



Diavik Diamond Mine

Northwest Territories, Canada

NI 43-101 Technical Report



Prepared for:
Dominion Diamond Corporation
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Report date:
27 March 2017

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Effective date:
31 January 2017

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1. SUMMARY

The Diavik Diamond Mine is an operating mine producing rough diamonds at its remote site at Lac de Gras in the Northwest Territories.

The Diavik Diamond Mine is operated through a joint venture (the “Diavik Joint Venture”) between Dominion Diamond Diavik Limited Partnership (“DDDLP”) and Diavik Diamond Mines (2012) Inc. (“DDMI”), where DDDLP holds an undivided 40% ownership interest in the assets, liabilities and expenses of the Diavik Diamond Mine. DDDLP is headquartered in Yellowknife in the Northwest Territories, Canada and is a wholly-owned subsidiary of Dominion Diamond Corporation. The mine is managed and operated on behalf of the Diavik Joint Venture by DDMI, a wholly owned subsidiary of Rio Tinto plc of London, England. Notwithstanding corporate name changes, ownership and management of the mine and the joint venture have not changed during the project.

The mine plan is built on four diamond-bearing kimberlite pipes. Three of the pipes are in production and the fourth is in development. The Diavik Diamond Mine has operated continuously since production began in 2003. The current mine life is anticipated to extend to 2025. Historical output of rough diamonds to date (100% JV basis) has been consistently in excess of 6 million carats per year (except for 2009) following the first year of production in 2003.

The geological setting of the area and the geology of the production pipes are well understood. Drilling for delineation and sampling has continued beyond the initial feasibility study and is embraced as an ongoing operating activity in support of resource modeling, production forecasting and business planning. Methods used for sample collection, handling, security, preparation and analysis are consistent with industry practice for this type of deposit. Procedures are documented and well-established, and are among industry best practices.

Mining began in 2003 by open pit. Production from underground commenced in 2010. A managed transition took place during which underground mining rates “ramped up” while open pit mining approached planned completion. In late 2012, open pit mining ended and the Diavik Diamond Mine became a fully underground mine. The underground mine is mechanized and the workings are accessed via portals. Two of the pipes are mined by sub-level retreat. The third pipe requires a backfill method and is mined by blast hole stoping with cemented rock-fill. Declining underground output in later years is expected to be supplemented by a concurrent return to open pit mining for the fourth pipe beginning in 2018.

All four kimberlite pipes are located in water under a large lake. Mining has been enabled by building and maintaining dikes to hold back the water until the end of mining when the lake can be restored.

A processing plant on site recovers the rough diamonds from the kimberlite. The mine site includes all other supporting facilities and infrastructure required to support round-the-clock mining and processing at a remote arctic site. This includes processed kimberlite containment,

water treatment, diesel and wind power generation, shops and offices, accommodations and an airport.

All permits and approvals necessary to operate the Diavik Diamond Mine are in place. Upcoming renewals are known and proactive efforts are underway. Environmental stewardship is sound and in good standing with no breaches or non-conformances. Mine reclamation research is being conducted and interim mine closure plans are in place with financial security arrangements established to satisfy the estimated reclamation liabilities.

Support from surrounding communities has been unflagging. The mine continues to deliver economic and social benefits to the region that are expected to endure beyond the life of the mine.

The fundamentals of the global diamond market are believed to be sound, based on forecasted demand growing while sources of new supply remain flat.

Financial analysis of the operation (100% JV basis) over the life of the mine (including closure) indicates that the estimated mineral reserves are economically viable. As of December 31, 2016, the estimated mineral reserves for the Diavik Diamond Mine (100% JV basis) are:

| Pipe | Proven Mineral Reserve | | | Probable Mineral Reserve | | | Proven and Probable Mineral Reserve | | |
|--------------------------|------------------------|------------|-------------|--------------------------|------------|-------------|-------------------------------------|------------|-------------|
| | Mt | cpt | Mct | Mt | cpt | Mct | Mt | cpt | Mct |
| A154N Blast hole stoping | 3.6 | 2.4 | 8.5 | 4.6 | 2.3 | 10.8 | 8.2 | 2.3 | 19.3 |
| A154S Sub-level retreat | 0.3 | 3.2 | 1.0 | 0.7 | 3.7 | 2.8 | 1.1 | 3.6 | 3.8 |
| A418 Sub-level retreat | 1.8 | 4.1 | 7.5 | 1.9 | 3.1 | 6.0 | 3.7 | 3.6 | 13.4 |
| A21 Open pit | 3.3 | 2.8 | 9.4 | --- | --- | --- | 3.3 | 2.8 | 9.4 |
| Stockpile | 0.03 | 2.9 | 0.1 | --- | --- | --- | 0.03 | 2.9 | 0.1 |
| Totals | 9.1 | 2.9 | 26.4 | 7.3 | 2.7 | 19.5 | 16.3 | 2.8 | 46.0 |

Note:

(1) Totals may not add up due to rounding

(2) Tonnes are reported as millions of metric tonnes, diamond grades as carats per tonne (cpt), and contained diamond carats as millions of contained carats.

As of December 31, 2016, the estimated remaining mineral resources for the Diavik Diamond Mine (100% JV basis) are:

| Pipe | Measured Mineral Resource | | | Indicated Mineral Resource | | | Inferred Mineral Resource | | |
|---------------|---------------------------|------------|------------|----------------------------|------------|------------|---------------------------|------------|------------|
| | Mt | cpt | Mct | Mt | cpt | Mct | Mt | cpt | Mct |
| A154N | --- | --- | --- | --- | --- | --- | 0.5 | 2.3 | 1.1 |
| A154S | --- | --- | --- | --- | --- | --- | 0.4 | 2.8 | 1.2 |
| A418 | --- | --- | --- | --- | --- | --- | 0.2 | 2.5 | 0.5 |
| A21 | --- | --- | --- | 0.4 | 2.4 | 0.9 | 0.8 | 3.5 | 2.7 |
| Totals | --- | --- | --- | 0.4 | 2.4 | 0.9 | 1.9 | 2.9 | 5.5 |

Note:

- (1) Totals may not add up due to rounding
- (2) Mineral resources that are not mineral reserves do not have demonstrated economic viability.
- (3) Mineral resources are reported exclusive of mineral reserves, and represent material remaining after mineral reserves have been removed for reporting separately elsewhere.
- (4) Tonnes are reported as millions of metric tonnes, diamond grades as carats per tonne (cpt), and contained diamond carats as millions of contained carats.

The classification of the mineral reserves into proven and probable categories and the mineral resources into measured, indicated and inferred categories is consistent with the CIM Definition Standards for Mineral Resources and Mineral Reserves.

Further conversion of resources to reserves is expected in due course as ongoing work plans progress. Specific and more immediate recommendations include further work to define pipe shape ahead of mine development in all four project pipes. The bottoms of three of the pipes would benefit from additional sampling to better define grades at depth. The pipes would also benefit from additional plant-run data for their production profiles in terms of stone sizes and quality, which would contribute to more accurate pricing/valuation forecasts. Finally, from the mining perspective, mine dilution in the sub-level retreat will require persistent efforts to maintain the accuracy of current estimates.

Overall, the authors of this technical report consider that the estimated mineral reserves and the remaining mineral resources for the Diavik Diamond Mine contained in this technical report are appropriate and reasonable estimates for the Diavik Diamond Mine.

2. INTRODUCTION

Mr. Calvin Yip, P.Eng. and Ms. Kari Pollock, P.Geo. have prepared this technical report on the mineral resources and mineral reserves of the Diavik Diamond Mine in the Northwest Territories, Canada.

The mine has operated and produced continuously since 2003 with a current mine plan which extends until 2025. The mine is operated through the Diavik Joint Venture, which is an unincorporated joint arrangement between DDDL and DDMI, whereby DDDL and DDMI each hold a 40% and 60% interest, respectively, in the assets, liabilities and expenses of the Diavik Diamond Mine. DDDL is headquartered at Yellowknife, Canada and is a wholly-owned subsidiary of Dominion Diamond Corporation. This ownership arrangement has remained unchanged through the mine's development. The mine is managed and operated on behalf of the Diavik Joint Venture by DDMI, a wholly owned subsidiary of Rio Tinto plc of London, England.

This technical report is prepared for Dominion Diamond Corporation and is intended to be a Form 43-101F1 Technical Report for the purposes of National Instrument 43-101 to provide updated background and supporting information on the mineral resource and mineral reserve at the Diavik Diamond Mine as at December 31, 2016.

This report is an update of the previous technical report dated March 18, 2015 on the Diavik Diamond Mine.

The qualified persons ("QPs") for this Technical Report, as defined in National Instrument 43-101 – *Standards of Disclosure for Mineral Projects*, are:

- Calvin Yip, P.Eng., Principal Advisor, Strategic Planning, Diavik Diamond Mines (2012) Inc.
- Kari Pollock, P.Geo., Senior Resource Geologist, Diavik Diamond Mines (2012) Inc.

The QPs are long-term employees at DDMI and work full-time for the mine.

Mr. Yip is familiar with the Diavik Diamond Mine through continuous employment with DDMI since 2001. As Chief Mine Engineer from 2001 to 2004, he participated in planning for the mine's 2003 start-up and oversaw the mine geology and engineering functions that supported the new operation. As production stabilized he joined DDMI's finance group in 2004 and in 2005 he became Manager, Strategic Planning. He was involved in feasibility studies, technical and economic evaluation, and business analyses to develop the long-range plan for the mine. In late 2007 he was appointed Principal Advisor, Strategic Planning, and is active in the ongoing evaluation of mine development options and future directions for Diavik. Mr. Yip works at DDMI's Yellowknife office and interacts regularly with key mine site staff on matters relating to geology, engineering, mine planning, costs, and strategic development. His most recent site visit was on May 9, 2016, to examine options for extracting more of the A21 pipe and then to tour the ore processing plant particularly to witness waste dilution being handled in the process streams.

Ms. Pollock has worked at the Diavik mine site since early 2005. Her scope of personal inspection of the site has been undertaken as part of her role as the Senior Resource Geologist. She has planned drilling programs and attended at drilling sites, performed as well as supervised core logging, planned and visited bulk sampling areas, overseen sample processing and laboratory testing, designed and managed data systems, performed geological modeling and geostatistical estimations, inspected mineralization in active mining areas, discussed mine geology and geometallurgy with other site staff, supported exploration programs and worked with project development staff, prepared program budgets, performed monthly and annual reconciliations, and participated in peer reviews and third-party audits. Ms. Pollock works regular rotations at the mine site.

Information for this report comes from several sources including:

- the QPs' knowledge and observations;
- other Diavik staff;
- internal data;
- memoranda and technical reports listed under SECTION 27 – REFERENCES.

3. RELIANCE ON OTHER EXPERTS

Diamond Markets and Outlook

Discussion of the diamond market and outlook in this Technical Report (SECTION 19 – MARKET STUDIES AND CONTRACTS) is based on a general review of public research papers from separate organizations each having acknowledged capability for market research and analysis:

- THE DIAMOND INSIGHT REPORT 2016, De Beers Group of Companies, 2016;
- THE GLOBAL DIAMOND INDUSTRY 2016, Bain & Company, Inc., 2016;
- DIAMOND MARKET OUTLOOK, ABN-AMRO Bank N.V., 21 November 2016.

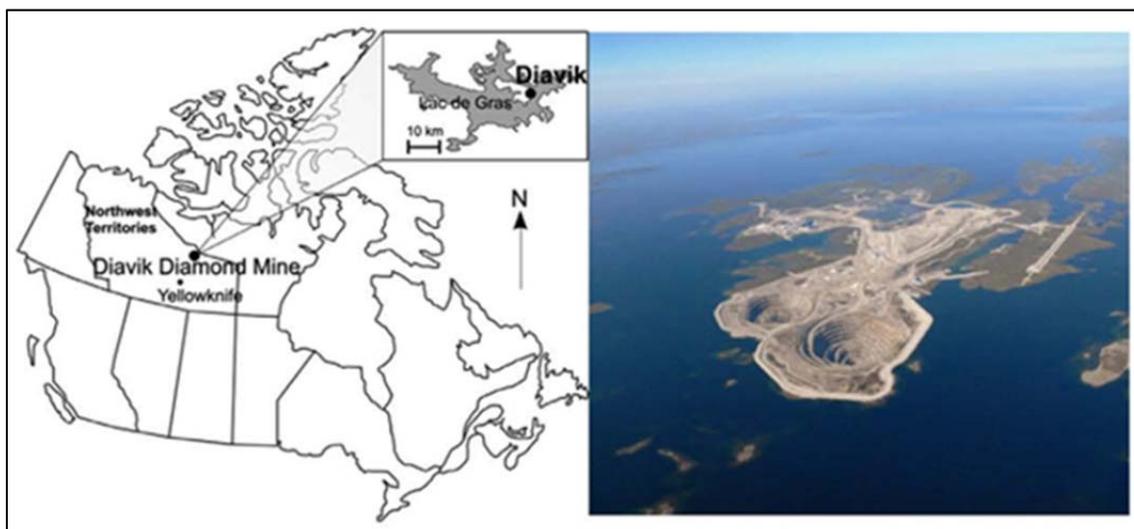
Diamond Pricing

For the economic analysis contained in this Technical Report (SECTION 22 – ECONOMIC ANALYSIS), guidance on diamond price assumptions was received from Dominion Diamond Corporation. The assumptions do not reflect forward-looking prices being assumed by either Dominion Diamond Corporation or DDMI.

4. PROPERTY DESCRIPTION AND LOCATION

4.1 Location

The Diavik Diamond Mine is located in Canada's Northwest Territories, approximately 300 km Northeast of the city of Yellowknife on the arctic barrenlands. The mine is situated on a 20 sq. kilometre island in Lac de Gras, at latitude 64° 30' N and longitude 110° 20' W. Four diamond bearing kimberlite pipes are located just off the eastern shore of the island all within five kilometres of each other.



DDMI circa 2010, illustration only – not to scale

Figure 1 Property location map

4.2 Project Ownership

The Diavik Joint Venture consists of the Diavik mine and the Diavik exploration property. On the property, diamond production originates from the Diavik Diamond Mine.

The Diavik Diamond Mine is 40% owned by DDDL, a wholly owned subsidiary of Dominion Diamond Corporation which is headquartered in Yellowknife in the Northwest Territories, Canada. Sixty percent of the mine is owned by DDMI, a Canadian subsidiary of Rio Tinto plc of London, U.K. DDMI is the operator and manager of the Diavik Diamond Mine and surrounding exploration properties.

4.3 Mineral Tenure

The Diavik Joint Venture, encompassing the Diavik Diamond Mine and the Diavik exploration property, holds 153 mining leases representing a land package of 330,230 acres.

All of the Diavik Joint Venture's mineral claims that had been staked have been converted to long-term mining leases following completion of legal surveys and acceptance by the Mining

Recorder's Office. DDMI, as the operator and manager of the Diavik Joint Venture, is listed as the owner of the leases. Fees are payable for leases and these are paid annually.

Government administration of mining leases and mineral claims has been recently devolved from the federal department of Aboriginal Affairs and Northern Development Canada, and is now managed by the Ministry of Industry, Tourism and Investment of the Government of the Northwest Territories.

The leases pertaining to the Diavik Joint Venture including the Diavik Diamond Mine are shown in Table 1.

Table 1 Property tenure

| Lease Number | Owner Name | Percentage | NTS Map Sheet(s) | Issued Date | Expires Date | Acres | Hectares | District |
|--------------|----------------------------------|------------|---------------------|-------------------|-------------------|--------|----------|----------|
| 3539 | Diavik Diamond Mines (2012) Inc. | 100 | 076D 08, 09 | July 16, 1996 | July 16, 2017 | 2,697 | 1,091 | NT |
| 3540 - 3541 | Diavik Diamond Mines (2012) Inc. | 100 | 076D 08, 09 | February 24, 1997 | February 24, 2018 | 5,319 | 2,153 | NT |
| 3710 - 3711 | Diavik Diamond Mines (2012) Inc. | 100 | 076D 08 | November 19, 1997 | November 19, 2018 | 4,605 | 1,864 | NT |
| 3712 | | | 076D 08, 09 | | | 2,671 | 1,081 | |
| 3713 - 3716 | | | 076D 09 | | | 10,392 | 4,205 | |
| 3719 | | | 076D 08 | | | 2,572 | 1,041 | |
| 3760 - 3766 | | | 076D 08 | | | 2,348 | 950 | |
| 3767 | | | 076D 08, 09 | | | 2,559 | 1,036 | |
| 3768 - 3773 | | | 076D 08 | | | 15,458 | 6,256 | |
| 3931 | Diavik Diamond Mines (2012) Inc. | 100 | 076D 09 | April 17, 2001 | April 17, 2022 | 2,434 | 985 | NT |
| 4093 - 4095 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 11 | January 16, 2002 | January 16, 2023 | 7,764 | 3,142 | NT |
| 4097 - 4101 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 05 | March 5, 2002 | March 5, 2023 | 12,788 | 5,175 | NT |
| 4102 | | | 076C 05, 06 | | | 2,526 | 1,022 | |
| 4103 | | | 076C 06 | | | 2,677 | 1,083 | |
| 4104 - 4108 | | | 076C 12 | | | 12,946 | 5,239 | |
| 4109 | | | 076C 11, 12 | | | 2,388 | 966 | |
| 4110 | | | 076C 11 | | | 2,674 | 1,082 | |
| 4111 - 4119 | | | 076D 08 | | | 23,718 | 9,598 | |
| 4120 | | | 076C 05, 076D 08 | | | 2,608 | 1,055 | |
| 4121 - 4128 | | | 076C 05 | | | 20,780 | 8,409 | |
| 4129 | | | 076C 05, 06 | | | 2,609 | 1,056 | |
| 4130 | | | 076C 06 | | | 2,531 | 1,024 | |
| 4134 - 4135 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 05 | January 16, 2002 | January 16, 2023 | 4,571 | 1,850 | NT |
| 4136 | | | 076C 05, 076D 08 | | | 1,298 | 525 | |
| 4137 | | | 076C 05 | | | 2,168 | 877 | |
| 4138 | Diavik Diamond Mines (2012) Inc. | 100 | 076D 08 | March 5, 2002 | March 5, 2023 | 2,596 | 1,051 | NT |
| 4139 | | | 076C 05, 076D 08 | | | 2,687 | 1,087 | |
| 4140 - 4143 | | | 076C 05 | | | 10,575 | 4,280 | |
| 4144 - 4145 | | | 076D 08 | | | 1,744 | 706 | |
| 4146 - 4147 | | | 076D 16 | | | 4,838 | 1,958 | |
| 4148 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 12 | January 16, 2002 | January 16, 2023 | 1,093 | 442 | NT |
| 4152 | | | 076C 12, 076D 09 | | | 1,227 | 497 | |
| 4153 - 4157 | | | 076C 12 | | | 457 | 185 | |
| 4164 - 4168 | | | 076C 12 | | | 12,149 | 4,917 | |
| 4174 - 4178 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 06 | March 5, 2002 | March 5, 2023 | 13,013 | 5,266 | NT |
| 4179 - 4180 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 05, 12 | January 16, 2002 | January 16, 2023 | 4,551 | 1,842 | NT |
| 4181 - 4185 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 05, 12 | March 5, 2002 | March 5, 2023 | 12,956 | 5,243 | NT |
| 4186 | | | 076C 05, 06, 11, 12 | | | 2,390 | 967 | |
| 4187 | | | 076C 06, 11 | | | 2,677 | 1,083 | |
| 4192 - 4193 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 12 | January 16, 2002 | January 16, 2023 | 490 | 198 | NT |
| 4197 - 4198 | | | 076C 12 | | | 4,906 | 1,985 | |
| 4202 - 4204 | | | 076C 12 | | | 611 | 247 | |
| 4208 - 4211 | | | 076C 12 | | | 8,698 | 3,520 | |
| 4212 | | | 076C 05, 12 | | | 2,266 | 917 | |
| 4213 | | | 076C 05 | | | 2,381 | 964 | |
| 4214 - 4216 | | | 076C 12 | | | 944 | 382 | |
| 4217 | | | 076C 05, 12 | | | 244 | 99 | |
| 4218 - 4219 | | | 076C 12 | | | 4,693 | 1,899 | |
| 4228 - 4229 | | | 076C 10 | | | 5,304 | 2,146 | |

Continues...

Table 1 continued

| Lease Number | Owner Name | Percentage | NTS Map Sheet(s) | Issued Date | Expires Date | Acres | Hectares | District |
|--------------|----------------------------------|------------|------------------|------------------|------------------|--------|----------|----------|
| 4234 - 4235 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 12 | March 5, 2002 | March 5, 2023 | 1,525 | 617 | NT |
| 4266 - 4268 | | | 076C 06 | | | 7,670 | 3,104 | |
| 4269 - 4272 | | | 076C 06, 11 | | | 10,321 | 4,177 | |
| 4325 - 4328 | | | 076C 06 | | | 10,256 | 4,150 | |
| 4400 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 11 | January 16, 2002 | January 16, 2023 | 2,622 | 1,061 | NT |
| 4432 - 4436 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 11 | March 5, 2002 | March 5, 2023 | 13,082 | 5,294 | NT |
| 4437 - 4440 | | | 076C 06 | | | 10,391 | 4,205 | |
| 4441 - 4442 | | | 076C 06, 11 | | | 5,146 | 2,083 | |
| 5194 - 5196 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 11 | December 8, 2010 | December 8, 2031 | 7,852 | 3,178 | NT |
| 5380 | Diavik Diamond Mines (2012) Inc. | 100 | 076C 11 | December 8, 2010 | December 8, 2031 | 2,774 | 1,123 | NT |

Figure 2 shows a map of the leases held by DDMI. All of the mineral resources and mineral reserves described in this report, and all of the mine workings and associated facilities are contained within the property holdings described here. There are no known surface rights issues affecting the mine facilities or access to the mineral resources and mineral reserves described in this report. Ongoing Joint Venture exploration areas, separate from the active mining operation and not included in the mine plans or this report, are also located entirely within the lease boundaries.

