually as needed for archaeological assessment or monitoring of the archaeological sites near the winter road and mine site
Wildlife Research Permit WL501014	*NWT Wildlife Act*	Department of Environment and Natural Resources, GNWT	• Expiry December 31, 2024 • Permit will be needed for each phase of mine life for a wildlife monitoring plan • Permits are issued every three years
General Wildlife Permit	*NWT Wildlife Act*	Department of Environment and Natural Resources, GNWT	• Expiry January 30, 2025 • Permit is issued annually for management of wildlife
Scientific Research Licence 16926	*NWT Research Act*	Aurora Research Institute	• Expiry December 31, 2024 • As needed for Socio-Economic and Traditional Knowledge field work and investigations, and aquatic and wildlife effects monitoring plans • Licences are issued annually
Surface Leases: 75N/6-2-2, 75N/6-3-2, 75N/6-5-2, 75N/6-7-2, 75N/6-8-2	*Territorial Lands Act and Regulations*	GNWT, Lands Department	• Expiry August 31, 2035 (in approval process)

Permits, Authorizations and Agreements	Legislation	Agency	Expiry and Tenure
Mineral Leases: 1. NT-4199, NT-4200, NT-4201, NT-4341 2. NT-4730, NT-4731, NT4732, NT-4736	*Territorial Lands Act* *Northwest Territories and Nunavut Mining Regulations*	Mineral and Petroleum Resources Directorate, Aboriginal Affairs and Northern Development Canada	• Expiry: 1. July 14, 2044 2. March 31, 2026 • Renewable for a further 21 years
Type A Water Licence MV2005L2-0015	*Mackenzie Valley Resource Management Act* *Northwest Territories Waters Act* *Northwest Territories Waters Regulations*	Mackenzie Valley Land and Water Board	• Expiry September 30, 2028 • Renewable for additional years to cover remaining phases of mine life (Licence tenure in renewals may be variable as dictated by the MVLWB)
Class A Land Use Permit MV2021D0009 (Mining and Milling Activities)	*Mackenzie Valley Resource Management Act* *Mackenzie Valley Land Use Regulations*	Mackenzie Valley Land and Water Board	• Expiry June 28, 2026. • Permits generally issued for five years, with a 2-year extension
Class A Land Use Permit MV2018C001 (Exploration Activities)	*Mackenzie Valley Resource Management Act* *Mackenzie Valley Land Use Regulations*	*Mackenzie Valley Resource Management Act* Mackenzie Valley Land Use Regulations	• Expiry March 28, 2025. • Permits generally issued for five years, possibility for a 2-year extension
Fisheries Authorization no. 03-HCAA-CA6-00057.1 for the destruction of habitat associated with the following activities: 1. Dewatering of Kennady Lake and Lake D1 2. Construction of dykes	*Fisheries Act*	Fisheries and Oceans Canada, Fish Habitat Management	• Completion of habitat destruction by December 31, 2020 (Completed) • Further authorization may be required, if additional fish habitat is harmfully altered, disrupted, destroyed
Approval for Constructing Works in Navigable Water 14-1087	*Navigable Waters Protection Act*	Transport Canada, Canadian Coast Guard	• Project completed through dyke construction in 2015
Approval of Waste Dump, Dam, or Impoundment Plan	*Mine Health and Safety Act (Territorial)*	GNWT, Chief Inspector, Workers Compensation Board	• Granted, no expiry indicated

Permits, Authorizations and Agreements	Legislation	Agency	Expiry and Tenure
Hazardous Waste Generation, Transport and Storage Permit NTG537	*Canadian Environmental Protection Act*	Department of Environment and Natural Resources Canada	• Granted, no expiry indicated
Hazardous Waste Storage Permit NTR138	*Canadian Environmental Protection Act*	Department of Environment and Natural Resources Canada	• Granted, no expiry indicated
Explosive Storage, Explosives Handling, Magazine Permits 2020-0029/0030/0031 Permit to Store Detonators 2020-0028	*Mine Health and Safety Regulations (Territorial)*	GNWT, Chief Inspector, Workers Compensation Board	• No-expiry
Division 1 Explosive Factory Licence 2020(04)-F1-076870/E	*Explosives Act Canada*	Natural Resources Canada, Metals and Minerals Sector	• Expiry April 30, 2025 • Permit for Manufacture of explosives
Registration of Fuel Storage Tanks	*Canadian Environmental Protection Act*	Environment Canada with cooperation from Aboriginal Affairs and Northern Development Canada	• Granted, no expiry indicated
Business Firearms Licence (12937071.0003	*Fire Arms Act*	Royal Canadian Mounted Police	• Expiry August 29, 2027
Ni Hadi Xa Agreement		Tlicho government, North Slave Métis Alliance, NWT Métis Nation, Lutsel K'e Dene First Nation, Deninu Kué First Nation, and Yellowknives Dene First Nation	• Expire after two years after the end of active closure

Source: De Beers (2024)

The Water Licence for the Gahcho Kué Diamond Mine (Type "A" Water Licence (MV2005L2-0015) sets out several conditions with respect to alteration, diversion or otherwise use water for the purpose of mining. The Water Licence was initially issued in 2014 has a term of 16 years and will require a renewal on or before September 2028.

The Gahcho Kué Diamond Mine is subject to the Paragraphs 34.4(2)(b) and 35(2)(b) *Fisheries Act* Authorization, Authorization No: 03-HCAA-CA6-00057.1 (Fisheries Authorization) issued by Fisheries and Oceans Canada (DFO, 2021). The Fisheries Authorization outlines the offset, monitoring and reporting requirements for the impact to fish and fish habitats as the result of the mine construction and operation. The onsite offset project includes the construction of fish habitat features within the re-established Kennady Lake at mine closure. The offsite offset project is achieved through the Redknife River Bridge (RKRB) project. The RKRB project will modify the current Redknife River Ridge on Mackenzie Highway (NWT No. 1) to allow for the passage of fish to the upstream reaches of the Redknife River. The RKRB project has the ability to provide more fish than the permanent lost from the mining activities.

The federal explosives permit approves and regulates the operation of the bulk explosives manufacturing facility and ensures the safety of personnel and property within specified radii surrounding the plant. This permit is issued to and holds responsible the explosives supplier as the owner and operator of the manufacturing plant on-site. Nothing in this permit precludes the requirements of the territorial *Mines Act* and regulations governing the storage, handling and use of the explosives in the mine.

The Gahcho Kué Diamond Mine’s closure and reclamation liabilities are covered by financial security provisions required under the Water Licence and land use permit.

20.2 Communities

The area around Gahcho Kué is sparsely populated. The closest community to the mine is Łutsel K’e, located 140 km southeast.

Historically, two broadly-defined groups of indigenous peoples have used the region surrounding Kennady Lake: The Dene and the Métis. A cultural heritage assessment and archaeological surveys were completed and approved as part of the original mine development planning.

During the mine’s approval process, De Beers committed to the priority hiring of northern residents and indigenous people born in the Northwest Territories and their descendants. The company’s recruitment policies are such that recruitment is carried out internally first, nationally and only then are external candidates sought. Candidates living in the North are given preference and in practice, the company gives preference to applicants from the surrounding communities. The company has committed to transporting employees who reside in local communities to and from the site. A Human Resources Strategy has been developed and made available to the public. In addition, a Socio-Economic agreement with the Government of the Northwest Territories has been signed. Impact Benefit Agreements (IBAs) are in place with the local indigenous communities and De Beers has an effective communities’ program that has been in place for several years and will continue through post-closure.

De Beers entered into impact benefit agreements as part of the mine development with six indigenous groups whose traditional lands include the Gahcho Kué:

- Tłı̨chǫ Government;
- Yellowknives Dene First Nation;
- Łutsel K’e Dene First Nation;
- Deninu Kué First Nation;
- North Slave Métis Alliance; and

- Northwest Territory Métis Nation.

De Beers additionally established a Socio-Economic Monitoring Agreement with the Government of the Northwest Territories. The Agreement outlines De Beers' commitments to local employment, economic benefits, cultural and community well-being and the monitoring of these requirements by a Board of community, government and De Beers' representatives.