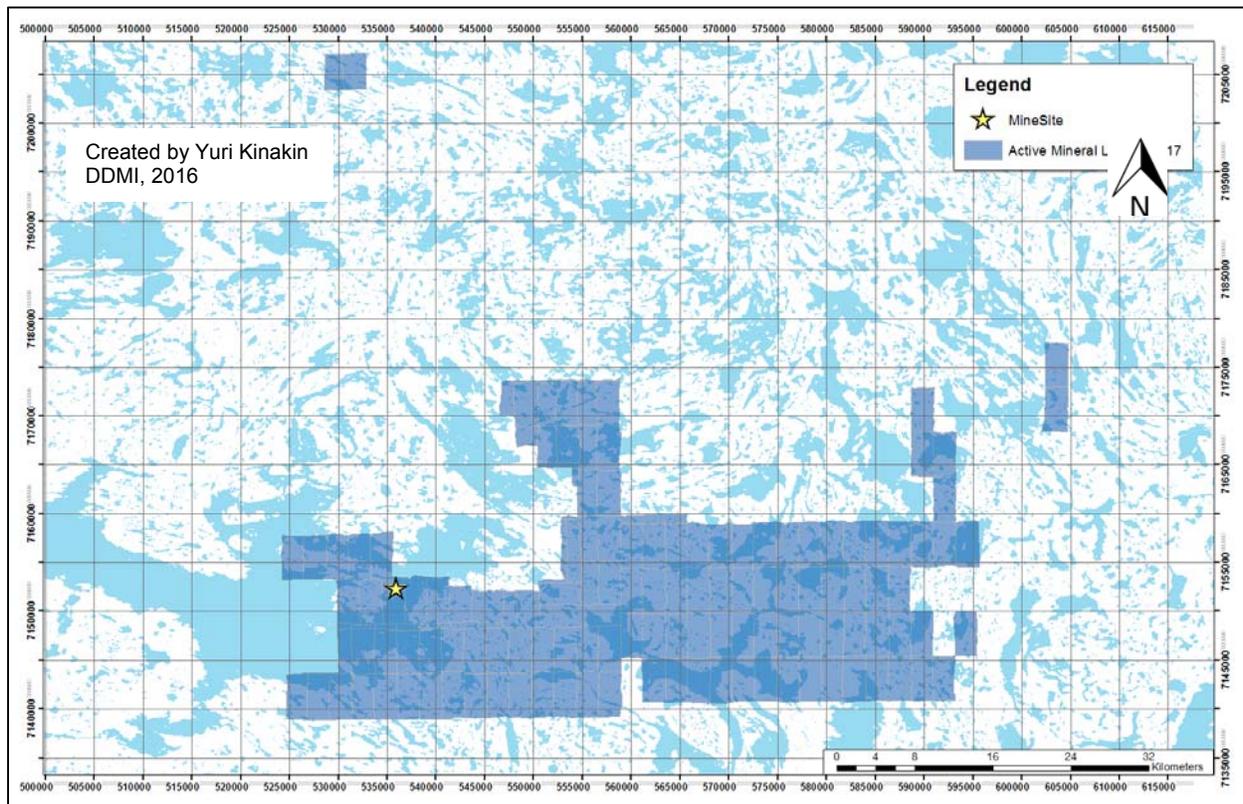


Figure 2 Property tenure

4.4 Surface Rights

On March 31, 2000, the federal government issued DDMI 30-year land leases for the mine site (all expire March 29, 2030) under the *Territorial Lands Act*.

4.5 Water Rights

In August 2000, a Class “A” Water Licence was granted under the *Mackenzie Valley Resource Management Act*. Various fisheries authorizations were granted under the *Fisheries Act*, and a Navigable Waters Permit (expires August 2030) was issued under the *Navigable Water Protection Act*.

The Class “A” Water Licence was renewed successfully in 2015 for a further eight years to October 2023.

4.6 Royalties

There are two net revenue royalties to third parties (outside of the Diavik Joint Venture) relevant to current production from the Diavik Diamond Mine, varying from approximately 1% to 2% of net revenues depending on where the production has come from.

Royalties are also payable to the government. Mines in the Northwest Territories that are situated on Crown lands must pay royalties based on the value of the output of the mine each year. Currently, such royalties payable are the lesser of:

- 13% of the value of output of the mine that is subject to royalty; or
- An amount based on a sliding scale of royalty rates dependent upon the value of output of the mine, ranging from 5% for value of output between \$10,000 and \$5 million to 14% for value of output over \$45 million.

4.7 Permits

A summary of permits and authorizations issued by jurisdiction is listed here:

- Water Licence W2007L2-0003 Wek’èezhii Land and Water Board
- Fisheries Authorization Fisheries and Oceans Canada
- Navigable Waters Permit Transportation Canada
- Explosive Permit Natural Resources Canada
- Land Use Wek’èezhii Land and Water Board
- Land Lease Northwest Territories Department of Lands

DDMI on behalf of the Diavik Diamond Mine is in full compliance with all existing permits, authorizations and licences.

For the fourth kimberlite that is in development, A21, permits are up to date.

- Water Licence — An A21 dike, open pit and waste-rock pile are specifically included in the scope of the Water Licence which sets out conditions for altering, diverting or otherwise using water for mining.
- Fisheries Authorization — An A21 dike and open pit are also specifically included in the scope of the Fisheries Authorization which governs the monitoring and management of fish and their habitats.
- Navigable Waters Permit — This approval is administrative in nature, providing Transport Canada with advance (2–3 months) notice of an undertaking and a set of dike design drawings stamped by the engineer of record.
- Explosives Permit — The contracted explosives supplier, as the owner and operator of the bulk explosives manufacturing facility at the Diavik Diamond Mine, holds and is responsible for the federal explosives permit that governs the safety of personnel and property within specified radii surrounding explosives facilities. Since the start of the Diavik Diamond Mine in 2003, DDMI has worked with the explosives supplier to maintain the explosives permit through all of the mine's planned developments.
- Land — The A21 project is located on existing land leases that provide access and use of the land for the purpose of mining. There are no associated terms and conditions that restrict construction and operation of an A21 dike and open pit.

4.8 Environmental Liabilities

The Interim Closure and Reclamation Plan ("ICRP") for the mine was submitted to and accepted by federal regulators prior to production start-up. Scientific research in a number of areas has been ongoing as well as community engagement and a quest for more inclusion of Traditional Knowledge. ICRP Progress Reports are prepared and submitted annually to report on the progress of these initiatives, and to date there have been three updates and resubmissions of the ICRP itself.

Mine closure plan submission, research programs, closure cost estimate, liability assessment and financial security for closure obligations are in place and up to date.

To date there have been no breaches or non-compliances in environmental or closure related regulations.

4.9 Comment

In the opinion of the QPs, the matters discussed in this section support the estimation of mineral resources and mineral reserves, based on the following:

- Ownership and management of the Diavik Diamond Mine is clear, well established, and free of dispute;
- Mining tenure, surface and water rights held are valid and sufficient to support the estimation and ongoing development of the mineral resources and mineral reserves;

- Renewal processes are in place, have been successful, and are ongoing;
- The required royalty payments to third parties and to the government are being honoured;
- All necessary permits and licences are in good standing;
- There are no outstanding environmental liabilities or deficiencies in mine closure planning and provisioning;
- To the extent known, there are no other significant factors and risks that may affect access, title, or the right or ability to perform work on the property.

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

5.1 Accessibility

The Diavik Diamond Mine is a remote site with strictly controlled access and security. Access to the mine is by air year-round and by a 425 km ice road that is constructed annually in winter and that operates for only eight to ten weeks between January and March. Most of the bulk supplies required for the mine each year including fuels, lubricants, construction materials and explosives are transported over this road. A number of other mining, exploration and outfitting camps rely on this yearly 'lifeline' to/from Yellowknife. For year-round air access, the Diavik Diamond Mine has a 1,600 m long airstrip able to accommodate passenger aircraft and large Hercules-class transports. Personnel are transported to and from the site from several northern communities by small commuter aircraft. Also, weekly service to and from Edmonton is provided by Boeing 737 jet aircraft and Avro RJ85 regional jet.

Most employees work a rotation of two weeks at the mine followed by two weeks at home. Managerial staff work four days at the mine followed by three days off-site. Corporate staff in Yellowknife work Mondays to Fridays.

5.2 Climate

This area is within the Canadian sub-arctic where cold winter conditions predominate for the majority of the year. Approximately five months of the year have spring/summer/autumn weather where daytime temperatures are above freezing.

The mean annual temperature at the Diavik property is -12° C. Temperatures in summer months can exceed 25° C. The average minimum temperature is -35° C in January, although extremes have reached below -50° C.

The site is generally windy with velocities averaging 20 km/h on typical days and the 100 year extreme exceeding 90 km/hr.

The mean annual precipitation is relatively sparse at approximately 375 mm, 60% of which falls as snow.

Available daylight ranges from a minimum of four hours per day in December to a maximum of 22 hours in June.

The mine operates 24 hours per day year-round, except during whiteout conditions when lack of visibility imposes unsafe working conditions. Whiteouts typically last 8 to 12 hours and occur about four times in the winter each year.

5.3 Local Resources and Infrastructure

The Diavik Diamond Mine is located 300 km northeast of Yellowknife, capital city of the Northwest Territories. Yellowknife is home to roughly half of the territory's population of approximately 40,000 people, and is the Diavik Diamond Mine's nearest major centre for transportation and commerce. Yellowknife offers most of the basic amenities found in any urban centre. The nearest large city to Yellowknife is Edmonton, located due south via an 18-hour drive or by several daily flights offered by four commercial airlines including Air Canada.

The remoteness of the mine requires it to operate as a self-contained community, generating its own electricity and potable water, managing its own wastes including sewage and effluent treatment, maintaining emergency response and medical services, offering site-based recreation and education facilities, providing wholesome meals and single-occupancy quarters. All of the mine workings, tailings impoundments, mine rock stockpiles, ore processing operations, shops and other service facilities/utilities including dining and accommodations are integrated at a single site. Figure 3 is an aerial view of the mine site's general layout.



DDMI 2012 aerial photographic image showing current 2017 site layout

Figure 3 Site plan – Diavik Diamond Mine

Approximately 48% of the mine's operating workforce of over 900 people are residents of the Northwest Territories or Nunavut. These northern employees come from a dozen communities as well as Yellowknife. Approximately forty percent of the northern resident employees, or 19% of the total workforce, is aboriginal. The proportion of non-aboriginal workers is a mixture of ethnic backgrounds and includes northern residents, residents of other parts of Canada, and a small number of internationals working under visas.

DDMI is party to a socio-economic monitoring agreement ("SEMA") with the territorial government and certain aboriginal groups within the region to formalize employment and training opportunities, business development, and capacity-building initiatives. Participation Agreements that were agreed prior to the mine start-up are long-term and are ongoing between DDMI and the Tli Cho Government, the Yellowknives Dene First Nation, the North Slave Métis Alliance, the Kitikmeot Inuit Association, and the Lutsel K'e Dene First Nation.

The workplace is non-unionized and cross-cultural, based on care and respect with zero tolerance for harassment, discrimination or gender bias. In attracting and retaining workers, the Diavik Diamond Mine competes with two other operating diamond mines in the region and in past years has also been impacted by labour demand from the oil sands operations in Alberta to the south.

Local northern businesses provide a significant share of necessary goods and services in support of the Diavik Diamond Mine. Prevailing percentages of spending with northern businesses (northern spending for 2015 was 67%) supports the mine's life-to-date average of 72% of total spending since 2000 being with northern businesses with more than half of that northern total being with aboriginal enterprises and their joint venture companies.

5.4 Physiography

The Lac de Gras region is north of the tree line in the barrenlands and is characterized by a profusion of shallow lakes large and small, impeded drainage, low relief, and a mix of hummocky boulder-strewn terrain and rock exposures.

The elevation of the flat topography typically ranges between 400 to 435 m above sea level.

Lac de Gras varies from 4 m to more than 25 m deep in the area of the Diavik kimberlites, and forms the headwaters of the Coppermine River system.

Lake trout, whitefish, arctic grayling, cisco and slimy sculpin are among the fish that can be found in the lakes. The population of birds and waterfowl is small as they are mainly summer residents although owls, hawks, falcons and ravens can be present year-round. Caribou are sometimes seen around the mine site as they migrate through the area to access spring calving and winter forage grounds. Grizzly bears, wolves, foxes, wolverines, arctic hare and other small mammals are also present at various times of the year.

The area was studied extensively during 1994 to 1997 to develop a knowledge baseline for the local and regional environment surrounding the Diavik Diamond Mine.

5.5 Comment

In the opinion of the QPs:

- The land is able to accommodate the facilities, infrastructure and activities necessary to support current and planned development of the mineral resources and reserves;
- The mine is not lacking any necessary facilities, infrastructure or logistical arrangements;
- The seasonal climates and wildlife of the region are well understood and managed through comprehensive procedures and processes, appropriately designed facilities, well-planned logistics, and employee communication/awareness.
- The mine has a permanent workforce sufficient to operate, with turnover and attrition being offset by ongoing attraction and retention efforts;
- A base of local businesses and joint ventures exists in the region that provides many goods and services to the mine, leaving only a fraction of requirements brought in from outside of the region;
- There is reasonable expectation that land, infrastructure, workforce, and local and external goods and services will continue to support the development of the mineral resources and mineral reserves of the Diavik Diamond Mine.

6. HISTORY

6.1 Ownership History

Aber Resources Ltd. began staking mineral claims in the Lac de Gras area of the Mackenzie Mining District, Northwest Territories, in November 1991. Through an option agreement dated June 1, 1992, Kennecott Canada Inc. (“Kennecott”) acquired the right to earn a 60% joint venture interest in the Diavik claim blocks of Aber Resources Ltd. Kennecott exercised its rights under the option agreement following the discovery of four diamond-bearing kimberlite pipes just off the eastern shore of East Island in Lac de Gras. The Diavik Joint Venture was consummated on March 23, 1995, with Kennecott initially appointed as manager.

Kennecott assigned its rights and interests to Diavik Diamond Mines Inc. on November 29, 1996. Both Kennecott and Diavik Diamond Mines Inc. are subsidiaries of UK-based Rio Tinto plc.

Aber Resources Ltd. became Aber Diamond Corporation and assigned its rights and interests to a separate entity formed for the project, Aber Diamond Mines Ltd., on January 30, 1998. In November 2007, Aber Diamond Corporation changed its name to Harry Winston Diamond Corporation after acquiring Harry Winston Inc., a luxury jewelry and watch retail business, in 2006. Subsequently, Aber Diamond Mines Ltd. changed its name to Harry Winston Diamond Mines Ltd. In a March 26, 2013 announcement, Harry Winston Diamond Corporation changed its name to Dominion Diamond Corporation after completing a divestment of the Harry Winston luxury brand segment. The Diavik activities of Harry Winston Diamond Mines Ltd. were transferred to DDDLPL.

Diavik Diamond Mines Inc. has other Rio Tinto assets other than diamonds. In 2012, a 100% owned direct subsidiary was created, called Diavik Diamond Mines (2012) Inc., so that all of the Diavik diamond assets could be transferred to the subsidiary for administrative reasons. The new entity and name was adopted effective January 1, 2014.

The current ownership of the Diavik Diamond Mine continues to be a joint venture arrangement with 60% held by operator and manager DDMI and 40% held by DDDLPL. Despite corporate name changes, ownership of the mine has not changed since the project’s inception.

6.2 Exploration History

Airborne geophysical techniques and heavy mineral sampling in till were applied to identify targets which were then ranked in order of priority for additional exploration by more detailed geophysics and sampling. The most prospective targets were then drilled to define the extent of the kimberlite (delineation drilling) and for micro-diamond determination. If results were encouraging, large diameter core (“LDC”) holes were drilled to obtain mini-bulk samples (6 in. diameter core to depths of 250 m followed by 3.5 in. diameter (PQ) to the end of hole). Four potentially economic kimberlite pipes were discovered by the Diavik Joint Venture under the waters of Lac de Gras adjacent to East Island.

The first economically viable pipe, A21, was discovered on the property in April 1994, followed by A154N and A154S in May of 1994 and finally A418 in May of 1995.

An order-of-magnitude (OOM) study was undertaken between discovery and December 1995 and included ten LDC drill holes in A154S and two LDC drill holes in A154N. The OOM also included 36 delineation core holes.

A subsequent pre-feasibility study (PFS) between January 1996 and September 1997 included an additional five LDC drill holes in A154S, ten LDC drill holes in A154N, nine LDC drill holes in A418 and six LDC drill holes in A21. Included in the PFS were 27 supplementary delineation drill holes, a ~2,500-tonne underground bulk sample from A154S and an underground bulk sample in A418 of ~3,500 tonnes for price definition. Due to the highly profitable values determined for A154S and A418 no further resource evaluation was carried out before the decision was made to begin engineering and planning for production.

6.3 Mineral Resource and Reserve Model History

The initial resource estimate was completed in 1998 for the Diavik project which comprised A154S, A154N, A418 and A21. This estimate included all of the drilling done between discovery in 1994 and 1997, as well price estimates from the underground bulk samples collected in A154S and A418 (Ravenscroft, 1998). The estimate was used as the basis for the July 1999 Diavik feasibility study prepared by DDMI with SNC-Lavalin. Following economic analysis of the project, a production decision was taken to develop the Diavik Diamond Mine.

No updates to the estimation were made until 2004 when large diameter reverse circulation (“LDRC”) drilling was begun. In 2004 an external review of the estimation parameters challenged the prevailing assumption that the mean stone size (“MSS”) used in the grade estimation was constant (Isaaks, 2004). The accuracy of the calculated MSS value was also in question due to the relatively small number of LDC stones used for its calculation. While any local variation in MSS would make no difference to the global grade, the local grades could be significantly over or underestimated on a bench by bench basis. As the mine was now in production and mining was based on ten-metre benches in the open pit a decision was made to switch to a direct carats-per-tonne (“cpt”) estimation using measured actual values that were now available, rather than continuing to calculate grades using estimated stones-per-tonne (“spt”) multiplied by a global MSS.

In 2005 an internal review of the estimation parameters (Abzalov, 2005) had similarly important revelations. Comparison of the spt and cpt estimations showed that the cpt estimations better honoured the local variations in the pipes at Diavik. Also, comparison showed that geologically constrained and unconstrained estimation models produced similar results. With the addition of the 2004 LDRC sampling in A418 and A154N, there appeared to be statistically insignificant differences between the mean cpt grades of samples collected from the different geology units. The exception to this lack of difference was the low-grade MUDX unit in A418 and A21 that had been assigned an average grade due to its small volume and lack of samples.

From 2005 onward, model updates were carried out annually to incorporate new sample data and pipe contact information in annual mineral resource and mineral reserve reporting. Starting in 2012 and continuing to the present, resource updates are done every six months in order to use best available information for the annual business planning process which occurs mid-year.

6.4 Mining History

On the basis of the July 1999 feasibility study for the mine, DDMI and Dominion (then Aber) proceeded with implementation of the project. The Diavik Diamonds Project Environmental Assessment documents had been submitted to the federal government in September 1998, and in early November 1999 the federal minister of the environment approved the Diavik Diamonds Project for permitting and licencing. In March 2000, an Environmental Agreement was signed and the Department of Indian Affairs and Northern Development (now Aboriginal Affairs and Northern Development Canada) issued permits to allow DDMI to commence construction.

Construction on site commenced in 2001 and continued into early 2003. Equipment, construction materials, fuel and supplies were trucked to the site on the annual winter road. Site facilities built include an ore processing plant, diesel-fired power generation plant, electrical distribution networks, boiler house, maintenance shops, office complex, accommodation and recreation facilities, fuel storage tanks, processed kimberlite (tailings) containment, water storage and treatment facilities, and an airstrip.

A 3.9 km long water retention dike was constructed around the planned site of the A154 open pit. After dewatering the pool within the dike, lake-bottom sediments and till overburden were removed to expose the A154S and A154N pipes for mining. Initial mining and trial processing of kimberlite commenced in November 2002. Commercial production commenced in January 2003 with first sales taking place later that year.

During 2005 and 2006, a second dike 1.3 km long was built around the planned A418 open pit adjacent to the A154 open pit. Following dewatering of the enclosed A418 pool in November 2006, removal of lake-bottom sediments and till overburden began in December 2006. Mining of the two open pits was concurrent and carried out by the same single crew. A418 kimberlite became available during 2008.

Also in 2005, an underground decline was started in order to explore and bulk-sample the A418, A154N and A154S pipes at depth as well as to collect engineering data for designing the underground mining of these kimberlites below the open pits. Engineering feasibility and economic studies took place from June 2005 to July 2007 which led to corporate approvals to proceed with underground mining in the three pipes to be phased in as open pit production tapered off.

The open pit portion of A154N was depleted in July 2008, leaving only A154S kimberlite coming from the A154 open pit. This coincided with A418 kimberlite becoming available from the adjacent new A418 open pit in May 2008. Volumes of A418 increased steadily as the A154 open pit approached bottom and the volumes of A154S steadily decreased.

Production was curtailed for 2009 due to demand and price disruption associated with a global financial crisis occurring at the time.

Underground production commenced in February 2010 from A154N and in August from A154S. This was the start of a three-year underground production ramp-up and transition period during which the existing open pits would phase out and Diavik would become an underground mine. By the end of 2010 the open pit portion of A154S was completed, leaving only A418 open pit.

In September 2012, open pit mining in A418 finished and Diavik became a fully underground mine with the immediate commencement of underground production from A418 added to that of A154N and A154S. Stockpiles from the open pit lasted into 2013. As an underground mine, Diavik's production comes from all three production pipes concurrently.

Table 2 shows Diavik production by year from start-up to the end of 2016 (on a 100% JV basis).