De Beers also established an Environmental Agreement with five indigenous groups to provide funding for independent environmental monitoring and engagement; the Ni Hadi Xa.

20.2.1 Tłı̨chǫ Communities

Behchokǫ̀ - The largest Tłı̨chǫ community, is located on the northwest tip of Great Slave Lake, approximately 110 km (68 mi) northwest of Yellowknife. It has population of 1,746 based on the 2021 census.

Whatì - The second-largest Tłı̨chǫ community had a 2021 population of 543, the majority of whom are indigenous. A traditional lifestyle and economy are maintained in Whatì based almost solely on trapping, fishing, and hunting. Employment is primarily with the Tłı̨chǫ government, the GNWT, and the hamlet of Whatì. There is little in the way of private business besides a bed-and-breakfast and convenience store. There is some employment by the three diamond mines, with employees working on rotation.

Gamètì - Gamètì had a 2021 population of 280 people. Approximately 7% of the population is non-indigenous. Gamètì was a seasonal hunting camp used by Tłı̨chǫ people for many years and became a more permanent settlement in the 1970s. Fishing, hunting and trapping remain a large part of the local economy and way of life. Some residents work at the diamond mining operations. A local business development corporation offers business services to Gamètì residents and operates a motel, gas station, and a fishing camp.

Wekweètì - According to 2021 statistics, Wekweètì had a population of 109 people. Wekweètì's location on the Snare River was originally for fishing and travel. Today, the river is the location of a series of dams and powerhouses that provide hydroelectricity to Yellowknife and Behchokǫ̀. Tourism is strong with fishing and hiking outfitting services offered in the area.

20.2.2 The Yellowknife's Dene First Nation (YKDFN)

Dettah - Dettah is a small indigenous community of 192 people. Economic activities include government, private enterprise and mining-related work. Many residents of Dettah are employed in nearby Yellowknife. The YKDFN also has a business arm called the Det'on Cho Corporation whose mandate is to create training and job opportunities for Yellowknife's Dene and bring in revenue through profitable business ventures. The corporation includes over 20 companies in the construction transportation, logistics, and training and management sectors.

Ndilǫ - Ndilǫ is an indigenous community of 273 people located at the outskirts of Yellowknife, a short walk from Yellowknife's "Old Town". Some residents retain a traditional Dene lifestyle, fishing and hunting nearby, while others work in Yellowknife and at the diamond mines. The main occupations are related to government, private enterprise and mining-related work. There is a business arm, the Det'on Cho Corporation, as noted above for Dettah.

20.2.3 Łutsel K'e First Nations (LKDFN)

Łutsel K'e - This Dene community has approximately 33**3** residents. Languages spoken are Chipewyan and English. The local economy is largely traditionally based with hunting and trapping remaining key occupations for most residents. Arts and crafts are important as well. In recent years, efforts have been made to develop the tourism potential of the area, including part management by LKDFN of Thaidene Nëné National Park Reserve. A fishing lodge is located near the community and accommodation is available there. There is also some employment with the mines. The Denesoline Development Corporation, based in Łutsel K'e, manages the for-profit businesses owned by the Łutsel K'e membership and provides management services to the Limited Partnerships in which Denesoline Corporation has an interest.

20.2.4 North Slave Métis Alliance (NSMA)

Based in Yellowknife, the North Slave Métis Alliance (NSMA) is a non- profit organization whose core mandate is to represent the interests of the direct descendants of the Métis of the North Slave region of the Northwest Territories. Its objectives include negotiation and implementation of a land and resources agreement, founded on the principles of self-government and to promote the educational, economic, social and cultural development of the Métis of the region. The economic development arm of the NSMA is MÉTCOR Inc., formed to create business and employment opportunities for Métis in the North Slave region of the Northwest Territories. MÉTCOR's joint ventures and subsidiary companies provide a range of services to the territory's mining industry, creating direct and indirect employment and contracting opportunities for members of the NSMA.

20.2.5 Deninu Kų́ę́ First Nations (DKFN)

Deninu Kų́ę́ means "moose island" and the DKFN is a Dene First Nations band government southwest of the Slave River Delta on the south shore of Great Slave Lake. As of 2021, the DKFN has a total registered population of 974 people. DKFN belong to the Akaitcho Territory Government.

20.2.6 The Northwest Territory Métis Nation (NWTMN)

The Northwest Territory Métis Nation (NWTMN) represents the indigenous Métis of the South Slave region. They are the descendants of the Cree, Slavey and/or Chipewyan people of the South Slave region. The home communities of the NWTMN are Hay River, Denínu Kų́ę́ and Thebacha. The Métis currently and historically undertake hunting and trapping in the region. The NWTMN owns, operates or are in joint ventures in various businesses in the region.

20.3 Land Use and Mineral Tenure

The Gahcho Kué Mine operates within eight contiguous Mineral Lease parcels and five Surface Lease parcels administered by the GNWT as well as two Class A Land Use Permits (MV2021D0009 for mining and milling and MV2018D0001 for exploration) and a Water Licence (MV2005L2-0015). Further information on these permits, licences, and leases can be found in Section 4 and Table 4-2 of this report.

20.4 Environmental Management

The mine's environmental management system is ISO 14001 certified. A full-time environmental staff is responsible for monitoring, directing, reporting and communicating on environmental matters.

Key areas of environmental management and monitoring include:

- Ecological monitoring and sampling;
- Wildlife monitoring and management;
- Water flow management in open pit;
- Acid generation potential of waste rock;
- Sewage water treatment and management;
- Management and treatment of effluent water and removal suspended solids;
- Discharge of compliant effluent water (including ammonia, phosphorus and suspended solids) discharged to downstream environment;
- Monitoring of effluent water to determine potential toxicity to fish and confirm compliance with regulations and licence conditions; and
- Mine closure planning, reclamation research and site rehabilitation activities.

The complete range of environmental monitoring and study programs includes:

- Meteorology, Noise, Air Quality, and Dust mitigation and monitoring:
    - Measurement of wind speed and direction, temperature, humidity, precipitation, evaporation, solar radiation;
    - Noise monitoring;

  - Suppression of dust generated by the mine operation, dust sampling and dispersion behavior by season, and use of dust suppressants; and
  - Air quality monitoring.
- Site Water Quality:
  - Effluent sample collection and analysis;
  - Water levels in ponds and dams;
  - Makeup water usage; and
  - Site water balance and water use.
- Aquatic Effects:
  - Receiving environment sampling and analysis for water quality, phytoplankton, zooplankton, benthic invertebrates, sediment chemistry, fish health; and
  - Short- and long-term effects.
- Wildlife and Wildlife Habitat:
  - Project footprint, habitat, and vegetation monitoring;
  - Caribou, raptor and waterfowl, wolverine, grizzly bear, other wildlife; and
  - Accuracy of predictions, effectiveness of mitigation strategies.
- Fisheries:
  - Licence and fisheries authorization requirements;
  - Studies to determine metal concentrations in fish tissue; and
  - Habitat compensation monitoring.
- Reclamation research:
  - Re-vegetation test plots; and
  - Country rock test piles.

Water quality monitoring activity includes surveillance of water in and around the mine site, and an aquatic effects monitoring program that monitors for potential changes in the downstream aquatic environment. Results from water quality monitoring programs are reviewed to identify the need for any follow-up action.

Gahcho Kué wildlife and wildlife habitat monitoring programs are focused on assessing the potential effects of the mine on wildlife and wildlife habitat. This helps to determine if predictions made in the environmental assessment are accurate and helps assess the effectiveness of mitigation strategies. The mine staff conducts caribou, raptor, wolverine, grizzly bear, and other wildlife monitoring programs. Caribou are a key indicator species because of their cultural and economic value to northern residents as well as being of ecological importance. Low-impact behavioral surveys of caribou are undertaken at varying distances from the mine. The Ni Hadi Xa also undertake independent monitoring and review of data collection and reporting.

Every three years, mine environment staff undertake studies to measure dust deposition on lichen, both on- and off-site. Lichen is an important food source for caribou throughout the year. Gahcho Kué staff conducts engagement sessions and workshops to incorporate both scientific methods and traditional knowledge into the work.

Government inspections provide assurances that Gahcho Kué remains in compliance with the legal provisions of permits and licences related to land and water use and waste management.

20.5 Mine Closure Planning

The Gahcho Kué Diamond Mine has a mine closure plan and cost estimate in place for closing the mining areas, dismantling buildings, capping / sealing the processed kimberlite containment, reclaiming the land, breaching the dikes and creating pit lakes.

Financial security to cover the closure liability is in place and held by the Government of the Northwest Territories. In assessing the adequacy of the coverage, the territorial government obtained an independent review of the mine closure concept and cost estimate for the Gahcho Kué Diamond Mine from a recognized independent industry expert in 2014 and 2017 and as part of the recent land use permit and water license processes. The securities established considered this input and are understood to reflect the liability associated with the execution of the approved mine closure plans.

The Gahcho Kué Mine has had a mine closure plan in place since inception. The latest update to the plan was approved in 2021, while an Interim Closure and Reclamation Plan has been submitted in March 2024. The overall approach to reclamation and closure planning for Gahcho Kué conforms to both corporate and established international guidelines for mine closure. The closure plan is an ongoing work-in-progress with periodic updates based on long-term research underway in the field and a growing base of traditional knowledge gained from engagement with community members. As a requirement of the Type A Water Licence, a report is prepared annually to report to stakeholders on progress, research results, and ongoing changes to the interim closure plan.

The latest closure and reclamation security estimate for the Gahcho Kué Mine was included in the updated Water Licence (MV2005L2-0015) in March 2021 and land use permit (MV2021D0009) in June 2021 by the MVLWB. The MVLWB is authorized to set the security deposit amount by subsection 35 (1) of the *Waters Act* and the regulations promulgated under the *Act*. The purpose of the security deposit is to ensure funds are available to complete reclamation of the site, inclusive of the closure and post-closure phases.

The financial security estimate is divided into land and water, where the land securities are held under the land use permit (MV2021D0009) and the water securities are held under the Water Licence (MV2005L2-0015). These securities are further divided by significant operational stage. These stages, and additional Securities required at each stage, are outlined in Table 20-2.

In addition to this mine-related liability, security is required in relation to exploration Land Use Permit MV2018C0001 of $48,000.

Table 20-2: Summary of Construction and Operations Phase Security (C$) at Project Milestones (MVLWB, 2021)

Phased Payment Schedule	Cumulative Total ($M)	Land ($M)	Water ($M)
Construction Phase			
Prior to Initiating Construction Activities	15.4	11.8	3.6
One Year following the Initiation of Construction Activities	3.6	-	3.6
Operation Phase			
Prior to Year 1 of Operations	18.6	2.0	16.6
Prior to conducting activities identified in the January 19, 2017 Amendment Application for MV2005C0032	0.1	0.1	-
Prior to Year 5 of Operations	42.4	24.7	17.7
Within 90 days of the approval of Amendment #3 or Amendment #5 Application	1.2	0.5	0.7
Prior to Year 11 of Operations	21.2	3.3	17.9
Total	**102.5**	**42.3**	**60.2**

Source: MVLWB (2021)

20.6 Socio-Economic Agreement with GNWT

Early in the mine development, De Beers committed to northern training, employment, and business opportunities in addition to the environmental stewardship associated with sustainable development. To provide a formal mechanism for ensuring that environmental mitigation measures as well as social commitments were appropriately implemented and monitored, the environmental assessment of the Gahcho Kué Diamond Mine included a requirement for the aforementioned Socio-Economic Monitoring Agreement (SEMA).

20.7 Comment

The QPs are satisfied that the status of permitting, quality of environmental management, monitoring performance, positive community impacts and social acceptance support the economic viability of the estimated mineral reserves.

21 CAPITAL & OPERATING COSTS

21.1 Sustaining Capital Costs

Sustaining capital costs for the Gahcho Kué Mine are comprised of expansion capital, stay in business capital, capitalized waste and closure financial securities.

Life of mine capital projects at the Gahcho Kué Mine are referred to as Stay in Business (SIB) Capital and are forecasted on an annual basis with an emphasis placed on the upcoming budgeting year. Due to the seasonal nature of the ice road and optimum construction season, it is critical that these projects are scoped and budgeted in time to allow for procurement and mobilization to incorporate the winter road when required. Sustaining capital expenditures include:

- Purchase of additional or replacement surface mining equipment;
- Replacement of light vehicles;
- Process Plant equipment and pump rebuilds/replacement;
- Implementation of new technology for improved safety and operational performance;
- Value added infrastructure development projects identified to improve the operation as a whole; and
- Purchase of critical spares.

Capital cost assumptions in this report reflect the current life of mine SIB model for the mine as a whole.

Table 21-1: Sustaining Capital Expenditures Gahcho Kué Diamond Mine

Year	Unit	Closure Finance Cost	Stay In Business Capital - Cash Basis	Capitalized Waste	Total Capital Expenditure
2024	**C$M**	0.8	14.8	124.4	**140.0**
2025	**C$M**	2.9	30.0	166.8	**199.7**
2026	**C$M**	-	26.1	130.4	**156.5**
2027	**C$M**	-	6.6	99.1	**105.7**
2028	**C$M**	-	3.5	-	**3.5**
2029	**C$M**	-	4.3	-	**4.3**

Year	Unit	Closure Finance Cost	Stay In Business Capital - Cash Basis	Capitalized Waste	Total Capital Expenditure
2030	**C$M**	-	-	-	**-**
2031	**C$M**	-	-	-	**-**

Source: De Beers (2024)

21.2 Operating Costs

Operating costs include all normal, recurring costs of production including:

- Open pit mining (labour, maintenance, fuel, explosives);
- Processing (process consumables, maintenance, engineering);
- Site & Corporate:
  - Power generation;
  - Site services, support and logistics;
  - Site labor;
  - Technical services; and
  - Corporate and administrative functions.

Operating budgets are based on first principal calculations and historical performance provided by each respective department. Budgets are updated in detail annually to reflect changes in markets, consumable prices and site-specific operating parameters. Annual budgets are scrutinized internally by department heads, senior management and strategic business planners to ensure costs align with business objectives and sufficient detail is present. Operating budgets are finalized to ensure adequate time for the procurement process to take place prior to the winter road season.

The Gahcho Kué Mine operating costs consist of both variable and fixed cost items. Variable costs have a linear correlation to cost drivers such as open pit production, equipment hours or process throughput, while fixed costs do not.

For the mineral reserves in this report and the schedule of mining and processing envisioned for them, Table 21-2 depicts modelled estimates of the associated operating costs by year in Canadian dollars and in real terms.

Table 21-2: Modelled Operating Costs

Year	Unit	Open Pit Mining	Processing	Support Services	G&A	Total Operating Expense
2024	C$M	42.6	31.2	99.2	10.0	**183**
2025	C$M	66.8	46.0	144.6	13.7	**271.1**
2026	C$M	90.4	42.9	138.5	18.1	**289.8**
2027	C$M	95.6	46.8	135.7	13.6	**291.6**
2028	C$M	150.7	46.4	129.4	16.4	**342.9**
2029	C$M	78.6	38.1	120.4	32.2	**269.4**
2030	C$M	23.0	37.1	107.1	24.7	**191.8**
2031	C$M	6.8	25.6	46.8	14.3	**93.5**

Source: De Beers (2024)

21.3 Continuous Business Planning

While strategic business plan updates happen annually, continuous business planning activities including quarterly and monthly reforecasting are practiced at Gahcho Kué. Historically production deficits are re-distributed throughout the year at the end of each production month in an attempt to keep production targets in line with the strategic business plan (SBP). Additionally, weekly, monthly and quarterly plans are generated within each business unit to identify and track against key production metrics relative to that unit. Departmental forecasting and planning are conducted at these intervals to capture and mitigate operational challenges such as equipment outages, weather delays and other potential production delays. When re-forecasting within business units, if targets or goals become unreasonable given the operations various constraints, planning challenges are elevated to upper management and the strategic planning team where decisions can be made on changes to the SBP.