Table 2 Diavik Diamond Mine production (100%)

| Calendar Year | OPEN PIT | | | UNDERGROUND | | | TOTAL | | |
|---------------|---------------|---------------|------------------|---------------|---------------|------------------|---------------|----------------|------------------|
| | Tonnes 000s | Carats 000s | Carats per Tonne | Tonnes 000s | Carats 000s | Carats per Tonne | Tonnes 000s | Carats 000s | Carats per Tonne |
| 2003 | 1,193 | 3,833 | 3.2 | - | - | - | 1,193 | 3,833 | 3.2 |
| 2004 | 1,950 | 7,575 | 3.9 | - | - | - | 1,950 | 7,575 | 3.9 |
| 2005 | 2,222 | 8,271 | 3.7 | - | - | - | 2,222 | 8,271 | 3.7 |
| 2006 | 2,331 | 9,829 | 4.2 | - | - | - | 2,331 | 9,829 | 4.2 |
| 2007 | 2,400 | 11,943 | 5.0 | - | - | - | 2,400 | 11,943 | 5.0 |
| 2008 | 2,414 | 9,225 | 3.8 | - | - | - | 2,414 | 9,225 | 3.8 |
| 2009 | 1,359 | 5,565 | 4.1 | - | - | - | 1,359 | 5,565 | 4.1 |
| 2010 | 1,765 | 5,625 | 3.2 | 326 | 875 | 2.7 | 2,091 | 6,500 | 3.1 |
| 2011 | 1,768 | 5,531 | 3.1 | 465 | 1,146 | 2.5 | 2,234 | 6,677 | 3.0 |
| 2012 | 1,116 | 4,006 | 3.6 | 942 | 3,224 | 3.4 | 2,058 | 7,230 | 3.5 |
| 2013 | 161 | 465 | 2.9 | 1,956 | 6,778 | 3.5 | 2,116 | 7,243 | 3.4 |
| 2014 | - | - | - | 2,277 | 7,233 | 3.2 | 2,277 | 7,233 | 3.2 |
| 2015 | - | - | - | 1,984 | 6,406 | 3.2 | 1,984 | 6,406 | 3.2 |
| 2016 | - | - | - | 2,214 | 6,658 | 3.0 | 2,214 | 6,658 | 3.0 |
| Totals | 18,680 | 71,867 | 3.8 | 10,163 | 32,319 | 3.2 | 28,843 | 104,186 | 3.6 |

The Diavik Diamond Mine was designed for 1.5 million tonnes processed per year, but has exceeded that rate consistently after the first year. The underground feasibility study approved in 2007 was for the original 'nameplate' capacity of 1.5 million tonnes per year delivered to the plant. Although underground output has not been as high as it was from open pit mining, the underground mine has also exceeded initial expectations to date.

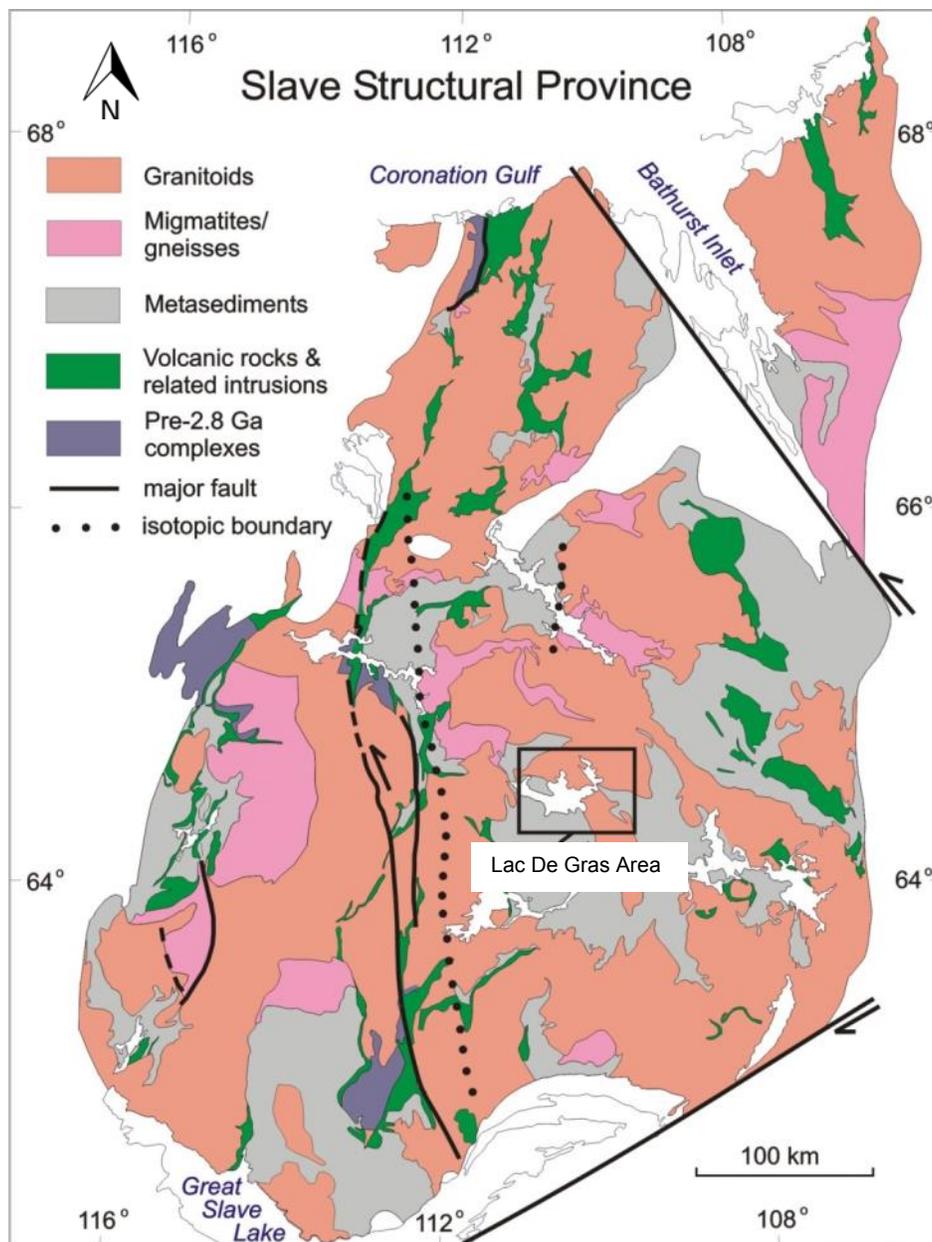
The fourth kimberlite, A21, received corporate approvals for development in November 2014. A third dike and open pit is planned and construction commenced in 2015. Completion of the dike and pool dewatering is expected in early 2018, followed by pre-production stripping leading to first kimberlite production by the end of 2018. Surface mining at A21 does not extend the mine life but strengthens the business by complementing production from an increasingly deepening

underground mine. The timing of the capital investment and maximum benefit for the mine as a whole were considerations in the strategic timing of A21.

7. GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional and Project Geology

The Diavik Diamond Mine is situated on East Island in Lac de Gras located in the central part of the Slave Structural Province which forms a distinct cratonic block within the Canadian Precambrian Shield. Figure 4 is an overview of the regional geology of the Slave Structural Province.



Modified from Stubbley Geoscience 1998

Figure 4 Regional geology – Slave Structural Province

Regional geological mapping of the area is limited to the 1:253,440 scale maps of Folinsbee (1949; NTS 76D) and of Lord and Barnes (1954; NTS 76C); Kjarsgaard and Wyllie (1993, 1994) mapped the area immediately north of East Island at 1:50,000 scale. Each of these studies has identified three main Archean lithological suites:

- 1) greywacke-mudstone metaturbidites;
- 2) biotite ± hornblende tonalite to quartz diorite; and
- 3) two-mica or K-spar-porphyrific granite and granodiorite.

Each unit has a distinctive and internally consistent geochemical signature. The ca. 2610–2600 Ma tonalite-quartz diorite intruded the vast metaturbidite terrane as a steep-sided stock centred on southern East Island. The two-mica granitoids form a ca. 2590–2580 Ma dyke-and-sill complex which tended to “split and separate” the metaturbidites, both horizontally and vertically, into variably sized blocks, each which retained its original orientation. Accurate predictions on the size, continuity, and position of the metaturbidite blocks will be difficult in the complex transitional zones of northeastern East Island. At least three sets of Proterozoic diabase dykes stitch the Archean rocks. Figure 5 shows the geology of the East Island.

Figure 5 shows the general geology of East Island in Lac de Gras.

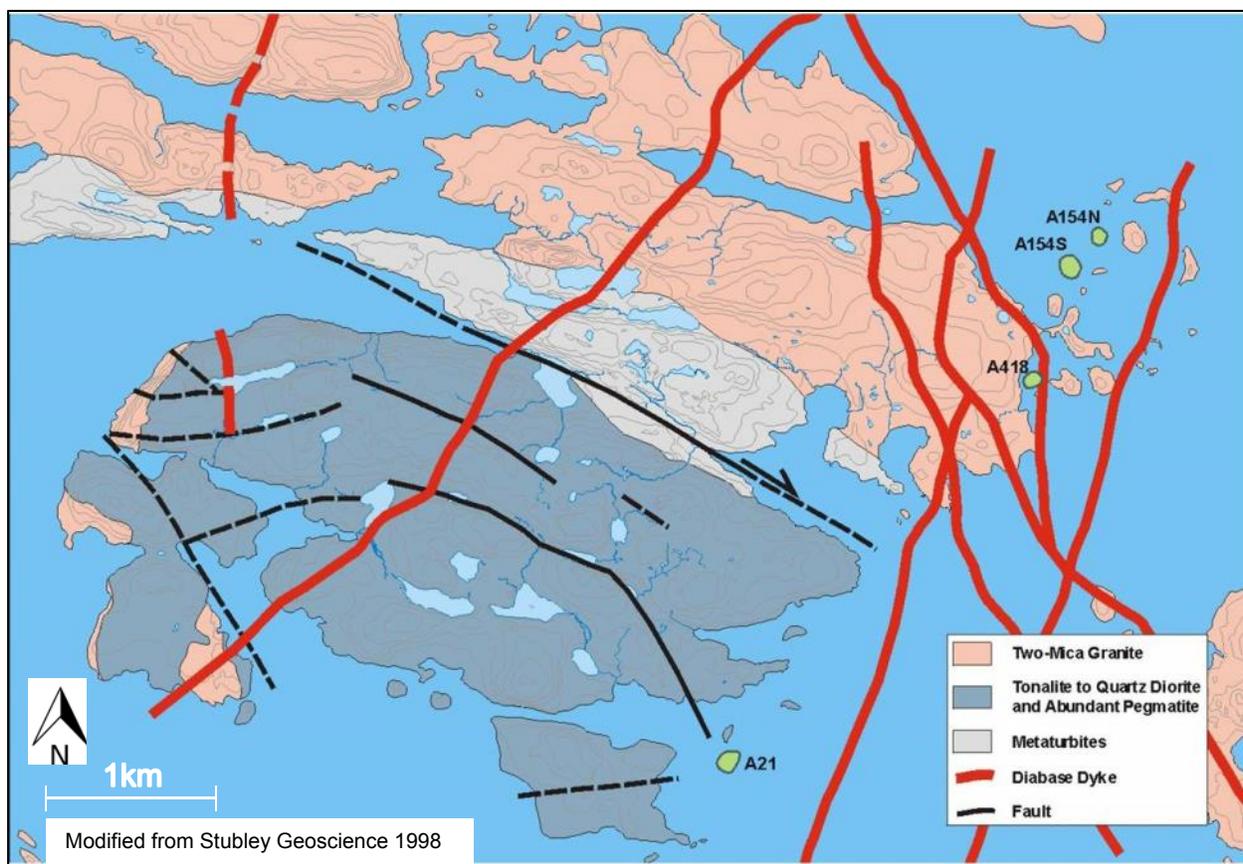


Figure 5 Local geology – East Island, Lac de Gras area

Metasedimentary rocks, comprising metamorphosed greywacke, siltstone, and mudstone (i.e. psammite to pelite), are preserved in an east-southeast trending corridor through central East

Island. These rocks exhibit many features ascribed to turbidity deposition, including graded beds, and are typical of the vast metaturbidite domains which account for approximately 25% (Padgham & Fyson, 1992) of the Slave Structural Province.

Southwestern East Island is dominated by white- to grey-weathering, medium-grained tonalite to quartz diorite. Principal components are equal-sized biotite and hornblende (to 35% total) and plagioclase; quartz contents range up to 10%. Local alteration zones contain epidote, sericite, and chlorite in response to saussuritization of plagioclase. A weak foliation and/or steep lineation commonly develops in the generally homogeneous intrusion. Contact relationships with metaturbidites suggest that the intrusion is a steep-sided stock lacking extensive veining or dykes into the surrounding country rock. Metasedimentary xenoliths or rafts (to 50 m maximum dimension) are randomly oriented and indicate a stoping mechanism of emplacement. A zone of extensive xenoliths along the southwestern shore of East Island, and metasediments encountered in lake-bottom drill holes to the east, south and northwest suggest the intrusion is not laterally extensive beneath Lac de Gras.

A suite of compositionally and texturally variable granite and granodiorite occupies much of the north and east areas of mapping and is assumed to be contiguous with a regional suite of two-mica granitoids. The primary constituents of all phases are quartz, K-spar (primarily microcline), plagioclase, muscovite, and biotite. Distinctive accessory minerals include tourmaline, blue-green apatite, and garnet. Clusters of fine-grained magnetite occur in a pinkish generally fine-grained granite of southwestern East Island. Other subdivisions of the suite are recognized, but are not distinguished in Figure 5 due to their diffuse and transitional interrelationships. The two-mica granitoids are believed to be representative of a voluminous pan-Slave suite of 2590–2580 Ma granite, granodiorite, and pegmatite which largely postdates the development of the dominant regional foliation (e.g. “C6 - Contwoyto Suite”; van Breemen et al., 1992).

At least three sets of diabase dykes are distinguished on the basis of orientation, and can be correlated with Proterozoic swarms of the central Slave Province as described and dated by LeCheminant and van Breemen (1994). The surface trace of the dykes is largely inferred from aeromagnetic signatures. Dykes of different swarms are texturally indistinguishable. Individual dykes are irregular in width, strike, and dip ($90^\circ \pm 35^\circ$) along their length, and are commonly arranged en echelon within sets:

- a) NE-striking dykes, including a 7 m wide example traceable across most of East Island, are correlated with the ca. 2.23 Ga Malley (or Contwoyto) swarm.
- b) NNE-striking dykes near the east margin of East Island are correlated with the ca. 2.02 Ga Lac de Gras swarm. These are the widest (~55 m) dykes encountered in outcrop and drill core but exhibit pronounced variations along their length.
- c) NW-striking dykes of the eastern map area are correlated with the ca. 1.27 Ga Mackenzie swarm. The intense magnetic signature relative to their width (~15 m) distinguishes these dykes from similarly oriented members of the Paleoproterozoic Indin swarm of the southwestern Slave Province (Stubley 1998).

A single, steep, generally northwest-trending foliation is developed in the metaturbidites and most of the tonalite-quartz diorite, but is only locally developed in the two-mica granitoid suite. This dominant foliation is interpreted to have developed during regional 2600–2590 Ma deformation which overlapped with the peak of metamorphism. Subsequent deformation includes broad warping of the dominant foliation and local development of mm- to cm-scale crenulations. Numerous lineaments in the tonalite domain are sites of truncation of pervasive pegmatite dykes and are interpreted as faults. Double Bay Fault forms a pronounced east-southeast trending lineament through central East Island; kinematic indicators in adjacent metaturbidites consistently suggest sub-horizontal dextral displacement, but of unknown magnitude. The recessive nature of the faults precludes outcrop examination of displacement surfaces, but is indicative of increased susceptibility to erosion and of contrasts in mechanical properties between the fault zones and the country rock.

Characteristic joint patterns are developed in each rock suite, and each reflects the host rock's internal heterogeneity. The dominant fracture set in the metaturbidites is parallel to sub-vertical bedding. However, an east-west striking set observed in both granitoid domains is not evident in the metaturbidites. The two-mica granitoid domain is characterized by an undulatory sub-horizontal joint set and a sub-vertical set which is sub-parallel to bedding in the adjacent metaturbidites, and these two sets reflect the internal multiphase dyke-and-sill geometry of the intrusion. Only one joint set is well expressed in all rock units and it strikes north-northeast parallel to the alignment of known kimberlite pipes at East Island. This pervasive joint set likely developed in response to the kimberlite emplacement event(s); identification of discrete regional-scale features (e.g. faults) which controlled kimberlite emplacement remains elusive (Stubley, 1998).

The kimberlites themselves are Eocene (54–58 Ma) volcanic deposits which intruded the older Archean (2.5–2.8 Ga) granitoid and metasedimentary rocks of the Slave Craton in Canada's Northwest Territories. The kimberlites and their host rocks were then covered by a Quaternary glacial till which was generally up to 40 m thick in the immediate vicinity of the pipes.

7.2 Comment

The QPs believe that the understanding of the geological setting, lithology, structures and alterations associated with the emplacement, geometry and continuity of kimberlite for the pipes in the area is sufficient to support estimation of mineral resources and mineral reserves.

8. DEPOSIT TYPES

The mineral resource and reserve for the Diavik Diamond Mine consists of four diamond-bearing kimberlite pipes located under water in Lac de Gras. The pipes are relatively small, each having surface expressions less than 200 m in diameter, but they are high in grade. The kimberlite pipes that underpin the present mining plan are named A154S, A154N and A418. The fourth pipe, A21, is fully permitted for mining and in November 2014 received corporate approvals to commence the stages of construction toward its development as an addition to the mine plan. Figure 6 shows the mine site layout and the location of the kimberlite pipes.

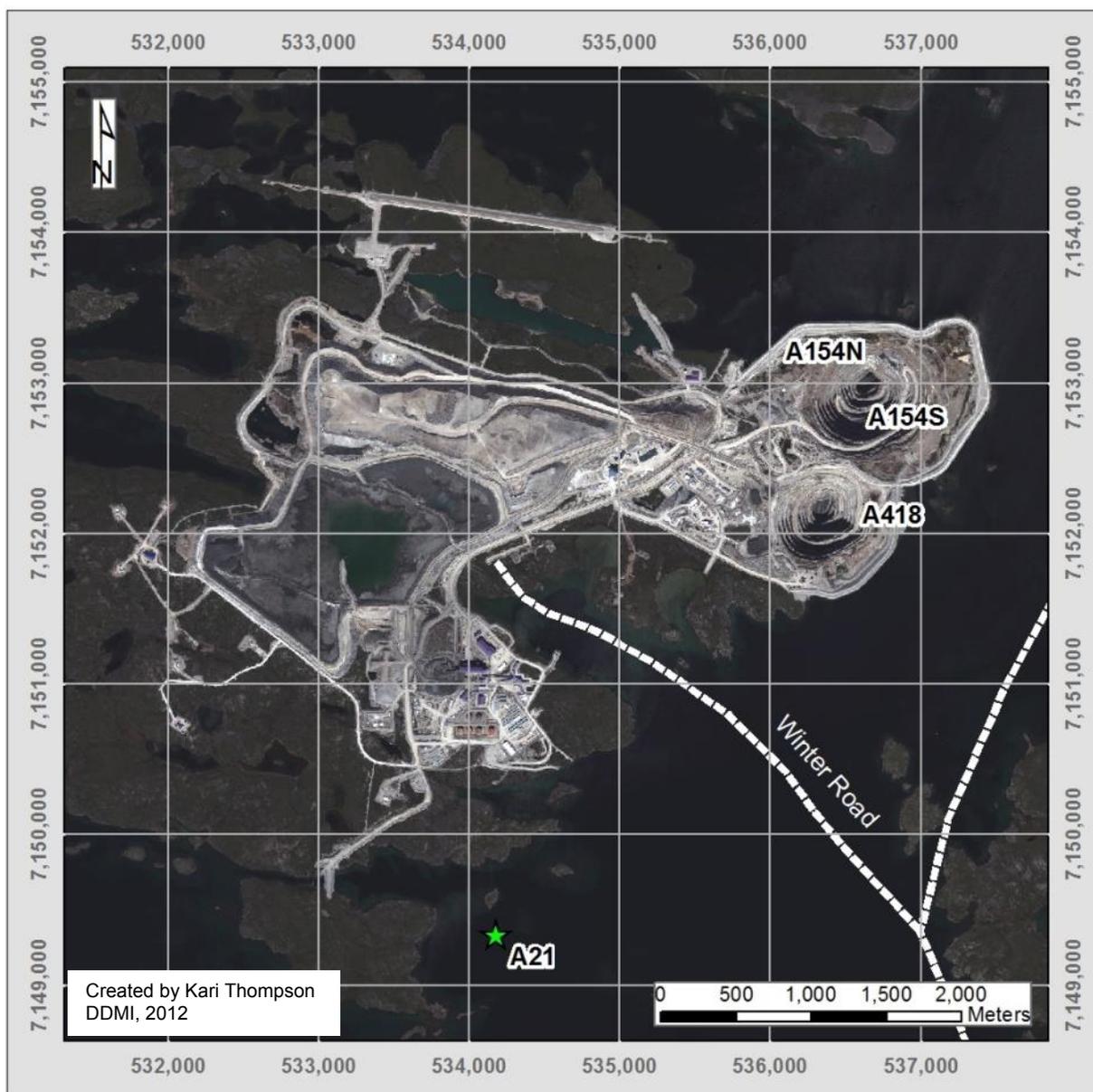


Figure 6 Diavik Project kimberlites

Diamonds are generally included as xenocrysts in kimberlite magma as it ascends through the upper mantle and crust. As the earth's surface is approached, the kimberlite magma, which is rich in volatiles such as CO₂, erupts explosively to form a characteristic root-shaped pipe structure. Abundant kimberlite is erupted as pyroclastic ejecta and falls both within and adjacent to the pipe. The pipe is filled with a combination of pyroclastic kimberlite, coherent kimberlite, and country rock that slumped back into the pipe. At Lac de Gras, the tops of the pipes were subsequently removed by continental glaciation. The kimberlites are softer than the surrounding rocks so that depressions were formed after the glaciers retreated and filled with water to become lakes. When the pipes occur under larger lakes, such as Lac de Gras, the pipes typically lie beneath small depressions on the lake bottom.

The Diavik kimberlite pipes are made up of three facies:

- coherent (CK),
- pyroclastic (PK) and
- volcanoclastic (VK).

The CK facies is formed by the crystallization of kimberlite magma, often at depth, and has not been explosively emplaced. The PK facies at Diavik is interpreted as an explosive air-fall deposit which may have been deposited in water. The VK facies is formed by a mixture of pyroclastic deposition and re-sedimentation of pyroclastic kimberlite and host material from a volcanic edifice which flows back into the open crater remaining after eruption. The pipes also contain varying amounts of host rock dilution which was incorporated during the eruption. Figure 7 is a general illustration of the internal geology of the Diavik project kimberlites.