22 ECONOMIC ANALYSIS

22.1 Introduction

This economic analysis represents the cash flows of MPD and their respective ownership of the Gahcho Kué Mine.

Diamonds prices and markets have fluctuated since the previous 2022 Technical Report. This Technical Report sets new baseline diamond prices for 2024 based on actual sales and updated valuations of diamond bulk sample parcels.

22.2 Reserve Determination

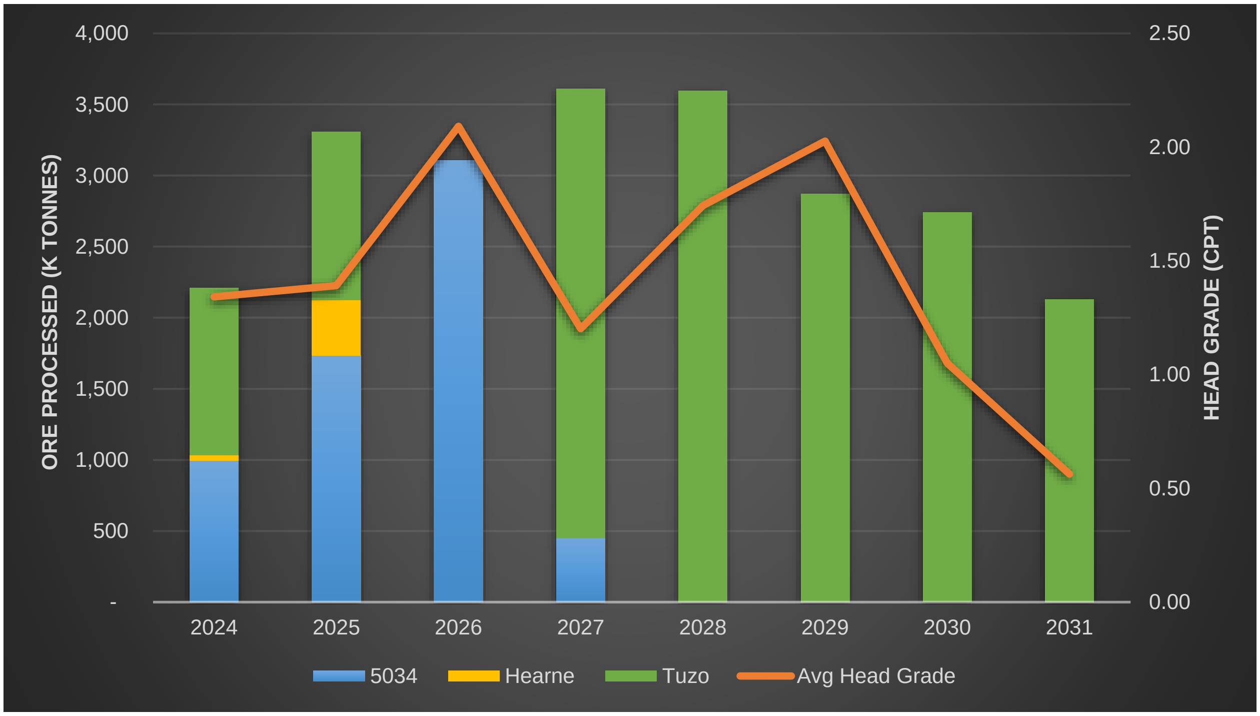
Due to the nature of mining kimberlite deposits at the Gahcho Kué Mine, cut-off grade economics are not used to convert ore into waste, or waste into ore. Kimberlite forms a discrete contact with the host granite rock clearly separating, in most cases visually, ore from waste. While the kimberlite itself may contain varying levels of granitic dilution, and varying levels of diamond grade and quality, diamonds are not found beyond the contact. Therefore, all Gahcho Kué kimberlites qualifying as reserves are mined with no selectivity, including zones of unexplained lower diamond content.

22.3 Discounted Cash Flow Analysis

An annual discounted cash flow analysis is presented in this report to demonstrate the economic viability of the entire mine operation to depletion of the current mineral reserves and validate the entire reserve determination stated in Section 14.5. The cash flow in this report is presented only as that portion owned by MPD (49%). Overall economic reserve viability is considered to be demonstrated by the resulting overall positive cash flows.

The mine output and process throughput assumptions used for this cash flow analysis are considered to be within the capabilities of the Gahcho Kué Mine. These rates are based on known and historical operating performance and reflect the intentions of the production plan outlined in Section 16. Inferred resources were removed from the production plan and treated as waste. Diamond recoveries are assumed to be 100%. The screen slot size for diamond recovery was 1.1 mm up to the end of 2026 and changed to 1.0 mm starting 2027 until the end of Mine life which matches the Mineral Reserve statement. The LOM process profile is shown in the Figure 22-1.

Figure 22-1: Ore Processing Profile



Operating costs are explained in detail in Section 21.2 and are inclusive of all fixed and variable costs directly associated with the mine operation including closure. Costs summarized in Section 21.2 do not include any government royalties, however, they have been accounted for in the cash flow analysis. No third-party royalties have been included in this cash flow analysis. Taxation and government royalty estimates were provided by MPD for their portion of the Mine.

Prices used for this analysis have been updated based on a combination of recent sales information and updated valuations of diamond bulk sample parcels. Average prices after escalation are summarized below:

- 5034 US$96.84/carat
- Hearne US$88.38/carat
- Tuzo US$89.95/carat

Future price escalation was estimated and a price escalator of 5.0% has been applied equally to all 3 pipes and assumes year by year escalation starting in calendar year 2024.

An exchange rate of 1.3 $C/$US between Canadian and U.S. currencies was provided by MPD.

Inflation has not been considered in this analysis as the analysis is discounted and all amounts are in present dollars.

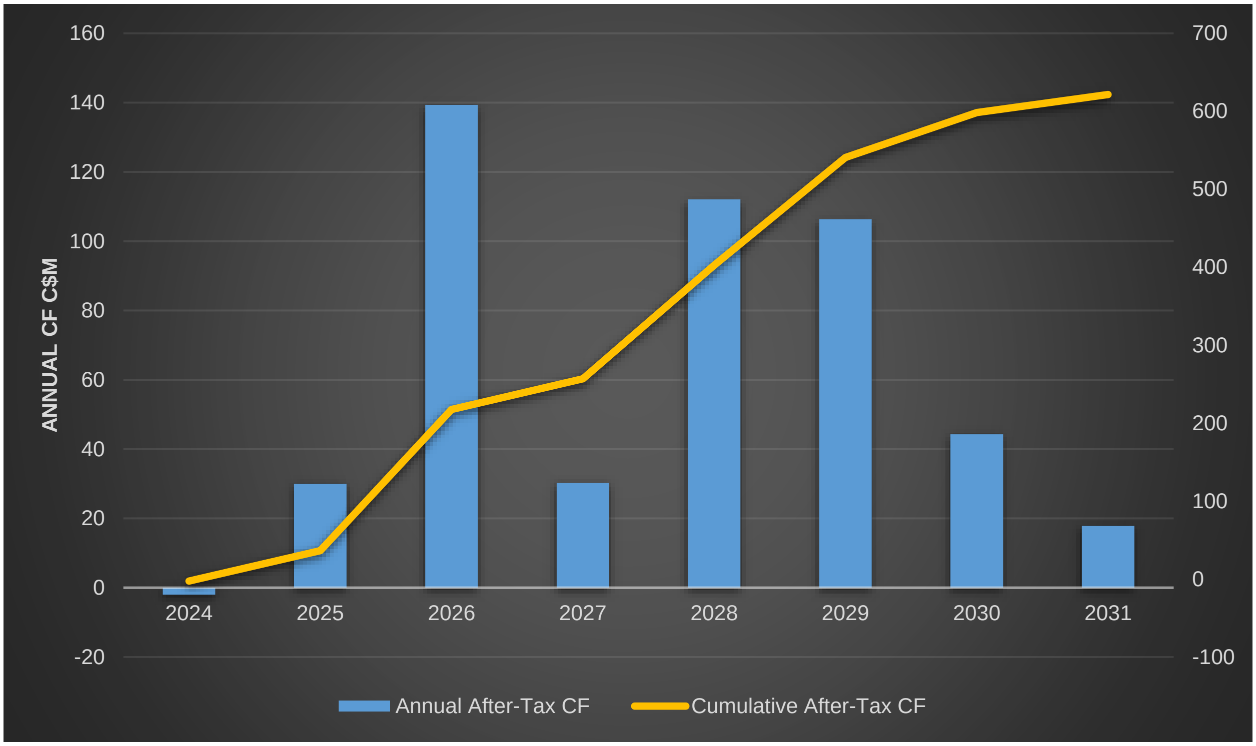
The discounted cash flow analysis indicates positive economics for the entire mineral reserves over the remaining mine life. Assuming a 7.5% discount rate, the MPD portion of the Mine presents an after-tax net present value (NPV) of C$481M / US$370M. The cashflow model is shown in Table 22-1 and Figure 22-2.