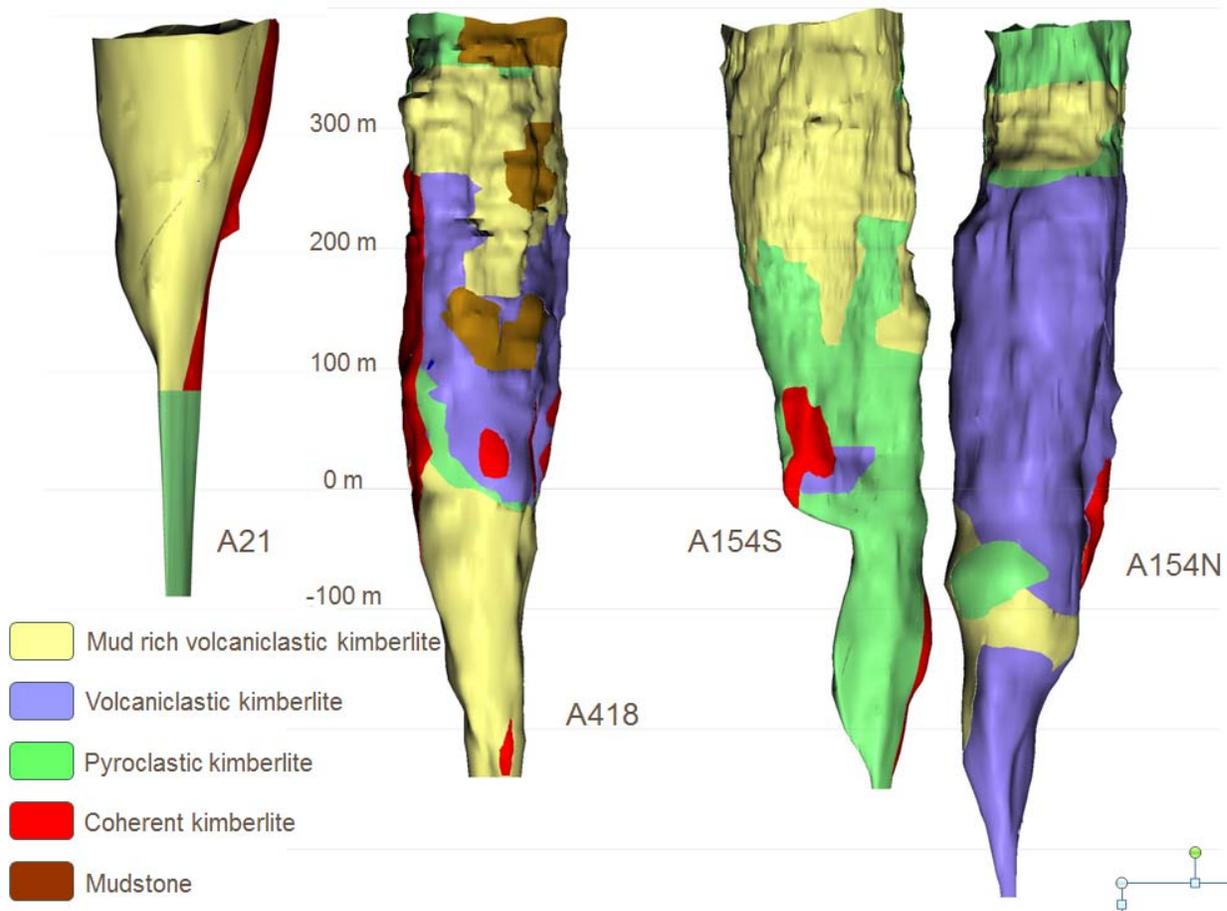


Figure 7 Internal geology of project kimberlites

The kimberlite within each pipe has been subdivided into four to seven units for resource modeling. Units were broadly delineated with the purpose of correlation across each pipe on a mine scale. The units were defined on the basis of macroscopic criteria, mud dilution, grain size, magnetic susceptibility, and textural and alteration characteristics. These aspects of kimberlite composition can exert control on diamond stone size and stone count, and hence diamond grade, as well as geotechnical and processing characteristics. All drill holes which intersect kimberlite were logged according to a prescribed set of standards. All exposed kimberlite surfaces were also mapped as mining progressed both in-pit and underground.

8.1 Comment

In the opinion of the QPs, the Diavik kimberlite pipes are of a type having much in common with other pipes in the area that are reasonably understood by practitioners familiar with such deposits. The exploration and evaluation programs completed to date have been appropriate for the setting and mineralization of the project pipes. Ongoing sampling and delineation in support of the producing mine is furthering the knowledge of the internal geology of the pipes.

9. EXPLORATION

9.1 Geophysical Survey

In order to identify drilling targets, Aber Resources contracted Geonex Aerodat Inc. to conduct a helicopter-borne electromagnetic survey. Flown between April and June of 1992 at a nominal line spacing of 150 m, a total of twenty 149 line-kilometres of data were collected. This line spacing was selected based on the average size of economic kimberlites identified to that point in time. Targets arising from this survey resulted in the discovery of 35 kimberlites, including all four mine pipes.

The magnetic targets were selected first and were ranked from first priority to fourth priority based on the shape of the anomaly, particularly the distinct circular and ovoid negative anomalies. Although some of the electromagnetic anomalies were also ranked A and B, these were not targeted until the third year of exploration as drilling of the magnetic lows was so successful. Due to the relatively high flight height and large line spacing, airborne targets required confirmation with ground surveys prior to targeted drilling. Chief among these are ground magnetic surveys. These were collected with a picketed station location and a mean interval of 12.5 m across lines with a nominal spacing of 50 m.

Also used as a follow-up to airborne magnetic surveys, ground gravity was used in target discrimination on all four of the project pipes. Station separation for ground gravity surveys is generally in the order of 50–100 m depending on expected target size, with standard Bouger corrections performed using a density of 2.67 g/cm³. The lower average density of certain facies of kimberlite when compared with the intrusive rocks of the Canadian Shield leads to a detectable signature.

9.2 Geological Mapping

A twenty-day mapping project was undertaken in July 1998 to interpret the geological setting of the diamondiferous kimberlite pipes at East Island, Lac de Gras. Principal objectives were to outline the main rock types and structural features of the area, with emphasis on geotechnical aspects which could influence decisions during planning for mine development. Details of this work can be seen in section 7.2 (Stubbley, 1998).

DDMI drilled 40 new "deep till" holes and collected approximately 2,000 till samples from a portion of the property in summer 2012. To provide context for these data, previous surficial geology work in the area was synthesized and a surficial geology map was produced.

In terms of the Quaternary event history, the stratigraphic succession is interpreted to record (1) erosion of the bedrock surface beneath an actively flowing, wet-based glacier (striations; roche moutonnées), followed by (2) gradual stagnation of the glacier, which led to a general sequence of erosional and depositional events — first, sub-glacial deposition (melt-out till), then sub-glacial meltwater erosion (meltwater corridors) and ice-contact meltwater deposition (eskers), and, finally, gentle let-down of the remaining debris from the ice onto the landscape (sparse

boulders; rare mounds of loose ablation till). The glacier maintained a north-westward ice-surface slope during stagnation, given the orientation of meltwater corridors and eskers. Glaciolacustrine mud units, beaches, alluvium, and organic-rich units are rare but present locally (Cummings, 2012).

9.3 Exploration Programs

Once geophysical targets were ranked for priority, the next exploration step was to carry out frost boil till sampling, stream heavy mineral sampling, and beach sampling from sites selected down-ice from the geophysical targets in order to find down-ice diamond indicator mineral (kimberlite indicator mineral, or “KIM”) expressions. This was begun in the summer field season of 1992. Samples were generally 15 litres in size, and were collected at a grid spacing of approximately 2 km. Current sampling methodologies on the property assume collecting a pre-screened (3 cm mesh) sample of glacial till, though many of the original samples targeted eskers due to their higher concentrations of indicator minerals. As the till sampling was slow in turnaround (often more than a year) it was not the main method in the first stages of the exploration.

Exploration on the property continued until 2013 with an annual budget devoted to additional geophysical surveying, till sampling, mapping and drilling.

9.4 Hydrology and Geotechnical Studies

Geotechnical and hydrological studies for the purposes of mine development began as early as 1995 with early scoping-level studies of various excavation options by several firms based on relatively limited data at the time. Contributors during 1995 to 1999 included Steffen Robertson and Kirsten (Canada) Inc., Call & Nicholas, Inc., Redpath McIntosh Engineering, Inc., MRDI Canada (a division of H.A. Simons Ltd.), Golder Associates Ltd., and DDMI staff at the time. In particular, Call & Nicholas established much of the geotechnical guidance for the feasibility open pit designs and conceptual underground plans leading up to the feasibility study on which the project was approved. After the mine was approved for construction, Golder Associates became Diavik’s primary geotechnical and hydrological (as well as environmental sciences) consultant.

Since project inception and continuing to the present day, innumerable field programs have been conducted and extensive data sets and analyses have been amassed which have supported past and ongoing mine designs/updates and development plans. Synergies have been sought wherever possible such that geotechnical and/or hydrology information might be gained from resource geology drilling while geology information might be gained from geotechnical and/or hydrology efforts within kimberlite, or perhaps the sharing of equipment/crews or mobilization costs may be possible.

For the A154N/S and A418 pipes, geomechanics and hydrology are based on the open pit and dikes and the underground as an integrated system. In addition to structural modeling, a discrete fracture network and flow model was also developed for Diavik. Geotechnical monitoring, data collection, analysis and mine design review are ongoing along with hydrological

probing and control in support of Diavik as a fully underground mine that is deepening steadily with time.

The approved A21 open pit and dike are approximately four kilometres away from the main Diavik mining location and is a separate geotechnical and hydrologic system. Geotechnical field investigation and hydrological assessment for the A21 area began in 2005 when detailed feasibility studies for the proposed A21 dike and open pit first began. The work included the advance of an underground decline into A21 as well as probing from surface. The data collected and assessments made have supported the engineering of a suitable dike and the study of several mining options for A21 including the concept that has been approved for construction. Further confirmatory/infill geotechnical drilling is planned as part of the A21 dike construction. Targeted aquifer testing is also planned for confirming hydrology behaviour for the A21 open pit in order to affirm the pit slope depressurization requirements and expected final wall angles that will determine the ultimate depth of the pit.

9.5 Comment

The QPs feel that the exploration programs completed to date have been appropriate to the style of the kimberlite pipes in the area of the Diavik Diamond Mine. The work to date has discovered more than 60 kimberlite pipes and taken the four economic ones through evaluation and development to safe and sustainable production. Potential for discovery and development of further economic pipes is considered to be low at this time.

10. DRILLING

10.1 Core Drilling

The Diavik kimberlite pipes make sharp contacts with the granitoid host rock and all the material within the contact is mined and processed. This contact was initially defined by pierce point drill hole data at the order-of-magnitude level of study. These pierce points provided indicative sizes and shapes for the kimberlitic bodies. During the pre-feasibility studies, additional delineation holes were drilled with particular focus on A154S and A418. This additional delineation drilling was used to calculate volumes and spatial dimensions, which were subsequently used for initial pit designs. Additional delineation drilling, used to guide volume updates, has been conducted in each of the four pipes at Diavik increasing significantly the number of pierce points since the initial 1998 resource modeling. Since the commencement of underground mining in 2010, additional pierce points have been added to the models with the results from underground probe drilling that has been adopted in order to delineate the kimberlite contact at close range. As the pipes are mined, exposed clean contacts are surveyed and these as-mined contact points are added to the pipe outline. At this advanced stage of production the three production pipes are very well defined, except at great depth. Table 3 shows a tally of pierce points for each of the pipes.

Table 3 Pierce points used to model kimberlite pipes

| Pipe | Total Drill Holes | Total Pierce Points | Total Survey Points |
|-------|-------------------|---------------------|---------------------|
| A154S | 326 | 249 | 36,365 |
| A154N | 294 | 263 | 12,276 |
| A418 | 307 | 287 | 48,973 |
| A21 | 48 | 36 | 74 |

Initial work on the property in 1995 included large diameter core (“LDC”) holes that were drilled in each pipe to extract samples large enough for macrodiamond (>1mm) recovery. LDC holes were drilled vertically, starting with six-inch core and stepping down to three- to four-inch core at depths of around 250 m (due to drilling equipment limitations). Samples were recovered in varying lengths (nominally 15 m for six-inch core and 25 m for three- and four-inch core) attempting to maintain a constant sample weight and yielding a minimum of around 30 stones per sample. In the LDC holes drilled in 1995 in A154S (ten holes) and A154N (two holes), a maximum drilling depth of 250 m was achieved.

An additional 30 LDC holes were drilled vertically in 1996 and 1997, again starting with six inch core and stepping down to three to four inch core at depths of around 250 m (due to drilling equipment limitations). Samples were recovered in varying lengths (nominally 15 m for six-inch core and 25 m for three and four inch core) attempting to maintain a constant sample weight and yielding a minimum of around 30 stones per sample. In the LDC holes drilled in 1996 in A154S (five holes) and A154N (ten holes), a maximum drilling depth of 530 m was achieved. In A418 nine LDC holes were drilled to a depth of 450 m. Six LDC holes were drilled in the A21

pipe in to a maximum depth of 370 m. Holes were drilled on a roughly 30 m to 50 m grid covering each pipe's surface area.

10.2 Large-Diameter Reverse-Circulation Drilling

Beyond feasibility requirements, additional grade data was required for greater accuracy in production-scale forecasting. Bulk sampling from large-diameter reverse circulation ("LDRC") drilling was carried out from lake ice as well as within the open pits while being actively mined. LDRC holes have been drilled in all of the project pipes to improve resource definition since the mine started up. Over time, this additional sampling has increased confidence to levels sufficient to support the advancement of proven and probable reserve boundaries ahead of mining.

After the mine start-up, drilling before mining commenced – including drilling from lake ice prior to mine development – was possible for A154N, A418 and A21. A 2004 in-pit LDRC program for A154N sought to increase local grade confidence in the upper part of the pipe as well as to drill deep LDRC holes to produce a package of diamonds for further price valuation. A418 was also a focus in 2004 as well as 2005 during which LDRC drilling was conducted from lake ice to the bottom of the open pit that was being planned at the time. LDRC drilling from lake ice was also carried out for A21, in 2008, to augment an underground bulk sample that had been mined in 2007.

LDRC drilling in A154S was performed only after completion of open pit mining there, in 2009, in preparation for underground mining that would commence the following year. The holes were designed to drill to the pipe/granite contact to capture the narrowing of the pipe toward the bottom.

In 2011, in-pit LDRC drilling also took place in A418 which extended the reserve into the underground mining of the pipe that would commence in late 2012. As in the 2009 program for A154S, the A418 holes were also designed to reach the pipe/granite contact to ascertain the tapering dimensions of the pipe as the bottom is approached.

All of the LDRC holes were vertical and diameters ranged from 13.75" to 24" depending on the grade of the pipe. The samples were planned to coincide with mining levels and were collected in 10-m increments down the hole. Chip samples were taken every three metres and were logged to determine the geology unit of each sample.

10.3 Other Sampling

On two occasions when grade reconciliation was consistently negative for a period of time, a set of mini-bulk samples of approximately two tonnes each were collected on a single bench (one occasion in A154S and another in A418).

Since the transition to underground mining, samples were collected from development drifts in A154S, A154N and A418 as mining progressed. In areas where grade samples had not been collected previously, two to four tonne samples were collected from the mined ore. The samples were sent to Rio Tinto's mineral processing laboratory in Thunder Bay, Ontario, and the

Saskatchewan Research Council laboratory in Saskatoon, Saskatchewan and treated in the same manner as the LDRC samples.

10.4 Sampling Summary

The grade definition sampling available for grade estimation at Diavik in each of the four project pipes is summarized in Tables 4–7.

Table 4 A154N drilling programs

| Year | Type | Number of Drill Holes | Number of Samples | Total Weight (t) | Diameter | Average Spacing (m) | Target Number of Stones per Sample |
|-----------|----------|-----------------------|-------------------|------------------|----------|---------------------|------------------------------------|
| 1995/1996 | LDC | 10 | 130 | 72 | 6" | 30–50 | 30 |
| 2004 | LDRC | 10 | 136 | 1,000 | 13.75" | 25 | 150 |
| 2011 | LDRC | 3 | 113 | 463 | 17.5" | 25 | 150 |
| 2014 | PQ | 9 | 26 | 211 | 4.00" | infill | 15 |
| Various | UG Minis | | 64 | 167 | | infill | 100 |
| Total | | 32 | 469 | 1,913 | | | |

Table 5 A154S drilling programs

| Year | Type | Number of Drill Holes | Number of Samples | Total Weight (t) | Diameter | Average Spacing (m) | Target Number of Stones per Sample |
|---------|--------------|-----------------------|-------------------|------------------|----------|---------------------|------------------------------------|
| 1995 | LDC | 8 | 63 | 56 | 6" | 30–50 | 30 |
| 1997 | LDC | 5 | 94 | 56 | 6" | 30–50 | 30 |
| 2009 | LDRC | 14 | 212 | 557 | 13.75" | 25 | 200 |
| Various | Pit/UG Minis | | 38 | 92 | | infill | 100 |
| Total | | 27 | 407 | 761 | | | |

Table 6 A418 drilling programs

| Year | Type | Number of Drill Holes | Number of Samples | Total Weight (t) | Diameter | Average Spacing (m) | Target Number of Stones per Sample |
|-----------|--------------|-----------------------|-------------------|------------------|----------|---------------------|------------------------------------|
| 1996 | LDC | 9 | 77 | 63 | 6" | 30–50 | 30 |
| 2004/2005 | LDRC | 11 | 144 | 328 | 24" | 30 | 100 |
| 2011 | LDRC | 10 | 332 | 1,403 | 17.5" | 25 | 200 |
| Various | Pit/UG Minis | | 86 | 241 | | infill | 100 |
| Total | | 30 | 639 | 2,035 | | | |

Table 7 A21 drilling programs

| Year | Type | Number of Drill Holes | Number of Samples | Total Weight (t) | Diameter | Average Spacing (m) | Target Number of Stones per Sample |
|-----------|------|-----------------------|-------------------|------------------|----------|---------------------|------------------------------------|
| 1996/1997 | LDC | 6 | 66 | 31 | 6" | 30–50 | 30 |
| 2008 | LDRC | 9 | 123 | 504 | 22" | 30 | 150 |
| Total | | 15 | 189 | 535 | | | |

Figures 8–11 show where holes have been drilled into each of the Diavik kimberlites: A154N, A154S, A418 and A21.