Table 22-1: Gahcho Kué Discounted Cash Flow Analysis

	Unit	Total	2024	2025	2026	2027	2028	2029	2030	2031
PRICE										
Average Carat Price	**US$/Carat**	**92.42**	**82.80**	**93.24**	**99.17**	**86.76**	**88.47**	**92.91**	**97.70**	**102.63**
5034	US$/Carat	**96.84**	86.3	96.9	99.2	99.2	0.0	0.0	0.0	0.0
Hearne	US$/Carat	**88.38**	86.0	90.3	0.0	0.0	0.0	0.0	0.0	0.0
Tuzo	US$/Carat	**89.95**	76.1	80.1	0.0	83.1	88.5	92.9	97.7	102.6
Price Escalation	Annual %	**5.0**	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
F/X Rate	USD:C	**0.77**	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
MINE PRODUCTION										
Waste Mined										
5034	k tonnes	**56,330**	15,003	34,381	6,946	-	-	-	-	-
Hearne	k tonnes	**594**	594	-	-	-	-	-	-	-
Tuzo	k tonnes	**104,507**	7,642	3,877	29,463	36,740	20,977	4,902	907	-
Total	**k tonnes**	**161,432**	**23,239**	**38,259**	**36,408**	**36,740**	**20,977**	**4,902**	**907**	**0**
Ore Mined										
5034	k tonnes	**6,108**	1,251	1,519	3,338	-	-	-	-	-
Hearne	k tonnes	**310**	310	-	-	-	-	-	-	-
Tuzo	k tonnes	**13,837**	679	828	846	2,736	5,523	3,225	-	-
Total	**k tonnes**	**20,254**	**2,240**	**2,347**	**4,183**	**2,736**	**5,523**	**3,225**	**0**	**0**
Total Material Mined										
5034	k tonnes	**62,438**	16,254	35,900	10,283	0	0	0	0	0
Hearne	k tonnes	**904**	904	0	0	0	0	0	0	0
Tuzo	k tonnes	**118,344**	8,320	4,705	30,308	39,476	26,500	8,127	907	0
Total	**k tonnes**	**181,686**	**25,479**	**40,605**	**40,592**	**39,476**	**26,500**	**8,127**	**907**	**0**
Strip Ratio	w:o	**8.0**	10.4	16.3	8.7	13.4	3.8	1.5	0.0	0.0
MILL FEED										
Material Treated										
5034	k tonnes	**6,282**	994	1,733	3,105	449	-	-	-	-
Hearne	k tonnes	**427**	37	390	-	-	-	-	-	-
Tuzo	k tonnes	**16,866**	1,178	1,184	-	3,162	3,598	2,873	2,741	2,130
Total	**k tonnes**	**23,574**	**2,210**	**3,307**	**3,105**	**3,611**	**3,598**	**2,873**	**2,741**	**2,130**
	k t/d	**8.1**	**6.1**	**9.1**	**8.5**	**9.9**	**9.9**	**7.9**	**7.5**	**5.8**
Bottom Cut-off	**mm**	**varies**	**1.1**	**1.1**	**1.1**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
Treated Material Grade										
5034	cpt	**2.00**	1.68	1.96	2.09	2.20	0.00	0.00	0.00	0.00
Hearne	cpt	**1.48**	7.80	0.88	0.00	0.00	0.00	0.00	0.00	0.00
Tuzo	cpt	**1.27**	0.85	0.73	0.00	1.06	1.74	2.03	1.05	0.56
Total	**cpt**	**1.47**	**1.34**	**1.39**	**2.09**	**1.20**	**1.74**	**2.03**	**1.05**	**0.56**
Recovered Carats										
5034	k carats	**12,547**	1,670	3,393	6,494	989	0	0	0	0
Hearne	k carats	**633**	288	345	0	0	0	0	0	0
Tuzo	k carats	**21,388**	1,006	863	0	3,350	6,272	5,821	2,877	1,198
Total	**k carats**	**34,568**	**2,965**	**4,601**	**6,494**	**4,339**	**6,272**	**5,821**	**2,877**	**1,198**
	US$M	**3,195**	**245**	**429**	**644**	**376**	**555**	**541**	**281**	**123**
Recovery	**%**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	k carats	**34,568**	**2,965**	**4,601**	**6,494**	**4,339**	**6,272**	**5,821**	**2,877**	**1,198**
REVENUE										
Payable	%	**100%**	100%	100%	100%	100%	100%	100%	100%	100%
	k carats	**34,568**	2,965	4,601	6,494	4,339	6,272	5,821	2,877	1,198
Gross Revenue	US$M	**3,195**	245	429	644	376	555	541	281	123
	C$M	**4,153**	319	558	837	489	721	703	365	160
Selling Costs	US$M	**0**	0	0	0	0	0	0	0	0
	C$M	**0**	0	0	0	0	0	0	0	0
Net Revenue	**US$M**	**3,195**	**245**	**429**	**644**	**376**	**555**	**541**	**281**	**123**
	C$M	**4,153**	**319**	**558**	**837**	**489**	**721**	**703**	**365**	**160**
NON-GOVERNMENT ROYALTIES										
Non-Government Royalties	% of Value	**0**	0	0	0	0	0	0	0	0
	US$M	**0**	0	0	0	0	0	0	0	0
	C$M	**0**	0	0	0	0	0	0	0	0
OPERATING COSTS										
Mining	C$/tonne	**23.52**	19.29	20.20	29.11	26.46	41.89	27.35	8.38	3.19
	C$M	**554**	42.6	66.8	90.4	95.6	150.7	78.6	23.0	6.8
Processing	C$/tonne	**13.32**	14.13	13.90	13.81	12.95	12.89	13.27	13.52	12.04
	C$M	**314**	31.2	46.0	42.9	46.8	46.4	38.1	37.1	25.6
Support Services	C$/tonne	**39.09**	44.90	43.72	44.59	37.57	35.96	41.92	39.07	21.96
	C$M	**922**	99.2	144.6	138.5	135.7	129.4	120.4	107.1	46.8