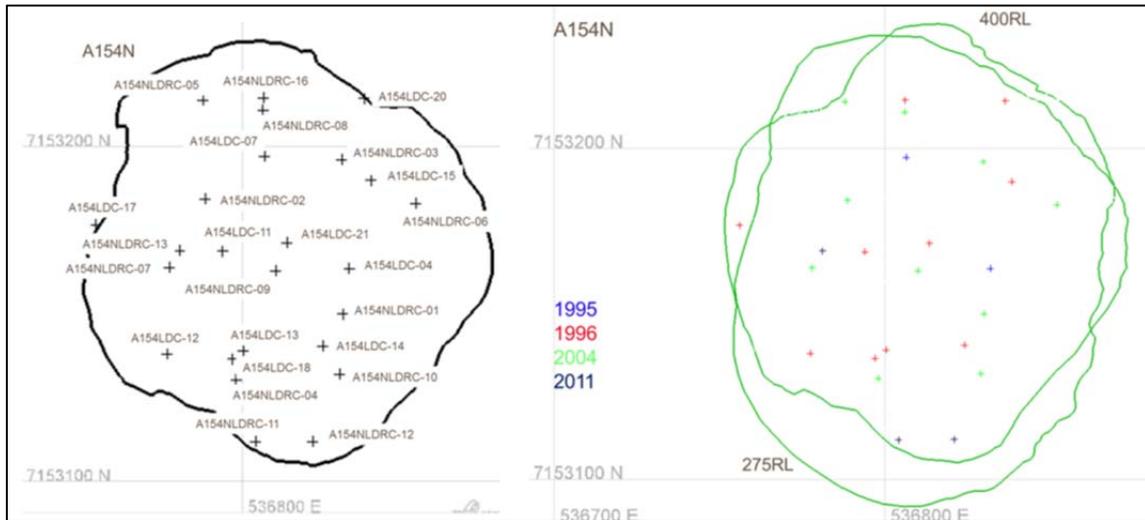


Figure 8 Location of drill holes in A154N

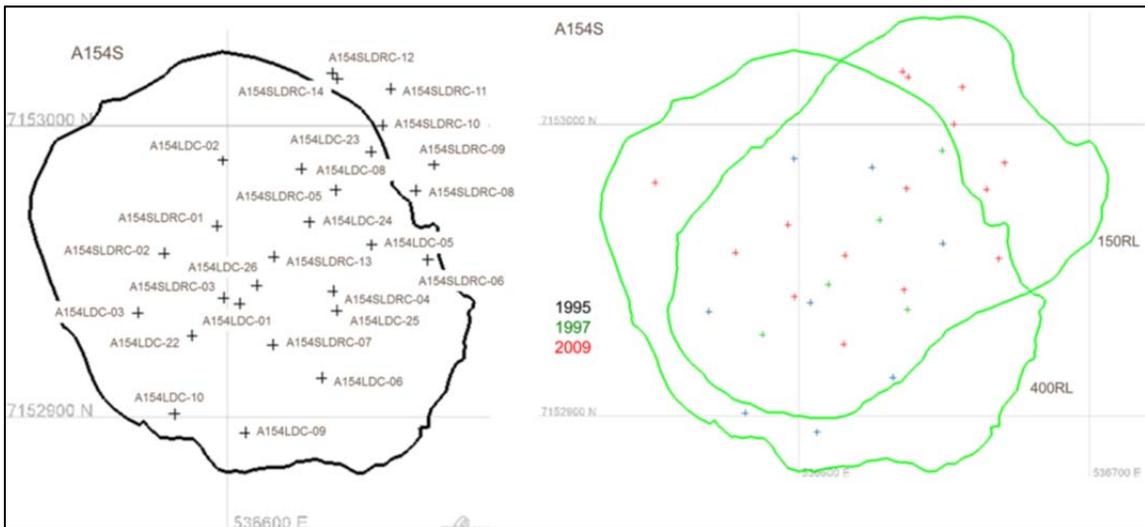


Figure 9 Location of drill holes in A154S

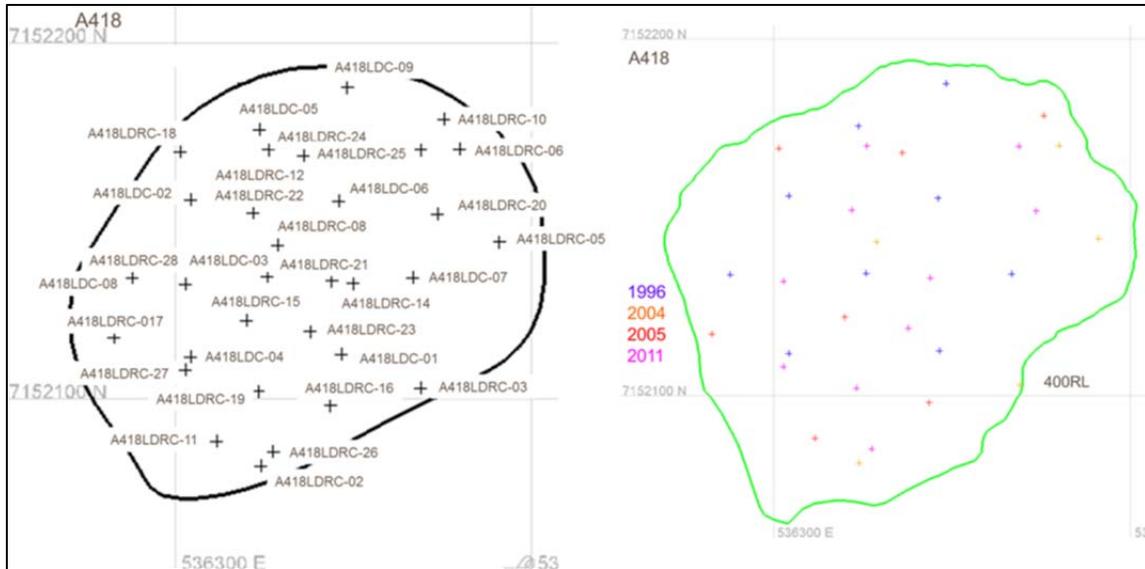


Figure 10 Location of drill holes in A418

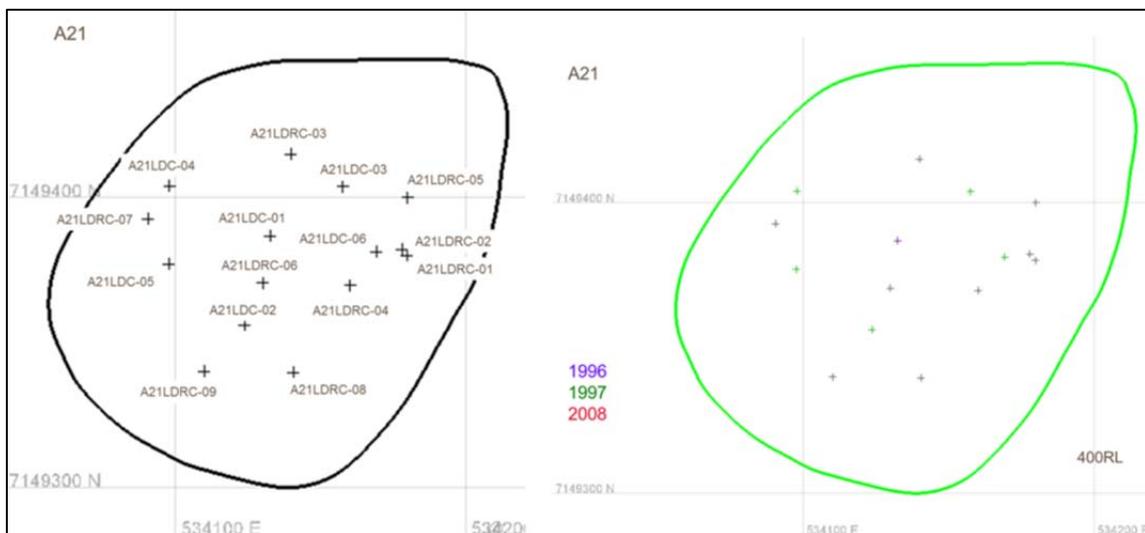


Figure 11 Location of drill holes in A21

10.5 Drilling for Seismic Reflection

Borehole seismics was used to augment pierce points for delineating the kimberlite contact at depth. 3D seismic surveys were completed in four boreholes adjacent to the A154N kimberlite and one borehole near the A418 kimberlite in 2005. The 2006 program completed surveys on two holes adjacent to each of the A418 and A21 kimberlites. A high-frequency piezoelectric source and borehole hydrophones were placed down steeply-inclined (-80° dip angle) boreholes drilled in the country rock within 100 m of the kimberlite. Each borehole was planned and carefully drilled so as to strike the kimberlite at depth in order to have a reference point. Sonic velocity surveys and a north-seeking gyro orientation survey were completed on each

borehole for confidence in the hole location. Both single-hole and cross-hole surveys were carried out around the A154N pipe. Smaller-scale single-hole surveys were conducted adjacent to the A418 and A21 pipes. Projected pipe/granite contacts obtained using these interpretations have been gradually superseded by subsequent drill pierce points and mined contact surveys as mining progresses.

10.6 Comment

The QPs are of the opinion that the amount, types, purposes, timeliness, planning and execution of the drilling carried out to date have been appropriate and sufficient for the estimation and ongoing updates of the mineral resources and mineral reserves. Moreover, the supervision of drilling, the handling and logging of core, the handling and processing of samples, and management of data adhere to long established standard procedures carried out by qualified staff within DDMI.

11. SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Sample Processing

The early large diameter core was logged at site, then packed into core boxes and transported on the winter ice road to a dense media separation pilot processing facility that had been set up in Yellowknife by DDMI at the time. Each sample length was treated separately through the plant, with the circuit being flushed and cleaned between the samples. Diamonds recovered from LDC samples were initially sized and weighed at the Yellowknife plant before being shipped to a Rio Tinto facility at its Argyle Diamonds subsidiary in Perth, Western Australia, for cleaning and re-weighing. The cleaning process generally removed small amounts of non-diamond material adhering to the stones and resulted in changes in stone weight of less than a few tenths of a percent (Ravenscroft, 1998).

For the pre-1999 bulk sampling work, material from individual drift rounds in the A154S pipe was put through the DDMI pilot plant in Yellowknife as two to four round batches run in two campaigns. Separate batches were run for different kimberlite units. The plant was purged thoroughly between samples to avoid contamination. Some A154S material was also taken to the Ekati Mine and processed in their Koala test plant when the winter ice road to Yellowknife was closed. For A418, the material was stored as piles of aggregated rounds and batched pile-by-pile at the DDMI Yellowknife plant.

Both the DDMI and Ekati pilot plant flow sheets incorporated conventional and proven diamond recovery techniques consisting of crushing, scrubbing, dense media separation, re-crushing, x-ray separation, magnetic separation and hand sorting. The bottom screen size was 0.85 mm. Calculated efficiencies for the pilot plants were between 88% and 93% based on recovery and tailings studies, and the use of density tracers in the test work. The pilot plant process flow charts were similar to the full-scale Diavik processing plant flow chart.

The initial grouping of recovered rough diamonds involved combining stones recovered from all of the rounds or piles for each of the three geologic units. These parcels were then sized and split into roughly equal portions by riffing. The valuation parcel included all large goods larger than 3 grainers (approximately 0.75 carats) in weight and a representative fraction of the small stones. The 'coated' category of goods was recovered on all sieve sizes. Separate parcels were created for coateds larger than the 11DTC sieve size and these went into the representative valuation parcel.

The re-crush goods represented stones recovered from the secondary crushing of coarse oversize material reserved from the processing of the various bulk samples. Depending on which test plant was used, either Ekati or the Yellowknife DDMI plant, the re-crush was set to either -6 or -8 mm. The recovered goods were combined regardless of the minimum re-crush size, and given that only approximately 400 carats of material (mostly lower-value small stones) were recovered the overall effect of this material on the average total parcel value was small.

For bulk samples processed on-site at the main Diavik processing plant during 2006 and 2007, the mined bulk samples were placed in separate stockpiles for processing in closely monitored batches. To minimise disruption to the operation, bulk sample processing was carried out after a scheduled maintenance shut-down where possible. Before the shut-down, bins would be emptied, any remaining circulating loads discharged, grease tables scraped and any product pulled from the x-ray sorter. Where bulk samples were to be processed during a regular production day, processing and recovery plants would be purged, incurring 2–3 hours of downtime before processing the bulk sample.

For each of the bulk sample batches, lab technicians performed metallurgical surveys assisted by plant operators. In addition, all screens were inspected and replaced when evidence of wear was observed. Gaps in the rolls crusher and cone crusher were monitored and adjusted as necessary. Grease tables were cleaned and prepared before each bulk sample, and the x-ray sorter concentrate and reject containers were emptied.

The normal high security for a diamond operation was enforced throughout the sample processing. All of the areas where diamonds are produced have very limited and controlled access. Card-locked doors control access and strategically installed monitoring cameras operate in sensitive areas. There are random searches for employees exiting from low-risk areas. High-risk areas such as the recovery plant have 100% search policies. DDMI has a trained, full-time security force.

Rough diamonds were recovered from each bulk sample separately and the finished goods were kept apart in the sort house and packaged separately. Labeling was used to identify the parcels and the Production Sorting Facility (“PSF”) in Yellowknife notified of the special shipments and markings. The PSF cleaned and sieved each parcel separately. The rough diamonds were shipped to Rio Tinto’s Antwerp operations for valuation.

LDRC as well as in-pit and underground mini samples were sealed at the drill site /sample collection site and transported to the Rio Tinto Mineral Processing Laboratory at Thunder Bay, Ontario (MPL) and the Saskatchewan Research Council laboratory in Saskatoon, Saskatchewan (SRC) via secure trailer from Yellowknife. The Rio Tinto lab had a Quality Management System (“QMS”) certified to ISO 9001-2008. The SRC lab has a Quality Management System (“QMS”) certified to ISO 17025.

The Rio Tinto laboratory was shut down in 2015 and following this closure all samples were processed at the Saskatchewan Research Council laboratory (SRC). The diamond recovery process at SRC is similar to that at MPL. In general terms the samples were crushed in two stages to –6 mm and treated by dense media separation with a nominal lower cut-off size of 1 mm. The DMS process involves mixing the washed and sized samples with ferrosilicon which is then subjected to a controlled induction density process which separates the product into two components: a floats product consisting of the low-density material and a concentrate consisting of the higher-density material which contains the diamonds. The resulting concentrates were x-ray sorted with magnetic separation, and in some cases caustic fusion of the rejects was done. The +2 mm concentrates were hand-picked, the –2 mm concentrates were caustic-fused, and

all the diamonds were cleaned, sieved, counted and weighed and the results reported by size class.

11.2 Geochemistry Sampling

After geophysical evaluation and ranking, the next exploration step was to carry out frost boil till sampling, stream heavy mineral sampling, and beach sampling from sites selected down-ice from the geophysical targets in order to find down-ice diamond indicator mineral (“KIM”) expressions. Samples were generally 15 litres in size and collected on a grid spacing of approximately 2 kilometres. Current sampling methodologies on the property assume collecting a pre-screened (3 cm mesh) sample of glacial till, though many of the original samples targeted eskers due to their higher concentrations of indicator minerals. Till sampling was slow in turnaround time (often longer than a year) so it was not the main method in the first stages of exploration.

The original heavy mineral process set up at Rio Tinto’s mineral processing laboratory in Thunder Bay, Ontario, was designed to concentrate paramagnetic heavy minerals. Attrition milling was conducted at the lab by rolling crushed kimberlite with large granitic boulders and ceramic balls in a cement mixer. The mixture was constantly rinsed with water to wash away slimes. Once the minerals were disaggregated, the sample was dried. Sieving was performed using a mechanical sieve shaker fitted with Canadian Sieve Series openings at 1.0, 0.5 and 0.25 mm.

Two fractions were then forwarded to magnetic separation. A roll-feed magnetic separator was used to separate paramagnetic and non-magnetic minerals. One magnetic separator was dedicated to only custom samples like kimberlites while another magnetic separator processed till samples. The paramagnetic fractions were then forwarded to heavy liquid separation. Liquid separation was conducted by pouring concentrates into large funnels filled with sodium polytungstate (S.G. 2.89 g/cc). All kimberlitic indicator minerals have greater specific gravity than the liquid, and sank to the bottom. The sinks were tapped off and collected on filter paper, rinsed thoroughly, dried and vialled.

The heavy mineral concentrate produced was then picked for olivine, enstatite, garnet, clinopyroxene, ilmenite, and chromite. Specially trained microscope technicians sorted through all fractions picking out indicator minerals. All samples were forwarded to a geologist for identification and confirmation. Each positive indicator was described and classified before being sent for analysis.

Electron microprobe analyses were conducted by R.L. Barnett Geological Consulting Inc. in London, Ontario. Preliminary indicator mineral plots were faxed to the laboratory and to head office and all data files were emailed to the lab. Analytical data was matched with the descriptions. Interpretation of results was performed by the lab geological staff. Geologist, petrographer and electron microprobe analyst R.L. Barnett was Director of the Electron Microprobe Analytical Laboratory at The University of Western Ontario (London, Ontario) for more than 20 years and, through his private company R.L. Barnett Geological Consulting Inc.,

had been active in analysis of diamond indicator minerals and mineral chemical evaluation for industrial clients worldwide.

11.3 Bulk Density

Moisture and specific gravity sampling procedures were an important part of the core logging procedure throughout exploration and early evaluation of the Diavik resource. As several different methods for specific gravity determination were used on the project during exploration and early evaluation, a thorough review of the historical densities was completed prior to the completion of the 1998 resource model (Armstrong, 1997). Following this review it was determined that only 1996 and 1997 density values would be used to calculate averages for each internal kimberlite geology unit.

Since 2004, core samples have been collected at 6 m intervals down-hole. A 20 cm piece is wrapped in plastic wrap by the driller's helper as the core is removed from the core barrel. The logging geologist, as part of the logging procedure, retrieves this piece. Additionally, samples are collected as the kimberlite is mined. A piece of kimberlite weighing approximately 1 kg is collected at each sample site. Care is taken to choose locations that are as undisturbed as possible so that the geologist is confident that the GPS survey coordinates for the sample location reflect true in-situ location. Approximately 100 in-pit specific gravity (SG) samples were collected for each 10 m mining bench during the recent open pit years. Underground samples are collected in the same manner as mining proceeds in each development drift.

The procedure for measuring density of the kimberlite is similar for both core and hand samples. The hand sample or core sample is broken into two. One piece is weighed both in air and in water to provide the values necessary to calculate a bulk density, measured in g/cm^3 . The second piece is weighed in air and then dried in an oven at 110°C for 24 hours. After drying, the sample is weighed in air again which provides the second value needed to calculate a moisture percentage. This moisture percentage is applied to the previously calculated bulk density to provide a dry bulk density which is used for modeling and reconciliation purposes.

More than 10,000 density samples have been collected (Table 8). Any new drilling at depth is still sampled for density and hand samples continue to be collected as mining progresses. The density samples collected as mining progresses are added to the density estimation in the resource model and are also used to calculate mined tonnages for grade and tonnage reconciliation on a monthly basis.

Table 8 Specific gravity samples available for density estimation

| Pipe | Sample Type | Total Samples |
|-------|-------------|---------------|
| A154S | Drilling | 865 |
| | Mining | 3,350 |
| A154N | Drilling | 826 |
| | Mining | 1,515 |
| A418 | Drilling | 1,059 |
| | Mining | 2,223 |
| A21 | Drilling | 362 |

11.4 Microdiamonds

While microdiamond data has been collected from the project pipes, it is not used for either grade estimation, or internal geologic unit definition. Microdiamond samples are handled the same way as macrodiamond samples in terms of security and transport to Thunder Bay or Saskatoon. Once there they are treated with caustic fusion, undergo a magnetic separation process and then are hand sorted, sieved and weighed, with the results reported by size class.

11.5 Bulk Sampling History

The initial grades and price estimates from the 1995 A154S LDC diamonds warranted the collection of an underground bulk sample to generate a ~10,000 carat parcel of diamonds for valuation. That sample (2,584 tonnes) was extracted from three horizontal drifts 150 m below the lake surface between October and December 1995. The bulk sample was split in half and treated for diamonds in two bulk sample treatments plants available at the time: DDMI's plant in Yellowknife and BHP's Koala plant at the neighbouring Ekati mine during March–April 1996. The diamonds (12,686 carats) were shipped to Rio Tinto's Argyle facility in Australia for cleaning, sizing, sorting and valuation.

The initial grades and price estimates for the A418 LDC diamonds collected during the 1996 program warranted the collection of an underground bulk sample for this pipe also. This sample (3,342 tonnes) was extracted from three horizontal drifts 150 m below the lake surface between October and December 1996 and treated for diamonds through DDMI's plant in Yellowknife over the period March–October 1997. The diamonds (8,325 carats) were shipped to Argyle in Australia for cleaning, sizing and valuation.

In 2006 and 2007, underground bulk samples were collected from A418, A154N and A21. The main objectives for these underground bulk sampling programs were to test machine mining (roadheaders) at Diavik, determine the underground mining conditions present, assess the impact of drill and blast mining versus machine mining on diamond value and provide ~15,000 carats from each of A418, A154N and A21 for price estimations. As an outcome, carats were recovered for the three pipes although prices estimations for A418 and A154N (and A154S) are now based on production data. For A21, bulk mining underground was challenging and provided 8,189 carats from approximately 5,000 tonnes of material mined. (Together with 1,334

additional A21 carats from LDRC drilling in 2008, mentioned in section 10.2, a total of 9,523 carats were collected from A21 for valuation.)

11.6 Diamond Valuation

Diamonds from the original underground bulk samples in A154S and A418 were shipped to Rio Tinto's Argyle Diamonds' Canning Vale Laboratory in Australia for cleaning, sizing, sorting and valuation. This laboratory was owned by the Argyle Diamonds Joint Venture (CRA 60%, Ashton Mining 40%) and was affiliated with Rio Tinto through CRA. The facility provided services only internally and was not certified.

In the subsequent bulk sampling campaigns conducted during 2006 and 2007 to strengthen detailed feasibility studies that were being done to support updated life-of-mine plans, more valuations were performed for three of the Diavik Diamond Mine pipes (A154N, A418 and A21). After processing on-site at the Diavik processing plant, the rough diamonds received final cleaning at Diavik's production sorting facility (PSF) in Yellowknife – where rough diamond production is cleaned, sorted, and split into DDDL's 40% share and DDMI's 60% share – before DDMI's portion was sent to Rio Tinto's Antwerp facilities for sorting and valuation. With the exception of A21, the prices obtained from these 2006/2007 bulk sample programs have since been superseded by more recent updates for planning and economic analysis.

Diamond prices for A154S, A154N and A418 are currently based on production parcels of diamonds. The A154N price is based on a special batch also processed in June 2015 (123,000 carats). The size frequency distribution (SFD) and size/quality distribution (SQD) from this parcel of diamonds is robust up to the 6 ct sizes. Due to the A154N sampling SFD being truncated in the larger sizes, the SFD of the A418 only 2009/2010/2011/2012 production was used as a surrogate for A154N production in the 6 ct and larger sizes. A special batch of kimberlite from A418 was processed through the production plant in November 2015 (139,000 carats). The A418 2009/2010/2011/2012 production data was also used as a surrogate for the 6ct and larger sizes. The A154S price is based on a special batch processed in December 2015 (130,000 carats). Older A154S only production data from the first half of 2007 was used as a surrogate for the 6 ct and larger sizes.

Consistent with diamond industry practices, prices for rough diamonds are proprietary and not made readily available to the general public. Assumed prices used for economic analysis of the Diavik Diamond Mine are discussed later in this report in the section on economic analysis.

11.7 Comment

In the opinion of the QPs, the sample handling, security, treatment and analyses have been carried out in alignment with industry standards and best practices for the type of sampling and the commodity being evaluated.

Procedures are well established and documented. The work is performed by or under direct supervision of senior DDMI staff with involvement from the QPs. Programs are designed with

defined objectives and scope, planned in advance, and carried out under DDMI management with approved budgets and funding in place.

DDMI has a full-time security force for Diavik whose members have prior police or military backgrounds with experiences in surveillance, search, investigation, criminology and enforcement.

The Saskatchewan Research Council laboratory in Saskatoon, SK, is a permanent and well established ISO-accredited facility that processes and analyses exploration and production samples from around the world, specializing in diamond analysis.

Bulk density determination procedures are consistent with industry-standard procedures. Sampling and bulk density determinations are ongoing, and there are sufficient bulk density determinations – over 10,000 to date – to support tonnage estimates.

Diamond valuations and prices used for mine economics and business forecasts are by pipe, based on actual production-scale parcels of rough diamonds. This supersedes earlier estimates based on bulk samples drilled or excavated. The exception is the A21 pipe, which is not yet in production.

12. DATA VERIFICATION

The original database was audited in 1999 by Mineral Resources Development, Inc. (MRDI) and was found to be of very good quality, and essentially free of entry and transcription errors. Extensive checking of original logs for a July 2000 update by DDMI resulted in revision of some interval rock formation limits and toe depths for ten holes. Only one change – a corrected hole length – was significant with the rest having no impact on mineral resource estimation.

At the time of its 2001 due diligence audit for the bank group, Roscoe Postle Associates Inc. (“RPA”) reviewed core logging and other data collection procedures and inspected drill logs and drilling records. RPA examined character samples of the kimberlite core, kimberlite hand samples collected from underground, and photographs of core. RPA obtained and examined the resource digital database and conducted checks as part of the audit. RPA confirmed the earlier MRDI findings. In their April 2005 audit and NI 43-101 Technical Report for the Diavik Diamond Mine, RPA expressed an opinion that the drill hole and bulk sampling data are appropriate for estimation of mineral resources and mineral reserves.

During the LDRC drilling programs, geologists attended the drill rigs 24 hours per day, 7 days per week, to guide sampling, data collection and QA/QC for all drill data. The majority of boreholes were surveyed with a north-seeking gyro, and deviations were reported to be negligible for short holes and up to 7 m over 380 m in the long holes.