	Unit	Total	2024	2025	2026	2027	2028	2029	2030	2031
G&A	C$/tonne	**6.07**	4.50	4.14	5.81	3.78	4.57	11.24	9.01	6.71
	C$M	**143**	10.0	13.7	18.1	13.6	16.4	32.3	24.7	14.3
Subtotal - OPEX	**C$/tonne**	**82.00**	**82.83**	**81.96**	**93.31**	**80.76**	**95.30**	**93.78**	**69.98**	**43.89**
	US$M	**1,487**	**141**	**209**	**223**	**224**	**264**	**207**	**148**	**72**
	C$M	**1,933**	**183.0**	**271.1**	**289.8**	**291.6**	**342.9**	**269.4**	**191.8**	**93.5**
WORKING CAPITAL										
Working Capital	**US$M**	**0**								
	C$M	**0**								
OPERATING CASH FLOW	**US$M**	**1,708**	**105**	**220**	**421**	**152**	**291**	**334**	**134**	**51**
	C$M	**2,220**	**136**	**287**	**548**	**198**	**378**	**434**	**174**	**66**
CAPEX										
Development	C$M	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sustaining	C$M	**85.4**	14.8	30.0	26.1	6.6	3.5	4.3	0.0	0.0
Capitalized Waste	C$M	**520.6**	124.4	166.8	130.4	99.1	0.0	0.0	0.0	0.0
Closure	C$M	**3.7**	0.8	2.9	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal - CAPEX	**C$M**	**610**	**140.0**	**199.7**	**156.5**	**105.7**	**3.5**	**4.3**	**0.0**	**0.0**
Contingency	C$M	**0**								
Total CAPEX	**US$M**	**469**	**108**	**154**	**120**	**81**	**3**	**3**	**0**	**0**
	C$M	**610**	**140**	**200**	**156**	**106**	**4**	**4**	**0**	**0**
PROJECT PRE-TAX CASH FLOW	**US$M**	**1,239**	**-3**	**67**	**301**	**71**	**288**	**330**	**134**	**51**
	C$M	**1,611**	**-4**	**87**	**391**	**92**	**375**	**429**	**174**	**66**
Cumulative Cash Flow	**US$M**	**1,239**	**-3**	**64**	**365**	**436**	**724**	**1,054**	**1,188**	**1,239**
	C$M	**1,611**	**-4**	**83**	**474**	**566**	**941**	**1,371**	**1,544**	**1,611**
MPVD Portion										
MPVD Project Ownership	%	**49**	49	49	49	49	49	49	49	49
MPVD PRE-TAX CASH FLOW	**US$M**	**607**	**-1**	**33**	**147**	**35**	**141**	**162**	**65**	**25**
	C$M	**789**	**-2**	**43**	**192**	**45**	**184**	**210**	**85**	**33**
Cumulative Cash Flow	**US$M**	**607**	**-1**	**31**	**179**	**213**	**355**	**517**	**582**	**607**
	C$M	**789**	**-2**	**41**	**232**	**277**	**461**	**672**	**757**	**789**
MPVD Pre-Tax NPV @ 7.5%	**US$M**	**461**								
	C$M	**599**								
MPVD TAXES										
NWT Royalty	US$M	**67**	1	3	8	5	18	21	9	3
	C$M	**87**	1	4	10	6	24	27	11	4
NWT and Federal Taxes	US$M	**59**	0	0	0	0	11	34	13	4
	C$M	**76**	0	0	0	0	14	45	16	5
MPVD AFTER-TAX CASH FLOW	**US$M**	**481**	**-2**	**30**	**139**	**30**	**112**	**106**	**44**	**18**
	C$M	**626**	**-3**	**39**	**181**	**39**	**146**	**138**	**58**	**23**
Cumulative Cash Flow	**US$M**	**481**	**-2**	**28**	**167**	**198**	**310**	**416**	**460**	**478**
	C$M	**626**	**-3**	**36**	**218**	**257**	**403**	**541**	**598**	**621**
MPVD After-Tax NPV @ 7.5%	**US$M**	**370**								
	C$M	**481**								

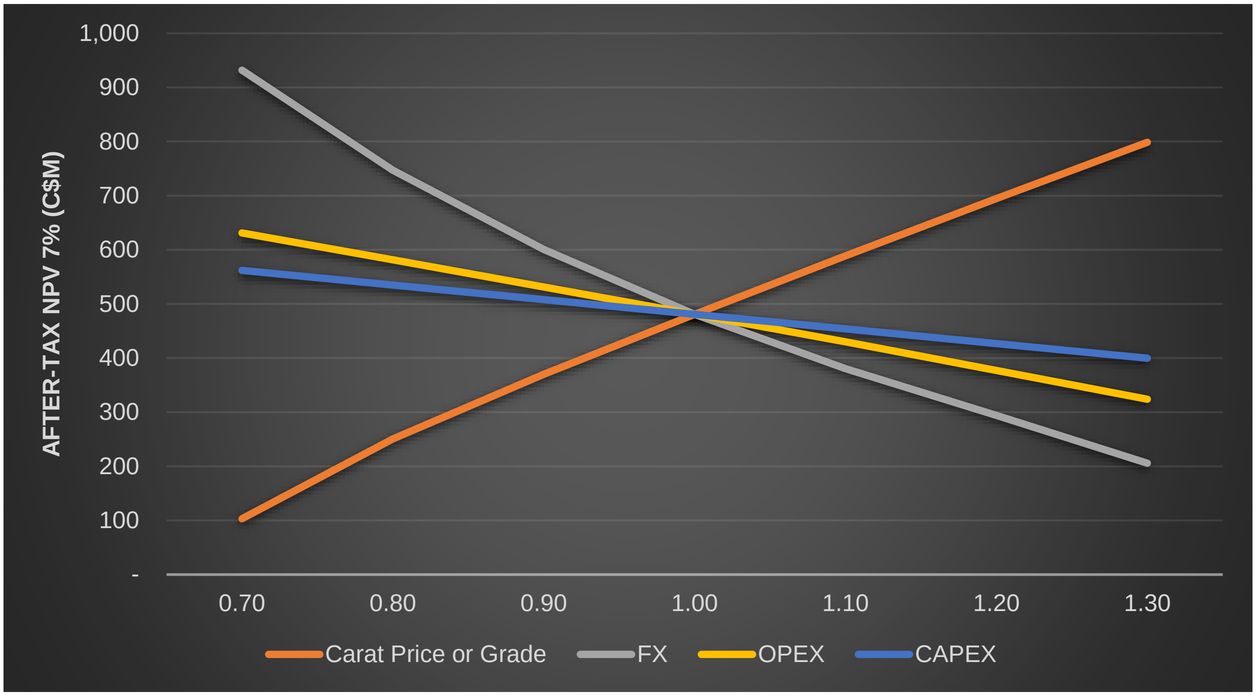
Figure 22-2: MPD LOM Post-Tax Cash Flow



22.4 Sensitivities

The economics of the Gahcho Kué Mine are sensitive to changes in various parameters. Using the $NPV_{7.5\%}$ as the basis of comparison, the impact to changes in key parameters were evaluated. Sensitivity to five key variables was assessed to ±30%, sensitivity to these variables is presented below in Figure 22-3.

Figure 22-3: MPD NPV Sensitivity Analysis



The majority of factors for which the Gahcho Kué Mine are most sensitive are considered to be external. Externally, the mine is most vulnerable to the foreign exchange rate, as products are sold in US$ and costs are incurred in C$. Additionally, the carat price, which is largely a product of external market influences, as well as the in-situ resource has a notable effect on Mine economics.

Internally the mine is sensitive primarily to operating costs. Given the remote location, and challenging climate, swings in costs for materials, fuel and labor have a substantial effect on Mine economics. Diligent control over operating efficiency is required to cushion against uncontrollable fluctuations in external sensitivities.

A 37% decrease in diamond price results in a break-even NPV for MPD.

23 ADJACENT PROPERTIES

In addition to their 49% share of the GKJV, MPD has 100% ownership of the neighboring Kennady North Property. The most recent resource statement was completed in 2019 by Aurora Geosciences Ltd. Table 23-1 summarizes the publicly disclosed resources mentioned above based on a 1.0 mm bottom cut-off.