In 2005, DDMI Geology performed a significant data consolidation effort involving the establishment of key databases and data validation and accusation systems. In addition to the results of new drilling programs, production mining was producing a large amount of data for which proper storage is required. Prior to this effort, all feasibility data was stored in validated Excel spreadsheets and within the modeling data files. A well-established and commercially-supported database (acQuire) was chosen because it integrated well with DDMI’s modeling software and enjoyed a community of users within the Rio Tinto group worldwide. Validation steps were built into the database processes prior to importing any information to ensure that all coordinate locations, unit naming conventions or survey datum irregularities are identified and corrected prior to adding to the database. From late 2005 onward, all mapping from the mine, ore tracking information, borehole locations and borehole logging data is entered into the database. Validation checking of borehole locations occurs on the front end before the data is added to the database by a built-in validation as well as graphically after the data is entered into the database. All physical data, including borehole collar and down-hole surveys, as well as geological data derived from original borehole logging, go through several verification steps.

A separate acQuire database was built in 2007 to hold all the diamond data relevant to resource evaluation and estimation. Data used in resource calculations is drawn directly from the validated data sources. More recently, new data to be added to the resource model and continued handling of existing data has continued to undergo quality control steps. All of the composite samples are now stored in a format that can be used to estimate grade for the model directly without further importing or file format changes, thus reducing opportunities for data-handling errors.

In spring 2007, new data to be added to A418 were reviewed and checked by Rio Tinto's top geostatistics expert as part of his derivation of the geostatistical parameters required for estimations using the data. A review was also conducted on the existing A21 data to address questions about its resource classifications.

In November 2007, the composite files for all three of the Diavik production kimberlites (A154S, A154N, A418) were extracted from the database into an Excel spreadsheet and then compared to the original datasets in Excel and the composite extracts from the resource models. With all three datasets for each kimberlite in Excel format, calculation fields were set up to ensure that each sample and its corresponding total carat value were identical. From within the existing dataset, only one discrepancy was found and corrected: two composite samples for A418 from 2004 that had their results reversed. Where there were new samples to be added in 2007 (only in A418), data was also loaded into Vulcan visualization software for visual inspection of the data. This was a collaborative process involving two DDMI resource geologists, the chief geologist, and a Rio Tinto principal adviser for the corporation on resource modeling.

Core logging is carried out using a customized logging program (MS Access based) which allows for dynamic QA/QC as only certain values are permitted in each of the fields. Logging is performed by qualified geologists and is reviewed by DDMI resource geologists prior to being entered into the geological database. All core is photographed with the photos stored digitally along with original logs and all additional information corresponding to the borehole (i.e. drilling conditions, hole closure status, samples taken, etc.).

Mine density data is similarly collected in electronic format using pocket PCs. As the sample is collected, it is named and GPS coordinates are measured and stored electronically. As the sample is weighed in the core shack, the weights are added to the same file in the pocket PC. The sample collection software also calculates bulk density, % moisture and dry bulk density as the numbers are entered allowing the geologist to re-measure samples or check for data entry errors as the data is entered. Once the data is complete, it is exported in txt format and imported into the main acquire database. The import object again has additional built-in validation and will not import the data unless it is formatted properly.

Sample tonnages for LDRC samples were calculated from caliper surveys conducted after each hole was drilled. Caliper volumes were multiplied by the sample density to get the caliper tonnage. Sample densities were determined by using the equivalent bench density from the block model. In most cases two caliper surveys were run per hole and the largest diameter per interval was chosen in all cases. Where the caliper diameter reported as null, a theoretical diameter was used plus an increment determined per drilling program based on the average difference between theoretical and actual (Table 9). In addition, during the 2011 A418 drilling program there were a few intervals where the diameter of the hole became larger than the maximum extents of the caliper tool used. For these intervals (which were all less than 5 m) a correction of the recorded caliper diameter plus 62.5 mm was used.

Table 9 Adjustment factors for null caliper diameters

| Program | | Theoretical+ mm) |
|---------|-------|------------------|
| 2011 | A418 | 30 |
| 2011 | A154N | 30 |
| 2009 | A154S | 15 |
| 2008 | A21 | 35 |
| 2005 | A418 | 30 |
| 2004 | A154N | 15 |
| 2004 | A418 | No caliper data |

The caliper tonnages were then compared to both the processed tonnages reported by the lab and the calculated theoretical tonnages. The caliper tonnages were deemed valid with the odd exception where the theoretical tonnage was higher than the caliper tonnage. These were corrected by applying a factor to the processed tonnage that was calculated from the remaining samples of equivalent geology (Table 10). This same factored approach was used where no caliper data was available.

Table 10 Adjustment factors for caliper

| Program | Geology Unit | Factor |
|------------|-------------------------------------|--------|
| 2011 A418 | MFKB | 1.62% |
| | FBLK | 1.88% |
| | VBMK | 1.83% |
| | MUDX | 1.52% |
| 2011 A154N | MRK | 2.62% |
| 2009 A154S | PK | 2.09% |
| | PKx | 1.96% |
| | VK | 2.25% |
| | MUDX | 2.24% |
| 2008 A21 | RVK _m | 1.71% |
| | RVK | 1.78% |
| | HK | 2.00% |
| | MUDX | 1.50% |
| 2005 A418 | MFKB | 1.86% |
| | FBLK | 1.37% |
| | VBMK | 1.33% |
| 2004 A154N | Graded K | 1.11% |
| | MK | 1.13% |
| 2004 A418 | No caliper data or processed tonnes | |

For parts of two holes in the 2011 A418 program — A418LDRC-19 and A419LDRC-21 — the caliper data was particularly weak and using the geology ratios with the processed tonnes also did not give a meaningful result. In both holes an addition of 11.5% was made to the caliper tonnages to provide tonnages in line with the remainder of these holes. For the 2004 A418 program where there were no caliper surveys done and the processed plant tonnes were not properly recorded, a tonnage based on the theoretical diameter was used. As the holes drilled in 2004 do not affect the remaining resource these tonnages were not altered.

Diamond sizing results are received electronically from the laboratories in Thunder Bay and Saskatoon. When the data has been checked and deemed correct it is then transferred to the samples database.

Updating of the internal kimberlite geology contacts and the kimberlite/host-rock contact is carried out twice a year to ensure conformity with findings from active mine development. New contact surfaces are inspected by DDMI resource geologists using three-dimensional graphics and drill hole data, and visual comparisons with the previous surfaces are also made.

After all updates to the resource block model are made, a further check is made on 5 m (the block height) horizontal slices through each of the kimberlites to see that the model blocks were coded correctly. Final steps are to generate 'reserves' to ensure that blocks have the correct pipe and geology unit information, to assess whether the impacts on 'reserves' are within expectations for the changes made, and to compare with previous results. The authors (the QPs) reviewed these results in December 2016 and were satisfied that the changes from 2015's 'reserve' (resource) reports for each kimberlite were in order.

12.1 Comment

The QPs consider that a reasonable level of verification has been completed during both the studies and the subsequent production phases of the mine. No material issues have been left unidentified and unaddressed by the verification work that has been undertaken.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Metallurgical Testing

In 1998 a metallurgical study was undertaken using processing data from the LDC sampling programs. Data from all four pipes were analyzed and metallurgical models were developed to allow for bottle-neck analysis during plant design. Five metallurgical variables were modelled; concentrate %, percentage of tails (<-1 mm), percentage of heavy mineral concentrate in the 1 to 3 mm size range, moisture content (%) and the proportion of -3+1 mm fraction compared to the total concentrate % (capacity index). Metallurgical characteristics were interpolated into a block model using a combination of methods. Concentrate % and moisture % were estimated using simple kriging, constrained to geological units, or groups of geological units. Where there was insufficient data available for estimation (less than 2 samples), a mean value was assigned to the block. All other variables were modelled as a code to provide a general characterization of the predicted properties of a block using indicator kriging. For example, the -3+1 mm variable in the metallurgical model was estimated either as coarse, medium or fine. The indicator kriging estimations were not constrained by geological unit. The models developed in this study were believed to be a reasonable representation of the metallurgical characteristics of the Diavik resources, given the data set provided. These models however, were only considered to be generally indicative of the ore feed characteristics which would be encountered during production.

13.2 Mineral Processing

As a producing mine, the Diavik Diamond Mine operation includes a full-scale permanent ore processing plant that treats run-of-mine material and produces rough diamonds. The Diavik ore processing plant has operated continuously since commissioning in late 2002 and has been processing a blend of hard and soft kimberlites from A154S, A154N and A418.

Section 17 describes the Diavik ore processing plant.

Production-scale bulk samples mined from the operation — known as ‘special batches’ — have been treated through the full Diavik process from time to time (as mentioned elsewhere in this report). These efforts have provided pertinent insights into the production-scale processing characteristics, the sizes and qualities of stones recovered, the overall grade, and the expected (and different) prices for specific pipes or geological domains.

13.3 Comment

The QPs believe that the metallurgical testing and associated analytical procedures have been planned appropriately and carried out competently, and have provided plausible outcomes supporting the economic viability of the Diavik Diamond Mine and the estimation of mineral resources and mineral reserves.

Using the Diavik processing operation itself for metallurgical test work, when studying 'special batch' bulk samples from the mining operation, has provided directly relevant insight into the processing and product characteristics of specific pipes and/or domains and their expected values as they are actually mined and processed. This information contributes to the evaluation and estimation of mineral resources and mineral reserves for the Diavik Diamond Mine.

14. MINERAL RESOURCE ESTIMATES

14.1 Tonnage

Tonnage is calculated from volumes to which density values are applied.

Prior to 2008, an average density per geology unit was assigned to the block model using a simple script. These average densities were calculated from samples all collected earlier than 2000. This approach was sub-optimal due to a broad scatter of the actual rock densities within these units. Averaging these values would have created an excessively smoothed model of the density values which would be a poor reflection of the actual local variations of the rock densities (Abzalov, 2006).

Since many more density samples have been collected since 2000, and as some of the internal geology units have changed, it was decided that density should be modeled using ordinary kriging. As far more in-pit samples have been collected as mining progresses in each pipe (e.g. A154S: ~3,350 in-pit samples versus ~865 core samples), using both sample types provides a more accurate geostatistical interpretation and density estimation.

Since 2008 density has been estimated into the Diavik resource models. All the pipes are based on multiple passes of ordinary kriging with similar parameters, as the sampling densities are similar in each of the pipes.

The density of the MUDX unit is distinctly different from the other units, and there are insufficient samples in it to estimate the density using domaining, and so a single average density of 1.70 g/cm³ is used. Similarly for the density of the waste rock which is assigned a single value of 2.65 g/cm³. These values are overwritten in the model using a script.

14.2 Grade

The current grade estimation uses unconstrained ordinary kriging (OK) of carats per tonne (cpt) in the top portion of the pipes and unconstrained simple kriging (SK) of cpt at lower depths in some of the pipes due to a reduced number of samples (based on the recommendations of Abzalov).

After a period of sustained negative grade reconciliation in 2008, a method of limiting the effect of high grade samples in the estimation was refined for all three pipes. It was not logical to simply remove the high grade samples from the model as proven high-grade pockets did exist, so it was decided that the estimation would use these high grade samples when estimating blocks within 25 m of the sample but for the estimation of any remaining blocks the grade would be decreased. This method better represents the actual variability in grade seen in the mine (all open pit at the time) and has been substantiated using special mining batches and in-pit sampling in the A154S pipe. The new cpt value of the high grade samples used to estimate distal blocks is the 75th-percentile value of the entire sample grade database for each individual pipe (Table 11). The mean grade used for simple kriging at depth is the average grade of

samples within the simple kriged zone used (i.e. below –180 m RL for A418). As there is sufficient sampling at depth in the A154S pipe, simple kriging is not necessary in that pipe.

Table 11 Limitation boundaries and simple kriging mean grade (cpt) values

| Pipe | High Grade Limit | Number of Samples Affected | 75 th Percentile Replacement | SK Mean | SK Depth RL |
|-------|------------------|----------------------------|---|----------|-------------|
| A154N | 8.0 cpt | 6 | 3.19 cpt | 1.99 cpt | -180 m |
| A154S | 9.0 cpt | 25 | 5.99 cpt | no SK | no SK |
| A418 | 7.5 cpt | 47 | 5.32 cpt | 2.84 cpt | -180 m |
| A21 | 6.0 cpt | 16 | 4.20 cpt | 2.60 cpt | 180 m |

The grade of the MUDX unit is distinctly different from the other units but there are insufficient samples in it to estimate the grade, so a single average grade of 0.48 cpt is used. The grade of the waste rock is also not estimated and merely assigned a value of 0.00 cpt. These values are overwritten in the model using a script.

14.3 Mineral Resource Statement

The mineral resources in Table 12 are reported effective as of December 31, 2016 on a 100% basis. Mineral resources are reported exclusive of mineral reserves, and represent material remaining after mineral reserves have been removed for reporting separately elsewhere. Depletion has been included in the estimates. The remaining mineral resources shown in Table 12 are deemed to have reasonable likelihood of being upgraded to mineral reserve or in any case mined in future, based on geologic, mining, processing, economic, tenure and permitting considerations. Nevertheless, it must be cautioned that mineral resources that are not mineral reserves do not have demonstrated economic viability.

Table 12 Mineral resource statement as at December 31, 2016 (100% JV basis)

| Pipe | Measured Mineral Resource | | | Indicated Mineral Resource | | | Inferred Mineral Resource | | |
|---------------|---------------------------|-----|-----|----------------------------|------------|------------|---------------------------|------------|------------|
| | Mt | cpt | Mct | Mt | cpt | Mct | Mt | cpt | Mct |
| A154N | --- | --- | --- | --- | --- | --- | 0.5 | 2.3 | 1.1 |
| A154S | --- | --- | --- | --- | --- | --- | 0.4 | 2.8 | 1.2 |
| A418 | --- | --- | --- | --- | --- | --- | 0.2 | 2.5 | 0.5 |
| A21 | --- | --- | --- | 0.4 | 2.4 | 0.9 | 0.8 | 3.5 | 2.7 |
| Totals | --- | --- | --- | 0.4 | 2.4 | 0.9 | 1.9 | 2.9 | 5.5 |

Totals in the table may not appear to add up because of rounding. This estimate of remaining mineral resources was prepared by or under the supervision of Calvin G. Yip, P.Eng., an employee of DDMI and a Qualified Person within the meaning of NI 43-101 – *Standards of Disclosure for Mineral Projects*.

The estimate reflects a bottom screen size of 1 mm. The mineral resources are all located on the existing mine site and are extensions of the mining reserves for which plans are in place for mining. Property tenure is secure with no outstanding liabilities or disputes. The current mine closure plan will accommodate the mining of the mineral resources.

Factors that could affect the mineral resource estimates include:

- new data from ongoing and upcoming sampling programs;
- updates to assumptions used in estimating diamond carat content, including bulk density, pipe geometry and dimension, grade interpolation method;
- geological interpretation of internal kimberlite units and/or domain boundaries;
- changes to underground mine design and/or planning parameters;
- changes to open pit design;
- unforeseen mine geotechnical and/or hydrological conditions;
- further improvement, or deterioration, of process plant recovery;
- external influences on operating and sustaining capital costs, e.g. fuel prices, escalation;
- diamond price and valuation assumptions;
- foreign exchange rates, especially Canadian versus U.S.

14.4 Comment

In the opinion of the QPs, the mineral resources for the Diavik Diamond Mine are well understood and have been estimated to industry standards with many aspects being among best practices. Given that the Diavik Diamond Mine is an established operating mine, the reporting of mineral resources based on that which remains after removing and reporting the mineral reserves separately is intended to promote transparency about what will be mined and what remains available.

15. MINERAL RESERVE ESTIMATES

15.1 Engineering

Modeled mineral resources that can be mined economically are eligible for consideration as mineral reserves. Economic viability is assumed to be likely if positive cash flows result — or if non-positive cash flows increase net present value (“NPV”) and the overall NPV is positive — after the development and evaluation of fully engineered mine designs, working layouts, extraction and metallurgical schedules, operating and capital costs, property tenure, environmental and social acceptance, market value and demand for the product, and mine closure costs.

The A154 and A418 open pit wall slope design criteria were supported by comprehensive geotechnical and hydrological investigation and analysis. Lerchs-Grossman optimization guided pit shape and size including a determination of the transition depth for open pit versus underground mining in each pipe. Limit equilibrium kinematics as well as distinct element modeling were used in assessing the stability of completed pit designs. Beyond feasibility studies and during operations, pit wall mapping/inspection and seepage monitoring continued. A discrete fracture network and groundwater flow model for the rock mass was developed for Diavik. The A154 and A418 pit designs were reviewed and updated a number of times each during their operating lives, incorporating operating and engineering knowledge gained as mining progressed. The future A21 open pit is expected to be managed in the same way.

The underground mine design was also supported by geotechnical and hydrological investigation and analysis, which by 2005–2007 (underground feasibility study period) had become more extensive than for the initial engineering for the open pits above. Through the 2008–2010 development period and since the 2010 production start-up, engineering and design updates have been ongoing and will continue. The mining methods in two of the three pipes have undergone one change (improvement) to date and concepts are being explored for possible consideration for mining at greater depths in future.

The A154 and A418 dikes are an integral part of the mine engineering for underground mining as well as the open pits, and were designed and built with future (now present) underground mining in mind. To ensure the ongoing integrity of the dikes, they are instrumented extensively with much of the data collection and analysis now automated. A full-time team of geotechnical staff led by a senior geotechnical engineer conducts daily inspection and monitoring.

Mining in the A154 and A418 open pits has finished but the pits remain active as secondary entrances and exits to the underground mine through in-pit portals. Moreover, as they are the crests of the open stopes for the underground sub-level retreat (SLR) and also continue to be the shelf on which the dikes sit as they hold back the waters of Lac de Gras, the stability of both pits remains of paramount importance. The open pit workings continue to be inspected and monitored actively by Diavik’s full-time team of geotechnical staff.

Mine planning and scheduling is carried out daily with medium-range (5-year) plans updated quarterly and life-of-mine projections re-forecasted at least yearly.

DDMI engineering staff are supported from time to time by external design professionals representing reputable engineering firms in the industry. Critical technical matters are undertaken by or under the supervision of licensed professional engineers and geoscientists within as well as external to DDMI. In addition, DDMI holds a corporate Permit to Practice with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists.

The mine designs are consistent with industry practices and have been in compliance with all applicable statutes and corporate standards. Diavik receives regular inspection by territorial mining inspectors.

15.2 Mining Dilution and Losses

The Diavik kimberlites contain various amounts of host rock xenolith material including fresh and altered granite, metasedimentary xenoliths and fragments of cretaceous sedimentary cover rocks. Xenolith material is included as part of the kimberlite volume, and xenolith content within each geological unit serves to dilute the diamond grade. Xenolith content ranges from 2% to 30% for the internal kimberlite units. Re-sedimented units typically have higher xenolith content than pyroclastic kimberlite units due to the method of emplacement. The overall pipe-scale xenolith content is low and has been estimated at ~2% based on core logging and bench face observations (Moss, 2009).

Open pit mining dilution was low due to the sharpness of the ore-waste boundary. The softer kimberlite could be peeled away easily from the contact allowing for straightforward separation of ore and waste. In the open pit, mining dilution only occurred within 1 m of the kimberlite contact. This external dilution ranged from 0% to 20% on an individual ore cut basis. Increased dilution levels were experienced during initial mine start-up (start of 2003 to mid-2004) due to stripping of the overburden till cover and initial break-in period for the mining method. Steady-state open pit production is best represented from April 2004 to September 2012 (end of open pit mining) during which time the open pit saw nominally 2% average dilution. Almost regular spikes in the dilution content represented completion of ore benches where the contact zones were mined. Very low to no dilution occurred when mining the central parts of the kimberlites. The stated open pit reserves had assumed 2% waste dilution by volume (not by weight) where additional country rock equivalent to 2% of the kimberlite volume (but having country rock density) was added to the kimberlite tonnage.

There was virtually 0% ore mining loss in the open pit. This was made possible by the aforementioned sharpness of the ore-waste boundary and the ability to clean the kimberlite off the contact wall. When mining kimberlite at these boundaries, smaller mining equipment and painstaking practices — sometimes under direct supervision of a geology staff member — were employed to achieve the fullest mining recovery of kimberlite as possible.



Figure 12 Kimberlite ore/waste contact wall in the A418 open pit

The future A21 open pit is designed similarly to the A154 and A418 open pits with the same bench heights, and will be mined using the same equipment perhaps with many of the same operators. The same historical open pit mining loss and dilution is assumed for A21.

Underground mining dilution had been assessed regularly since the production ramp-up began in 2010. Because more than one mining method is underway in the underground mine, dilution and losses are a function of the method used, experience and observation. Current assumptions are shown in Table 13.

Table 13 Underground mining losses and dilution

| Pipe | Mining Method | Mining Losses % | Mined Dilution % by weight | Residual Dilution Processed, % |
|-------|--------------------------|-----------------|-----------------------------------|-----------------------------------|
| A154S | Sub-level retreat (SLR) | 5% | 12% ¹ | 7% ¹ |
| A418 | Sub-level retreat (SLR) | 5% | 12% ¹ | 7% ¹ |
| A154N | Blast hole stoping (BHS) | 5% | 1.75% primaries 5% secondaries | 1.75% primaries 5% secondaries |

¹ Planning assumptions reflect that some dilution waste is removed prior to processing, to the extent possible.

Ore losses — due to adhesion to contact walls (and also to backfill surfaces in BHS stopes), through ore passes, and truck-loader re-handling — are viewed as being the same for both of the mining methods. A common loading and hauling operation serves both methods.

Dilution in BHS is based on a possibility of wall rock or backfill mixing with ore when drawing from the stopes. BHS observations to date have not revealed much dilution.

In SLR, mined voids are not backfilled and country rock occasionally spalls off the contact walls to become mixed with the blasted ore as it is extracted from the drawpoints underneath. As mining deepens and the open stope wall lengthens, dilution can be expected to increase due to the higher propensity for falls of wall rock.



Figure 13 Views of the inside of a BHS stope and of the open void left by SLR mining

In the mine and in the run-of-mine blending area, as much dilution waste as possible is removed from the feed prior to processing.

Although the loading and hauling and subsequent removal of waste are a part of the ore delivery activities for the mining crews, for the purposes of mineral reserve estimation dilution is considered to be that which gets processed and which has impact on the delivered grade.

15.3 Mine Economics

The economic viability of mineral reserves for the Diavik Diamond Mine is determined by cash flow modeling and net present value (NPV) for the full business based on 100% of the Diavik Joint Venture. This ensures that the scale and schedule of mining is considered along with all fixed as well as variable operating costs, sustaining capital costs, any mine expansion capital, taxation, royalties and mine closure requirements.