Table 23-1: Kennady North Mineral Resources

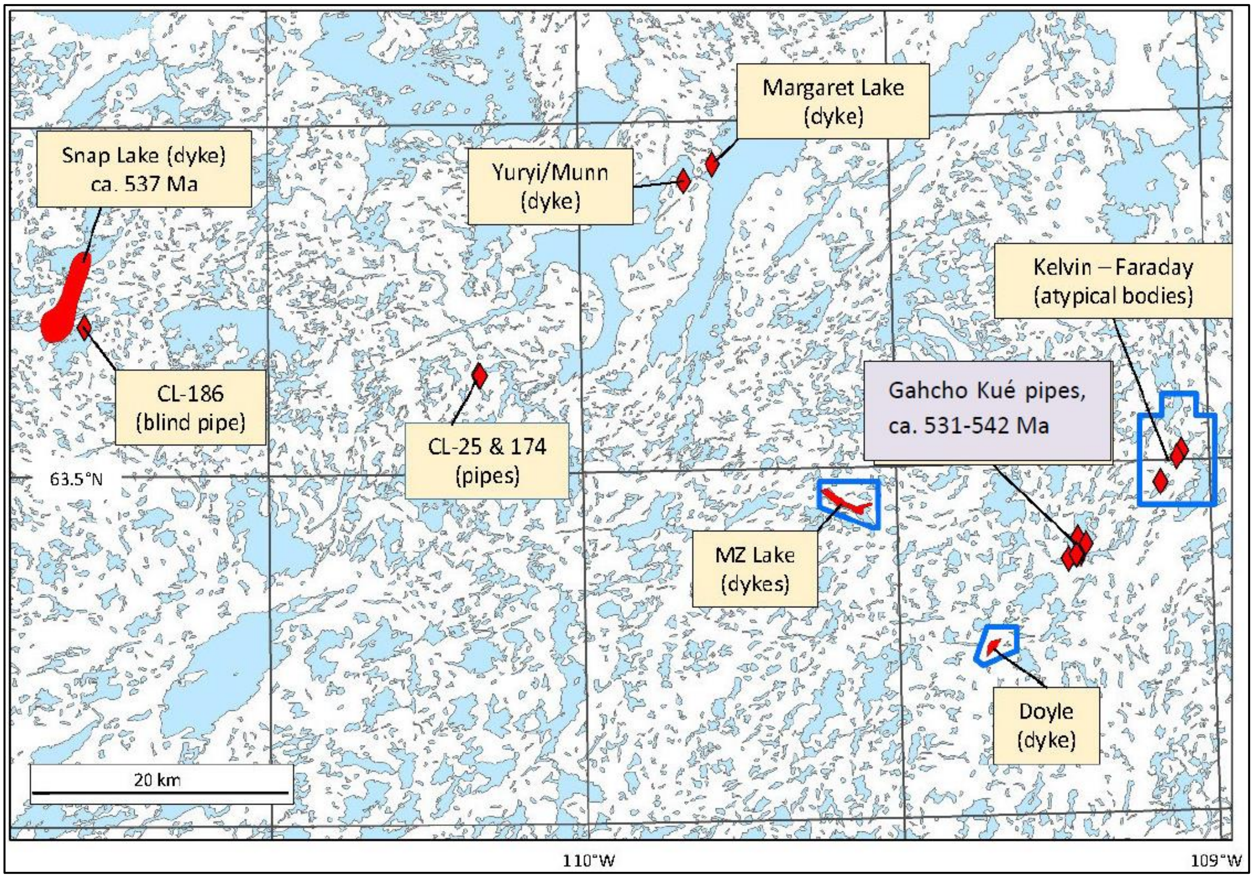
Deposit	Classification	Tonnes (Mt)	Grade (c/t)	Carats (Mcts)
Kelvin	Indicated	8.5	1.60	13.6
Faraday 2	Inferred	2.1	2.63	5.5
Faraday 3	Inferred	1.9	1.04	1.9

Note:

1. Mineral resources are not mineral reserves and do not have demonstrated economic viability.
2. Mineral resources are quoted above a +1.0 mm bottom cut-off and have been factored to account for diamond losses within the smaller sieve classes expected within a commercial process plant.
3. Indicated mineral resources are estimated, based upon quantity, grade or quality, densities, shape and physical characteristics, with sufficient confidence and detail to support mine planning and evaluation of the economic viability of the deposit. Indicated resource classification was provided November 17, 2017 (Vivian and Nowicki).
4. Average diamond value estimates for Kelvin and Faraday 3 are based upon a valuation model provided by WWW International Diamond Consultants Ltd in July 2017.
5. Inferred mineral resources are estimated on the basis of limited geological evidence and sampling, sufficient to imply but not verify geological grade and continuity. They have a lower level of confidence than that applied to an Indicated mineral resource and cannot be directly converted into a mineral reserve. The Faraday 2 resource classification is of February 28, 2019.
6. Reasonable prospects for economic extraction have been assessed for both open pit and underground mining at a conceptual level and form the basis for mineral resource estimation. A combination of open pit and underground mining methods has been assumed for Faraday 2. Open pit and underground mining operating costs of C$84 and C$152/t of ore feed, respectively, have been assumed in the analysis. A foreign exchange rate of 1.30 C$:US$ was used for this conceptual mining analysis.
7. Average diamond value estimates for the Faraday 2 update are based on a valuation model provided by WWW International Diamond Consultants Ltd in February 2019.
8. Mineral resources have been estimated with no allowance for mining dilution and mining recovery.

Source: MPD (2019)

Figure 23-1: Regional Kimberlite Distribution Relative to Gahcho Kué with Kimberlites Held by Kennady Diamonds Outlined in Blue



Source: MPD (2019)

24 OTHER RELEVANT DATA & INFORMATION

24.1 Reserve Exploitation to Date

Open pit mining and subsequent processing of kimberlite reserves has been continuously ongoing since September 2016. Total reserve exploitation as of Dec 31, 2023 has been reported in Table 24-1 and Table 24-2.

Table 24-1: Total Reserve Exploitation as of December 31, 2023

Deposit	Mined Tonnage (Mt)	Mined Grade (c/t)	Mined Carats (Mcts)
5034	15.55	1.81	28.12
Hearne	6.19	2.09	12.93
Tuzo	3.31	1.09	3.61
Total	**25.06**	**1.78**	**44.66**

Source: De Beers (2023)

Table 24-2: Actual Reconciled Recovered Carats as of December 31, 2023

		2016	2017	2018	2019	2020	2021	2022	2023
Reconciled Carats Recovered	Mcts	0.85	5.93	6.94	6.82	6.52	6.23	5.52	5.65

Source: De Beers (2023)

24.2 Historical Mine Performance

The historical performance of the mine is shown in Table 24-3.

Table 24-3: Historical Performance

Gahcho Kué Mine	Unit	2018	2019	2020	2021	2022	2023
Total Kimberlite Mined	Tonnes	2,583,138	3,017,639	3,080,684	3,124,813	3,624,642	3,005,170
Waste Mined	Tonnes	38,535,873	39,977,503	32,583,631	31,885,597	29,833,540	33,419,519
Processed	Tonnes	3,194,360	3,580,551	3,245,941	3,082,572	3,102,219	3,230,552
Carats Recovered	Carats	6,936,894	6,820,631	6,518,261	6,229,042	5,519,309	5,646,919
Reserve Carat Ratio (RvCR)	Ratio (%)	118	97	98	98	97	101

Notes:

1. Carats recovered include incidentals.
2. Performance for 2023 reflects Actuals for January-September 2023 and V13Budget for October to December 2023.

Source: De Beers (2023)

25 INTERPRETATIONS & CONCLUSIONS

The QPs are satisfied with the status of the mineral tenure, regulatory permits, environmental and social stewardship and workplace quality. A strong record, both during development and operations presents a positive outlook in these areas moving forward.

The geological setting, mineralization, structures and the kimberlite bodies themselves are well understood. A high level of diligence from the mine's technical team continues to refine this knowledge as the mine evolves.

Qualified technical staff are employed at the Gahcho Kué Mine and additional diamond and mining industry experts are available from outside the mine. The geological database is conscientiously managed in-house. All modelling is performed within a framework of both peer and expert review. Audits have been performed by third parties to provide assurance of the reliability and completeness of the data for resource estimation.

Classification of mineral resources into indicated and inferred categories is consistent with CIM Definition and Standards on Mineral Resources and Mineral Reserves.

The Gahcho Kué Processing plant has operated continuously since commissioning in September 2016 and has since exceeded 'nameplate' capacity. Nevertheless, the operation remains focused on improving the efficiency of the process to reduce costs and increase productivity.