Cut-off grade (break-even) analysis is less accurate, tending to ignore or distort some costs (e.g. unitizing costs that cannot be unitized), but can be used to show where portions of the reserve are potentially only marginal or perhaps sub-economic. Overall, however, mineral reserve grades in the Diavik pipes have been well above cut-off and no selective mining is warranted.

15.4 Stockpiles

Although stockpiling is not part of the Diavik business strategy, small amounts of mineral reserve that have been mined but are awaiting processing exist at any given time. This is surge volume between the mine and the plant, and is a healthy situation that indicates no deficit in mine output and blending options for the plant. For year-end mineral reserve reporting

purposes, this transient surge volume at year-end is included in the mineral reserve as “stockpile” and not re-posted to its source pipe because it has been depleted from the pipe.

15.5 Mineral Reserve Statement

Once the resource geology and grade confidence is established through classification into measured, indicated and inferred categories, the conversion of resources to reserves is based on confidence in mineability and economics. For all of the Diavik reserve pipes — A154S, A154N, A418, A21 — engineering and economic criteria support the following interpretation:

- measured resources = proven reserves
- indicated resources = probable reserves
- inferred resources = none included in reserves

Mining and economic confidence is based on:

- sustained and consistent production performance since the 2003 mine start-up;
- successful transition from open pit to underground mining;
- proven processing performance and product recovery;
- reasonably understood geology and reconciliation of forecast/model with actual results;
- engineered mine designs, detailed working plans, regular updates to mining schedules;
- favourable cut-off grade analysis and life-of-mine business projections;
- management-supported ongoing orebody knowledge programs.

The mineral reserves in Table 14 are reported effective as of December 31, 2016 on a 100% basis. Depletion has been included in the estimates. Totals in the table may not appear to add up because of rounding. This estimate of mineral reserves was prepared by or under the supervision of Calvin G. Yip, P.Eng., an employee of DDMI and a Qualified Person within the meaning of NI 43-101 – *Standards of Disclosure for Mineral Projects*.

Table 14 Mineral reserve statement as at December 31, 2016 (100% JV basis)

| Pipe | Proven Mineral Reserve | | | Probable Mineral Reserve | | | Proven + Probable Mineral Reserve | | |
|--------------------------|------------------------|------------|-------------|--------------------------|------------|-------------|-----------------------------------|------------|-------------|
| | Mt | cpt | Mct | Mt | cpt | Mct | Mt | cpt | Mct |
| A154N Blast hole stoping | 3.6 | 2.4 | 8.5 | 4.6 | 2.3 | 10.8 | 8.2 | 2.3 | 19.3 |
| A154S Sub-level retreat | 0.3 | 3.2 | 1.0 | 0.7 | 3.7 | 2.8 | 1.1 | 3.6 | 3.8 |
| A418 Sub-level retreat | 1.8 | 4.1 | 7.5 | 1.9 | 3.1 | 6.0 | 3.7 | 3.6 | 13.4 |
| A21 Open pit | 3.3 | 2.8 | 9.4 | --- | --- | --- | 3.3 | 2.8 | 9.4 |
| Stockpile | 0.03 | 2.8 | 0.1 | --- | --- | --- | 0.03 | 2.8 | 0.1 |
| Totals | 9.1 | 2.9 | 26.4 | 7.3 | 2.7 | 19.5 | 16.3 | 2.8 | 46.0 |

This estimate reflects a bottom screen size of 1 mm. The mineral reserves are all located on the existing mine site. Property tenure is secure with no outstanding liabilities or disputes. A regulator-approved mine closure plan and financial security are in place.

Factors that could affect the mineral reserve estimates include:

- new data from ongoing and upcoming sampling programs;
- updates to assumptions used in estimating diamond carat content, including bulk density, pipe geometry and dimension, grade interpolation method;
- geological interpretation of internal kimberlite units and/or domain boundaries;
- changes to mine design and/or planning parameters;
- unforeseen mine geotechnical and/or hydrological conditions;
- depletion due to mining or sampling;
- further improvement, or deterioration, of process plant recovery;
- external influences on operating and sustaining capital costs, e.g. fuel prices, escalation;
- diamond price and valuation assumptions;
- foreign exchange rates, especially Canadian versus U.S.

15.6 Comment

In the opinion of the QPs, the mineral reserves for the Diavik Diamond Mine are well understood and have been estimated to industry standards with many aspects being among best practices. Expectations based on these and earlier statements of mineral reserves for the Diavik Diamond Mine have generally been met or exceeded since the start-up of the mine in 2003.

16. MINING METHODS

16.1 Mine Geotechnical and Hydrology

Ground stability is important to the Diavik Diamond Mine because all of the reserve pipes are under a large lake. Figure 14 shows the size of the lake that Diavik is mining under. Mining is made possible by building water retention dikes and dewatering portions of the lake so that mining can take place within the dewatered area. Ongoing open pit stability is vital to the structural integrity of the dikes, and avoiding subsidence from underground mining beneath the pits is equally vital.



Figure 14 Diavik Diamond Mine surrounded by Lac de Gras

Diavik has two completed open pits and inter-connected underground workings under them. The A154 open pit has provided access to the A154S and A154N pipes since 2003 and finished in 2010, but its stability remains important for the underground mining now taking place beneath it. Table 15 summarizes the general geotechnical design parameters for the A154 open pit, which has 10 m bench heights triple-benched.

Mining in A418 open pit began in 2007 and finished in late 2012. Table 16 summarizes the general geotechnical design parameters for A418 open pit, which has the same triple-benched concept as A154 open pit.

A new open pit, Diavik's third, was approved in late 2014. Also under water like A154 and A18, A21 will require a dike which is estimated to take three years to build and commission. After pool dewatering, pre-production overburden stripping during 2018 is expected to release first feed to the plant by late 2018. Table 17 summarizes the general geotechnical design parameters for the upcoming A21 open pit.

Slope stability analyses involving the collating and analyzing of structural geology or defect data, intact rock strengths, rock mass strength, and groundwater were undertaken to develop geotechnical models for pit optimization and pit design. This was done a number of times during

the production years of the first two open pits. Reassessment and redesign during the open pit operating years was an ongoing process. Likewise, the A21 open pit will undergo periodic reassessment and design update during its estimated seven-year life as operating experience and new geotechnical information is gained.

Although the A154 and A418 pits are now no longer producing and no further excavation will occur to alter the final wall slope configurations, ongoing inspection, monitoring and analysis of the open pits by full-time technical staff is continuing in order to ensure the continuing integrity of the dikes which now protect the underground operation beneath the pits.

Table 15 A154 open pit general geotechnical design parameters

| Rock Type | Wall Sector Azimuths | Bench Height (m) | Bench Face Angle (°) | Catchment Berm Width (m) | Inter-Ramp Angle (°) |
|------------|----------------------|------------------|----------------------|--------------------------|----------------------|
| Waste Rock | 345°–045° | 30 | 65 | 11.2 | 50 |
| | 045°–115° | 30 | 60 | 11.7 | 46 |
| | 115°–345° | 30 | 70 | 11.7 | 53 |
| Kimberlite | 000°–360° | 10 | 65 | 8 | 38 |

Table 16 A418 open pit general geotechnical design parameters

| Rock Type | Wall Sector Azimuths | Bench Height (m) | Bench Face Angle (°) | Catchment Berm Width (m) | Inter-Ramp Angle (°) |
|------------|----------------------|------------------|----------------------|--------------------------|----------------------|
| Waste Rock | 000°–285° | 30 | 70 | 10 + 13 | 53 |
| | 285°–350° | 30 | 60 | 10 + 13 | 50 |
| | 350°–360° | 30 | 70 | 10 + 13 | 53 |
| Kimberlite | 000°–360° | 10 | 65 | 8 | 38 |

Table 17 A21 open pit general geotechnical design parameters

| Rock Type | Wall Sector Azimuths | Bench Height (m) | Bench Face Angle (°) | Catchment Berm Width (m) | Inter-Ramp Angle (°) |
|------------|---|------------------|----------------------|--------------------------|----------------------|
| Waste Rock | 260°–070° | 30 | 70 | 12 | 53 |
| | 070°–175° | 30 | 60 | 12 ^{Note1} | 47 to 53 |
| | 175°–240° | 30 | 46 | 12 | 36 |
| | 240°–260° | 30 | 52 | 12 | 40 |
| Kimberlite | Mined in 5 or 10 m benches but none to be left in final pit walls | | | | |

Note 1: For this sector, an extra-wide catchment berm bench is prescribed for “350 Bench” (elevation 9350 m RL)

The engineering design of the underground mine relied on geomechanical analyses involving the collating and analyzing of existing and new structural geology or defect data, intact rock strengths, rock mass strength, and groundwater. Underground production commenced in early 2010, but development had been underway since 2005. The underground mine design was based on rock strength, measured as uniaxial compressive strength (UCS), and local structural geology and hydrology.

Rock strengths are a concern mainly in the kimberlite owing to the generally low strengths compared to non-kimberlite rocks. The host rock is mostly massive and intact granite with rock strengths of 100 MPa or higher, which is orders of magnitude greater than strength values found in the kimberlite. Underground mine development in the host rock is therefore less governed by rock strength but still influenced by structure and hydrology.

Figure 15 shows that the kimberlite rock strengths are quite variable. For Diavik as an underground mine, design of the ore extraction over the mine life will likely mean periodic review of mining methods, ongoing ground behaviour monitoring and design updates.

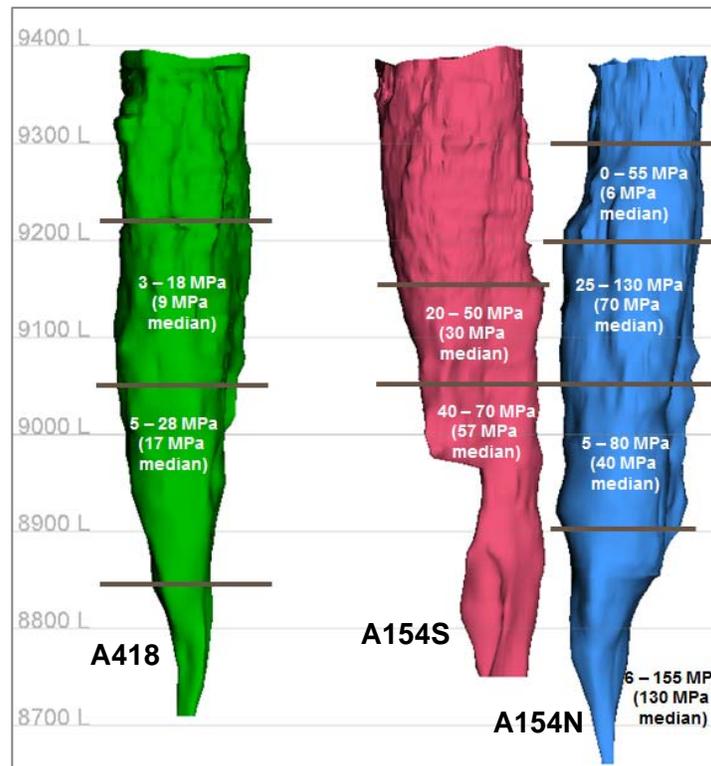


Figure 15 Underground feasibility mine design parameter – rock strength (UCS)

For both underground and surface mining, risk assessments for mining are conducted by operating and technical staff when considering major changes. This helps develop confidence in the proposed changes and promotes greater preparedness prior to implementing.

Pit and dike seepage management, wall depressurization, and run-off and mine water handling were — and still are — ongoing activities in the A154 and A418 open pits. These activities are fully anticipated for the future A21 open pit as well.

Seepage along the inside toe was anticipated and provided for in the design of the A154 and the A418 dikes and is managed through collection basins, pumps, inspection and monitoring. The A21 dike will also have seepage management systems and procedures built into the overall

dike stability monitoring program that will be coordinated with an expansion of the existing team of full-time geotechnical staff.

Certain sectors of the first two open pits required depressurizing (reduction of porewater pressures) in order to reinforce the wall design, and vertical wells rather than horizontal drainages have been effective. A system of many wells is planned for reinforcing the A21 open pit design as well.

Water management in the open pits was initially a staged program driven by a wait-and-learn approach in the absence of a predictive model. Over time, major pumping stations and water handling systems were designed and installed in the open pits. In contrast, the underground mine is designed with underground pump stations and scheduled progressive expansions of the water handling system. Underground mine drainage is integrated with the established open pit water handling systems. Portals in the pit walls, used for many purposes, also provide options for maintaining a contingency drainage system as back-up to the permanent underground system.

Since 2006, significant expenditures for borehole drilling and testing have been made to improve not only the characterization of the hydrogeological conditions surrounding the resource but to fuel the ongoing development of a predictive model to guide mine design and planning. Through the marriage of hydrogeology and structural geology and supported by extensive laboratory testing, a discrete fracture network and flow model was developed for Diavik. Hydrogeology drilling was carried out directly for this, but opportune tests were also done where possible at holes drilled for other purposes. Ongoing appreciation of mine dewatering helps to ensure that mine designs and budgets include adequate provision for maintaining a viable and safe mine operation.

All mine water — dike and pit wall seepage, inflows from the kimberlite and country rock mass, surface run-off, precipitation — is collected via ditches, sumps, pumps and pipelines for storage and treatment in the wastewater treatment plant. Daily open pit mine water volumes exceeded 20,000 cubic metres per day (m^3/day) prior to commissioning the underground system. The Diavik Diamond Mine was built to include a water treatment plant with an initial treatment capacity of 30,000 m^3/day . As part of the planned infrastructure expansion to support the transition to underground mining, the water treatment plant was expanded to 60,000 m^3/day with a short-term peak capability of 90,000 m^3/day . This was to recognize the increasing mine inflows from underground.

16.2 Mining Methods

The stated reserves are contained within engineered mine designs incorporating the most recent data, design assumptions and operating experiences. These designs are subject to change as subsurface conditions change and experience continues to be gained.

Mining at Diavik began with open pit mining. It is a low-cost bulk mining method providing quick return on investment. Figure 16 shows the two pits and the remaining kimberlite left for mining from underground. The boundary between open pit and underground was based on the

economics of the A154S and A418 pipes; A154N's economics became known only after the mine had been built and expansion of the A154 open pit was not considered due to surface infrastructure including the dike.

The top of each of the pipes was as close to 20 m from land surface so open pit mining was viable. Both of the pits were based on Lerchs-Grossman optimization with further refinement during subsequent detailed designs. Beneath the pits, underground mining is technically and economically viable for all three pipes. Therefore, the mining limits where pit meets underground were further refined to satisfy several goals:

- maximize use of lower-cost open pit mining; use open pit methods to mine as much of the upper underground reserve as possible;
- avoid leaving any ore remnants in the ultimate completed open pit that would be unmineable from underground; leave mineable faces/shapes in the final open pit that can be fully recovered from underground;
- eliminate leaving ore as a crown pillar; develop methods/plans to mine all ore.

The mine plan for underground start-up year 2010 involved the above activities in A154S for the transition between open pit and underground mining. Open pit methods were used in conjunction with underground mining to extract the high-grade A154S crown pillar at least cost. For the A418 pit/underground interface in 2012, the selected underground mining method was designed to leave no crown pillar and was started immediately after the completion of open pit mining.

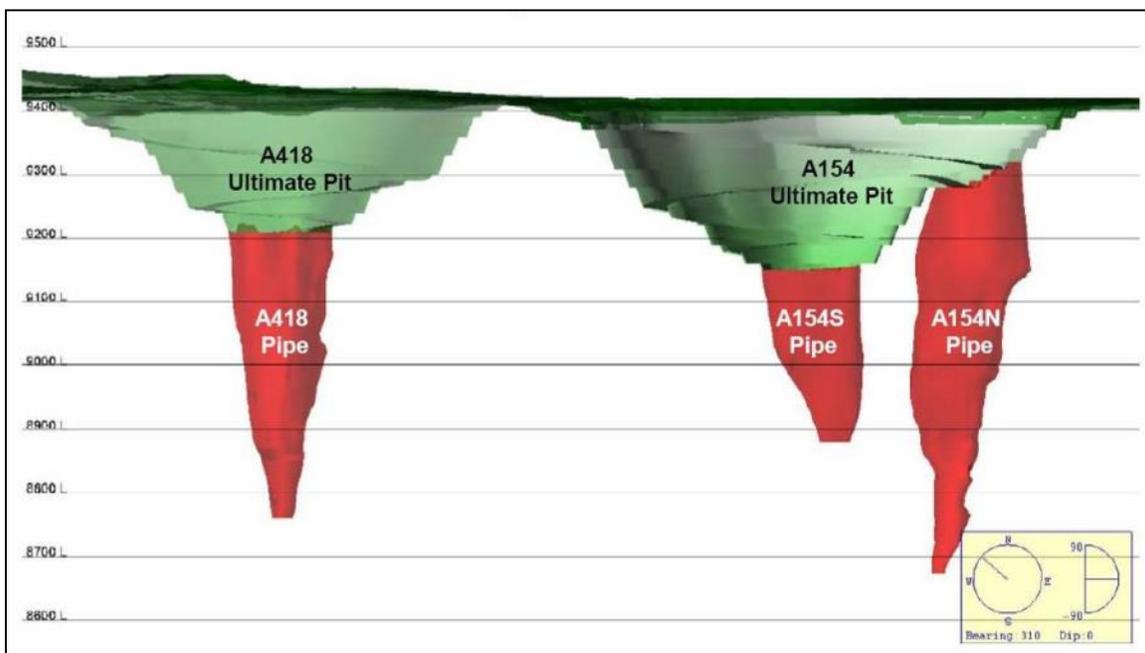


Figure 16 Diavik open pit mining (first two pits)

Figure 17 shows the underground mine arrangement. The plan is based on two mining methods: sub-level retreat (SLR) for A154S and A418, and blast-hole stopping (BHS) with backfill for A154N.

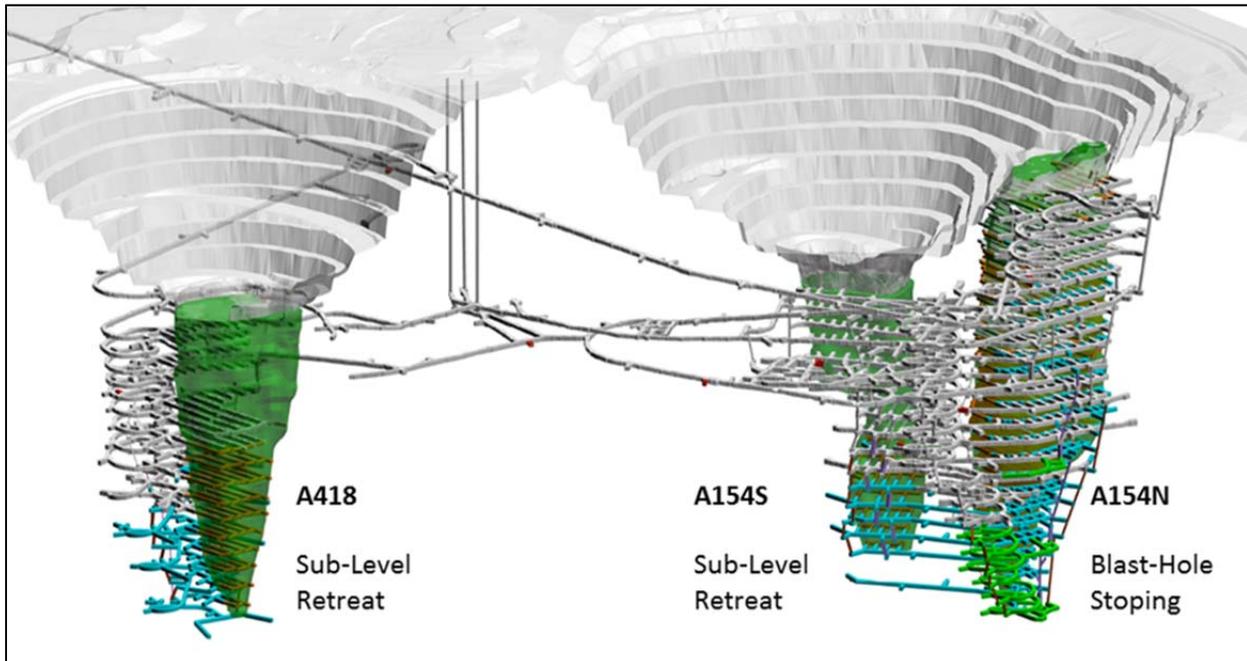


Figure 17 Diavik underground mining

Blast hole stoping (BHS) with cemented backfill was identified during 2005–2007 feasibility studies as suitable for stronger kimberlite, > 30 MPa. Figure 18 illustrates blast hole stoping. It is a bottom-up method relying on competent rock overhead. It is a bulk method in that several weeks' worth of production is created by a single blast. Several stopes can be in production concurrently to ensure continuous utilization of crew roles and uninterrupted ore flow through overlapping stope development. However, as a bottom-up method, mine development to depth is an up-front cost.

Underground mining for the A154N kimberlite is BHS. A154N's location within the wall of the A154 open pit and within the foundation host rock very near the A154 dike makes the requirement for backfill in this mining method most suitable for overall stability of the integrated pit-dike-underground system.