The mine engineering design, operating parameters and economic assumptions provide a credible basis for the conversion of mineral resources into mineral reserves. A number of years of operating history is now available. Forward looking views of pricing and exchange rates are established and approved at the corporate level and considered reasonable by the QPs.

Notwithstanding the impossibility of assaying for diamonds and the difficulty of closing reconciliation loops, efforts to reconcile the models to actual production have been diligent and rigorous. Learnings are providing valuable feedback for keeping the resource and reserve models updated and relevant as prediction tools for the mine.

The Gahcho Kué Mine is a fully functioning mine with the majority of infrastructure in place for LOM operations. There is a well-defined sustaining capital plan for remaining infrastructure developments required to maintain continuous production. Projected operating and capital costs appear realistic, and the proposed schedules appear reasonable for the methods employed and planned resources.

The price forecasts are based on MPDs sales experience and are a best estimate to provide external long-term pricing trends.

With the exception of the last year of production (2030), cash flows for the Gahcho Kué Mine are projected to be positive in every year of the mine life. The LOM cash flow position supports the definition of mineral reserves for all three deposits.

25.1 Risks

As with most mining Projects, there are many risks that could affect the economic viability of the Mine. Many of these risks are based on lack of detailed knowledge and given that the Gahcho Kué Mine is in operation, these risks can be managed as more sampling, testing, design, and detailed engineering are conducted.

The most significant potential risks associated with the Mine are operating and capital cost escalation, unforeseen schedule delays, and changes in regulatory requirements. These risks are common to most mining Projects, many of which can be mitigated with adequate engineering, planning, and pro-active management.

External risks are, to a certain extent, beyond the control of the Mine proponents and are much more difficult to anticipate and mitigate, although, in many instances, some risk reduction can be achieved. External risks are things such as the political situation in the Mine region, diamond prices, exchange rates, and government legislation. These external risks are generally applicable to all mining Projects. Negative variance to these items from the assumptions made in the economic model would reduce the profitability of the mine and the mineral resource and reserve estimates.

25.2 Opportunities

Opportunities include:

- Developing and incorporating the Kennady Diamonds kimberlites to extend the current mine life. The Kennady Diamonds kimberlites have both inferred and indicated resources located approximately 10 km northeast of Gahcho Kué, with information found in Section 23; and

- Further de-bottleneck thickening and the DMS modules; Addition of a waste sorter circuit; Addition of an XRT plant to take some of the load of the DMS modules; Addition of a second 16 m thickener.

At the time of this report, no permitting, detailed engineering, or detailed economic analysis has been published to conclude the economic feasibility of these opportunities.

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27 UNITS OF MEASURE & ABBREVIATIONS

Abbreviation	Units of Measure	Abbreviation	Units of Measure
'	Foot	Ha	Hectare
"	Inch	hp	Horsepower
µm	Micron (micrometre)	in	Inch
A	annum	kg	Kilogram
A	Ampere	km	Kilometre
Ac	Acre	km^2	Square kilometre
Ag	Silver	kPa	Kilopascal
Au	Gold	kt	Kiloton
c/t	Carats per tonne	kW	Kilowatt
cfm	Cubic feet per minute	kWh	Kilowatt hour
cm	Centimetre	L	Liter
Cu	Copper	lb	Pound
d/a	Days per annum	m	Metre
Dmt	Dry metric tonne	M	Million
ft	Foot	m^2	Square metre
ft^3	Cubic foot	m^3	Cubic metre
g	Gram	min	minute
h	Hour	ppm	Parts per million
mm	Millimetre	psi	Pounds per square inch
MPa	Mega Pascal	S	Second
mph	Miles per hour	T	Metric tonne
M t/a	Million tonnes per annum	t/d	Tonnes per day
Mt	Million tonnes	t/h	Tonnes per hour
°C	Degree Celsius	V	Volt
°F	Degree Fahrenheit	W	Watt
oz	Troy ounce	wmt	Wet metric tonne
Pa	Pascal	Zn	Zinc
ppb	Parts per billion		

28 CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON

MICHAEL MAKARENKO, P.ENG.

I, Michael Makarenko, P.Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Technical Report, Gahcho Kué Mine, Northwest Territories Canada", with an effective date of April 22, 2024 prepared for Mountain Province Diamonds;
2. I am currently employed as President, Engineering with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a graduate of the University of Alberta with a B.Sc. in Mining Engineering, 1988. I have practiced my profession continuously since 1988. I have worked in technical, operations and management positions at mines in Canada, the United States, Brazil and Australia. I have been an independent consultant for over seventeen years and have performed mine design, mine planning, cost estimation, operations & construction management, technical due diligence reviews and technical report writing for mining projects worldwide;
4. I am a Registered Professional Mining Engineer in Alberta (#48091), British Columbia (#49223) and the Northwest Territories (#1359);
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 education, experience, independence and affiliation with a professional association, I fulfil the requirements of a Qualified Person as defined in National Instrument 43-101;
6. I am independent of the Issuer and related companies applying all of the tests set out in Section 1.5 of NI 43-101;
7. I have not visited Gahcho Kué Mine;
8. I am responsible for all Sections of this Technical Report;
9. I have had prior involvement on various engineering studies with the property that is the subject of this Technical Report;
10. I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the Technical Report and that this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading; and
11. I have read National Instrument 43-101, Standards for Disclosure of Mineral Properties and Form 43-101F1. This technical report has been prepared in compliance with that instrument and form.

Effective Date: April 22, 2024
Signed Date: September 30, 2024

(Original signed and sealed) "Michael Makarenko, P.Eng."

Michael Makarenko, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

DINO PILOTTO, P.ENG.

I, Dino Pilotto, P.Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Technical Report, Gahcho Kué Mine, Northwest Territories Canada" (the Technical Report) with an effective date of April 22, 2024 prepared for Mountain Province Diamonds;
2. I am currently employed as Vice President, Engineering with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a graduate of the University of BC with a B.A.Sc degree in Mining and Mineral Process Engineering (1987). I have practiced my profession continuously since 1987; I have been involved with mining operations, mine engineering and consulting covering a variety of commodities at locations in North America, South America, Africa, and Eastern Europe;
4. I am a Registered Professional in the Yukon (#2527), Nunavut and BC;
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 in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101;
6. I am independent of the issuer, vendor, property and related companies applying all of the tests in set out in Section 1.5 of NI 43-101;
7. I have visited the Gahcho Kué Mine on February 9, 2022;
8. I am responsible for all Sections of this Technical Report;
9. I have had prior involvement on various technical reports and engineering studies with the property that is the subject of this Technical Report;
10. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
11. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1. This technical report has been prepared in compliance with that instrument and form.

Effective Date: April 22, 2024
Signed Date: September 30, 2024

(Original signed and sealed) "Dino Pilotto, P.Eng."

Dino Pilotto, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

TYSEN HANTELMANN, P.ENG.

I, Tysen Hantelmann, P.Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled "NI43-101 Technical Report, Gahcho Kué Mine, Northwest Territories Canada" (the Technical Report) with an effective date of April 22, 2024 prepared for Mountain Province Diamonds;
2. I am currently employed as Vice President, Engineering with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a graduate of the University of Alberta with a B.Sc degree in Mining Engineering (2001). I have practiced my profession continuously since 2002; I have been involved with mining operations, mine engineering and consulting covering a variety of commodities at locations in North America, South America, and Eastern Europe;
4. I am a Registered Professional in the Northwest Territories and Nunavut (L2810), Yukon and Alberta;
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 in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101;
6. I am independent of the issuer, vendor, property and related companies applying all of the tests in set out in Section 1.5 of NI 43-101;
7. I have visited the Gahcho Kué Mine on March 10, 2015;
8. I am responsible for all Sections of this Technical Report;
9. I have had prior involvement on various technical reports and engineering studies with the property that is the subject of this Technical Report;
10. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
11. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1. This technical report has been prepared in compliance with that instrument and form.

Effective Date: April 22, 2024
Signed Date: September 30, 2024

(Original signed and sealed) "Tysen Hantelmann, P.Eng."

Tysen Hantelmann, P.Eng.