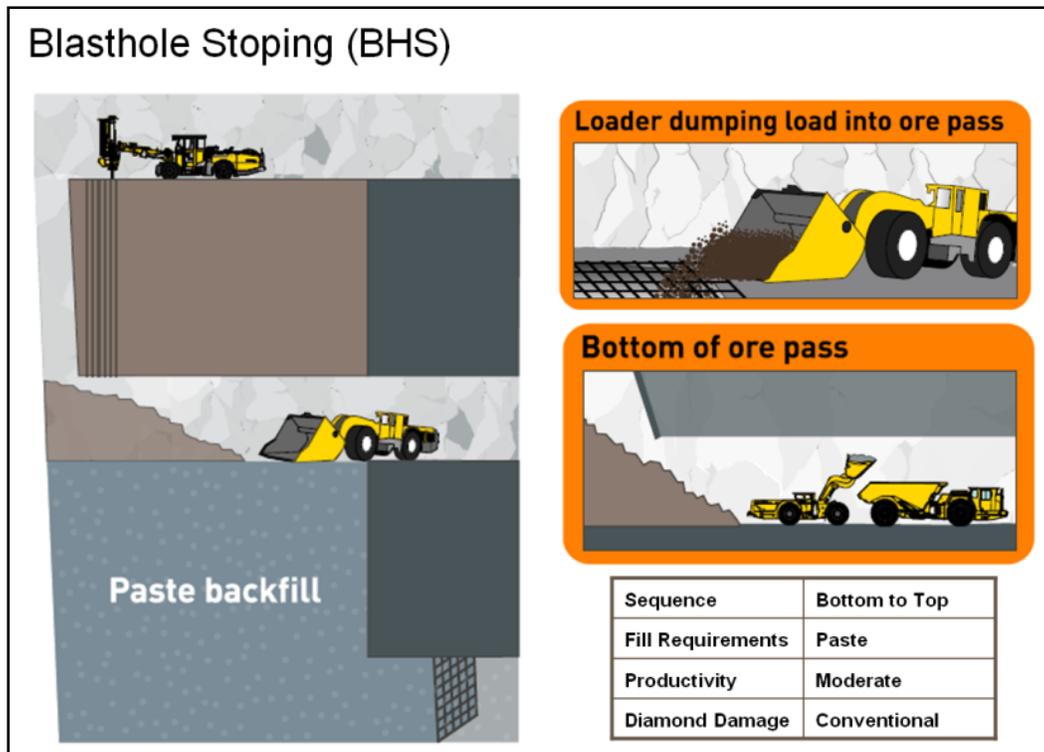


Figure 18 Blast hole stopping

A mining method called underhand cut and fill (“UCF”) was going to be used in kimberlite having rock strengths weaker than 30 to 50 MPa. As such, the entire A418 pipe and possibly some small selected horizons in both A154S and A154N were originally earmarked for UCF. Ideally suited for weak rock, UCF is a top-down method in which mining takes place underneath cemented fill that was used to backfill the previous level overhead, and the weak rock is underfoot. Given the relative softness of the kimberlite, Diavik had planned to do this without blasting by using continuous mining machines. A roadheader and a drum miner, similar to those used in underground potash mining, had been tested and purchased for this. However, because ore is broken only at the time it is needed and no large-scale blasting is done to build inventories of broken ore, it is therefore more labour-intensive and higher-cost than BHS.

In search of an alternative, technical studies in 2010 led to Diavik’s adoption and switch to a sub-level retreat (SLR) method (also called sub-level open retreat, or sub-level open benching). SLR lessens reliance on kimberlite strength during the mining cycle and instead relies on the competence of the surrounding country rock to allow the comparatively weaker kimberlite within to be bulk-mined in a controlled retreating stope sequence. As a top-down method, an increasingly deepening open-air void is left as SLR mining pushes deeper over time. With competent surrounding wall rock and virtually complete removal of the kimberlite in a single pass without primary and secondary stoping, backfill is not used. This offers notable time and cost saving. SLR is illustrated in Figure 19.

Studies completed in 2011 indicated that the 100% UCF plan for A418 underground could be replaced by 100% SLR. New underground development and infrastructure planning was carried

out for conversion to SLR leading to stope production by end of 2012 shortly after completion of the A418 Pit.

Also in 2011, an upper zone of the A154S underground that was structurally problematic for BHS mining was converted to SLR on a trial basis. A154S underground is now also mined using 100% SLR.

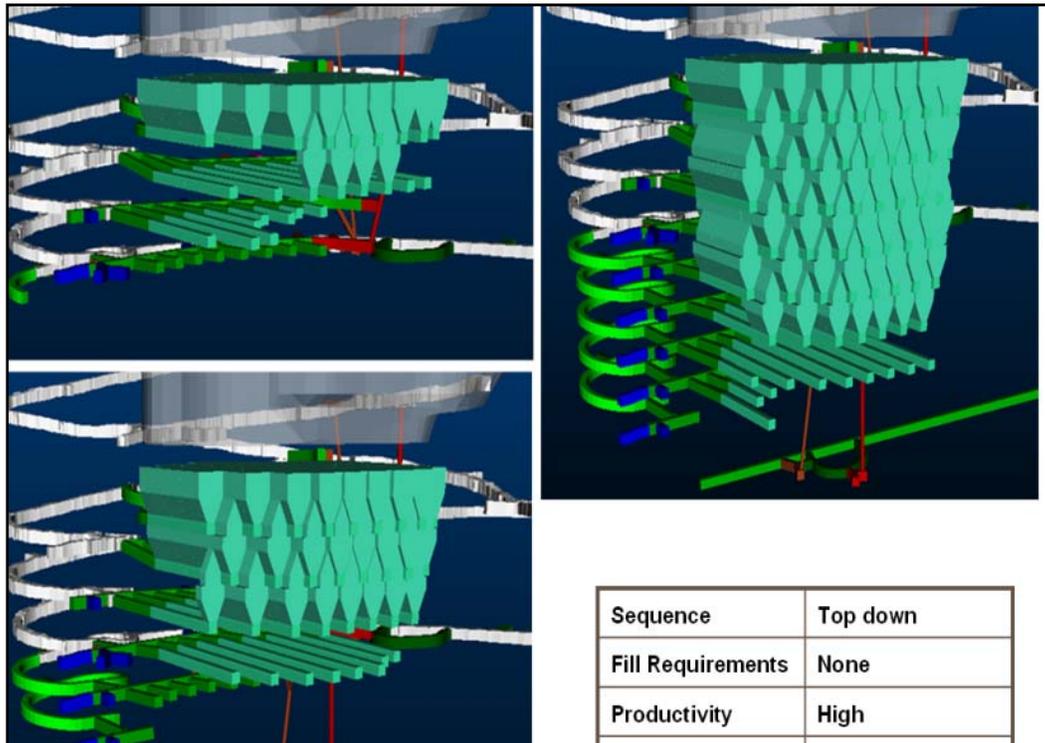


Figure 19 Sub-level retreat

Over time, the deepening of the open void left behind as SLR mining advances downward naturally increases the potential for granitic host rock material to fall from the walls onto the blanket of blasted ore that follows the mining downward. This is due to a number of influences including rock-mass structure, stress relaxation, weathering, moisture, freezing and thawing. Some granite has started to fall in and the impact on mining dilution is a topic of current discussion as operating and planning experience continues to be gained with SLR mining.

Refinements to the mining methods including possible alternative methods may be considered in future as a continuous improvement process.

16.3 Operations

The Diavik Diamond Mine operates 24 hours per day, 365 days of the year. Crews at this remote site are resident on site while they work 12-hour shifts for 14 days, then rotate home for 14 days of rest. Four rotating crews cover 12-hour dayshifts, 12-hour nightshifts, on-site and off-site rotation.

Mine design, planning and scheduling is based on 5 m intervals.

Benches in the two completed open pits and the future A21 open pit are 10 m high. Catchment berms in the final walls are located every three benches, and the 'triple-benched' 30 m walls are pre-sheared (pre-split) in a single 30 m pass. The combined A154-A418 open pit operation was designed to supply 1.5 million tonnes per annum (Mtpa) of kimberlite and exceeded this soon after 2003 start-up, peaking at 2.4 Mtpa sustained during 2006–2008. Waste-to-ore ratios were comparatively high, averaging 10-to-1 over the life of the pits. Total ore and waste mining peaked at more than 31 Mtpa and averaged between 20–25 Mtpa for most of the combined two-pit life. The A21 open pit will have a similarly high waste-to-ore ratio and is expected to deliver between 0.2 to 1.0+ Mtpa, averaging around 0.6 Mtpa, from 2018 to 2023.

Underground, blast-hole stopes are planned 25 m high and sub-level retreat stopes are also 25 m. Both mining methods take place simultaneously and multiple faces are in production from more than one level. Production ramp-up to the targeted steady-state output of 1.5–1.8 Mtpa ore took three years (2010–2012) as mine development in the granitic host rock pushed ahead to access additional ore faces. For 2013, Diavik's first full year underground, the mine produced 1.9 Mt of ore and, with ore stockpiled from the open pit, processed 2.1 Mt. For 2014, 2.1 Mt of underground ore was mined and, with stockpiled ore, nearly 2.3 Mt was processed. Subsequent underground operating performance to the end of 2016 has been at similar levels.

For each of the pipes, pre-production stripping was carried out to remove lake-bottom sediments and glacial till (collectively referred to as overburden) that covered the bedrock and kimberlite pipe. Indistinguishable in the field and therefore mined as a single unit, the overburden was placed in a designated area so that it can be accessed and used in future for mine closure work.

Most of the waste material mined is rock. A waste rock management plan has been in place since mining began. Waste rock is separated and stored as three types:

- Type 1 – no acid generation potential, suitable for all rockwork construction;
- Type 2 – possible low acid potential, to be stored in designated locations only;
- Type 3 – potential for acid generation, to be stored in designated locations only.

The acid generation potential is believed to be a function of sulphur content in occurrences of biotite schist. The identification of the three types of rock is either by geologist's visual inspection or — during the peak open pit mining years — on-site laboratory sulphur determination performed on samples of blast-hole cuttings. The permanent storage locations for Type 3 rock are topographic lows having no net discharge. Type 2 storage locations either have no net discharge or can be contained. To date, there has been no acid generated in the rock dumps.

For the future A21 open pit, plans are in place for the removal and utilization of the overlying overburden for Diavik-wide mine closure purposes. The waste rock that will be mined at A21 has been confirmed as non-acid-generating (all Type 1) and will either be used for mine closure and other general rockwork projects or otherwise placed near the pit on a dump site that has been permitted.

The open pit mining fleet was purchased new in 2001 and commissioned in 2002 for the inaugural 2003 Diavik mine start-up. Some replacements and additions were made in subsequent years as required. After completion of open pit mining in September 2012, and with A21 still in feasibility phase, some of the equipment was sold, some was mothballed, and some remains in use for ongoing general site requirements. The peak open pit mining fleet was comprised of:

- Drilling
 - 1 Drilltech D90KS rotary drill
 - 3 Drilltech D75EX rotary-percussion drills
 - 1 Atlas Copco ROC L8 small-dia. track-mounted percussion drill
- Loading
 - 1 Terex RH200 hydraulic shovel
 - 1 Hitachi EX3600 hydraulic shovel
 - 1 LeTourneau L-1400 front-end wheel loader
 - 1 Caterpillar 5130 hydraulic excavator
 - 1 Hitachi EX1900 hydraulic excavator
 - 1 Hitachi EX1200 hydraulic excavator
- Hauling
 - 11 Komatsu 830E 218-tonne haulage trucks
 - 8 Komatsu HD785 91-tonne haulage trucks
- Ancillary
 - 1 Komatsu WD600 rubber-tired dozer
 - 3 Komatsu D375A tracked dozers
 - 2 Caterpillar D10T tracked dozers
 - 2 Caterpillar 16H graders
 - 2 Komatsu PC600LC backhoes
 - 1 TowHaul lowboy with Caterpillar 789 tractor

For the planned A21 open pit, which is smaller, the following reduced fleet is envisioned:

- Drilling
 - 3 Drilltech D75EX rotary-percussion drills
- Loading
 - 1 Hitachi EX2600 hydraulic shovel (EX3600 replacement)
 - 1 LeTourneau L-1350 front-end wheel loader (L-1400 was replaced)
 - 1 Hitachi EX1900 hydraulic excavator available if needed
 - 1 Hitachi EX1200 hydraulic excavator available if needed
- Hauling
 - 4 Komatsu 830E 218-tonne haulage trucks upper benches only
 - 3 Komatsu HD785 91-tonne haulage trucks
 - 3 Caterpillar 777 91-tonne haulage trucks retain from dike constr.
- Ancillary
 - 2 Caterpillar D10T tracked dozers
 - 2 Caterpillar 16H graders
 - 1 Komatsu PC600LC backhoe

Acquisition of underground mining equipment began in 2005 when development commenced and the fleet has continued to evolve since. The main pieces of underground mining equipment are:

- Drilling
 - 4 Atlas Copco Boomer 282 development drifting jumbos
 - 2 Atlas Copco Boomer M2C development drifting jumbos
 - 1 Cubex Orion development/production/utility drill
 - 5 Atlas Copco Simba M6C production longhole drills
 - 1 MacLean BH-3 Blockholer secondary breaker
- Loading
 - 3 Atlas Copco ST1020 6 yd³ (4.6 m³) scooptrams
 - 7 Atlas Copco ST14 8 yd³ (6.4 m³) scooptrams
 - 7 Atlas Copco ST1530 10 yd³ (7.5 m³) scooptrams
- Hauling
 - 3 Atlas Copco MT436B 32.6-tonne (36-ton) haulage trucks
 - 5 Atlas Copco MT5010 50-tonne haulage trucks
 - 9 Atlas Copco MT6020 60-tonne haulage trucks
- Ground control
 - 7 Atlas Copco Boltec MC rock bolters
 - 2 Normet Spraymec 6050 shotcreting equipment
 - 2 Normet MF 500 Transmixer cement transporter
- Ancillary
 - 2 Komatsu GD655–5 grader
 - 1 Gradall excavator
 - 2 Caterpillar 430 Backhoe
 - 10 Caterpillar IT loaders/forklifts
 - 1 Atlas Copco MT416 articulated boom truck c/w/ HIAB

Marcotte scissorlift trucks and cassettes for ANFO, fuel, oil and lube, pipe
Getman man carriers

Underground ore and waste is brought to surface at one of three portal entrances by underground haulage trucks and dumped on the ground in designated piles. The “portal muck” is then picked up by front-end loader and put onto surface haulage trucks (kept in service after the end of open pit mining) to be hauled either to the waste-rock dump (if waste rock) or to the ore processing plant. Underground materials handling systems were considered and would have had positive cost-benefit, but the availability of fully-owned loaders and trucks after the completion of open pit mining provided an existing means of overland materials transport with attractive unit costs, no additional investment and no additional critical-path construction during underground development.

Cemented rock-fill (“CRF”) is used as backfill underground. It is back-hauled into the mine (A154N only) from the nearby backfill plant by empty underground haulage trucks on their return trips. The 2007 feasibility study had envisioned the manufacture and pumping of paste backfill, when the sub-level retreat (SLR) pipes were originally conceptualized as underhand cut-and-fill (UCF) operations and all three pipes were going to be backfilled. The conversion of A418 and

A154S from UCF to SLR (prior to any backfill being placed in them) eliminated the need for backfill there, leaving only A154N requiring filling. This allowed for a simplification and an overall cost reduction to use less-expensive CRF instead of paste, thus eliminating the grinding circuit in the backfill plant as well as a mine-wide paste pumping system.

16.4 Mine Production Plan

The mine plan is based on mining and processing from all four kimberlite pipes concurrently. Current production comes entirely from underground mining in A154S, A154N and A418. Open pit production from A21 becomes available after completion of the A21 dike construction and pre-production overburden removal. The entry of A21 into the feed blend coincides with the depletion of A154S, so effectively three pipes are in production at any time. A production plan for the mineral reserves (only) is shown in Table 18 and Figure 20.

Table 18 Mineral reserves mine production plan (100% JV basis)

| | | | | Totals | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---------------------------|---------------------|--------|----------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A154S | Sub-Level Retreat | Waste | M tonnes | 0.221 | 0.071 | 0.094 | 0.056 | - | - | - | - | - | - |
| | | Ore | M tonnes | 1.051 | 0.460 | 0.360 | 0.230 | - | - | - | - | - | - |
| | | Grade | cpt | 3.57 | 3.49 | 3.60 | 3.69 | - | - | - | - | - | - |
| | | Carats | M carats | 3.752 | 1.604 | 1.297 | 0.851 | - | - | - | - | - | - |
| A418 | Sub-Level Retreat | Waste | M tonnes | 0.391 | 0.131 | 0.067 | 0.115 | 0.057 | 0.020 | - | - | - | - |
| | | Ore | M tonnes | 3.735 | 0.942 | 0.910 | 0.770 | 0.750 | 0.363 | - | - | - | - |
| | | Grade | cpt | 3.60 | 4.44 | 3.89 | 3.50 | 2.89 | 2.34 | - | - | - | - |
| | | Carats | M carats | 13.432 | 4.183 | 3.539 | 2.692 | 2.170 | 0.848 | - | - | - | - |
| A154N | Blast Hole Stopping | Waste | M tonnes | 0.376 | 0.067 | 0.055 | 0.023 | 0.068 | 0.111 | 0.027 | 0.010 | 0.014 | 0.001 |
| | | Ore | M tonnes | 8.200 | 0.751 | 0.825 | 0.935 | 0.950 | 1.062 | 1.130 | 1.201 | 1.225 | 0.120 |
| | | Grade | cpt | 2.35 | 2.31 | 2.43 | 2.39 | 2.30 | 2.32 | 2.34 | 2.39 | 2.33 | 2.25 |
| | | Carats | M carats | 19.260 | 1.735 | 2.006 | 2.238 | 2.181 | 2.465 | 2.639 | 2.874 | 2.850 | 0.271 |
| TOTAL UNDERGROUND | | Waste | M tonnes | 0.988 | 0.270 | 0.216 | 0.195 | 0.125 | 0.131 | 0.027 | 0.010 | 0.014 | 0.001 |
| | | Ore | M tonnes | 12.985 | 2.153 | 2.095 | 1.935 | 1.700 | 1.425 | 1.130 | 1.201 | 1.225 | 0.120 |
| | | Grade | cpt | 2.81 | 3.49 | 3.27 | 2.99 | 2.56 | 2.33 | 2.34 | 2.39 | 2.33 | 2.25 |
| | | Carats | M carats | 36.444 | 7.522 | 6.842 | 5.781 | 4.351 | 3.313 | 2.639 | 2.874 | 2.850 | 0.271 |
| A21 | Open Pit | Waste | M tonnes | 25.217 | - | 1.295 | 8.635 | 7.400 | 4.375 | 2.330 | 1.182 | - | - |
| | | Ore | M tonnes | 3.324 | - | 0.205 | 0.365 | 0.600 | 0.875 | 1.170 | 0.109 | - | - |
| | | Grade | cpt | 2.84 | - | 2.89 | 3.19 | 3.84 | 2.82 | 2.31 | 1.93 | - | - |
| | | Carats | M carats | 9.443 | - | 0.593 | 1.165 | 2.303 | 2.469 | 2.703 | 0.210 | - | - |
| Stockpiles | | Ore | M tonnes | 0.027 | 0.027 | - | - | - | - | - | - | - | - |
| | | Grade | cpt | 2.85 | 2.85 | - | - | - | - | - | - | - | - |
| | | Carats | M carats | 0.076 | 0.076 | - | - | - | - | - | - | - | - |
| TOTAL ORE TO PLANT | | Ore | M tonnes | 16.335 | 2.180 | 2.300 | 2.300 | 2.300 | 2.300 | 2.300 | 1.310 | 1.225 | 0.120 |
| | | Grade | cpt | 2.81 | 3.49 | 3.23 | 3.02 | 2.89 | 2.51 | 2.32 | 2.35 | 2.33 | 2.25 |
| | | Carats | M carats | 45.963 | 7.598 | 7.434 | 6.947 | 6.654 | 5.783 | 5.342 | 3.084 | 2.850 | 0.271 |

The underground production (A154S, A154N, A418) suggested here is consistent with prevailing plans for the Diavik Diamond Mine. Internally, additional plans are prepared with the mineral resources included as well so that the economic viability of material with a likelihood of being mined in future can be assessed with a level of rigour. Mineral reserves only are shown in this report. A schedule that includes some or all of the remaining mineral resources would not suggest an extension of the mine life that is currently anticipated.

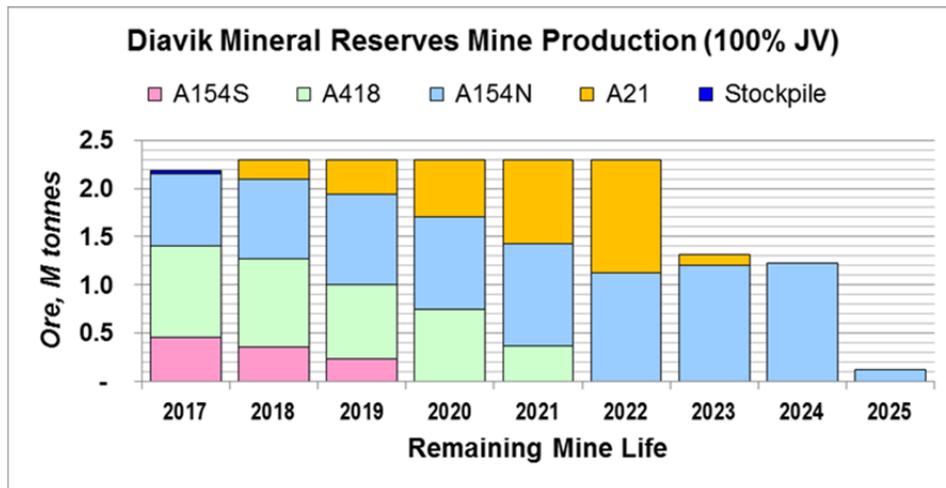


Figure 20 Mineral reserves mine production plan

A21’s strategic role is to maintain full utilization of the processing plant, perhaps achieving peak throughputs that were achieved in the past (2006–2008). Further metallurgical testing and modeling remain to be done to assess further the impact of adding A21 to the feed blend. The A21 delivery profile provides a ‘ramp-up’ for lessons learned while gaining processing experience with A21 kimberlite.

16.5 Comment

The QPs are of the opinion that:

- Mine design has incorporated geotechnical and hydrological considerations warranted by the Diavik conditions and mining methods selected.
- Three kimberlite pipes are being mined concurrently as a single underground mine with common access and infrastructure and a single crew and supervision structure. This follows an initial decade of open pit mining for the three pipes via two pits by a similarly common crew and supervision structure.
- Mining methods at Diavik, past and present, have been conventional using equipment that is that is common in the industry.
- Sufficient equipment and fit-for-purpose infrastructure are available and planned for carrying out the mine plan.
- Mine plans are achievable and have been reasonably demonstrated by actual operating performance.

- Sufficient storage areas for mined waste materials exist and a waste rock management plan is well established.
- The future A21 dike and open pit is underpinned by an approved feasibility study including economic analysis, funding, a construction program, and a dedicated project team.
- The mineral reserves provide a remaining mine life to possibly 2025 under current geologic, engineering and economic assumptions.

17. RECOVERY METHODS

17.1 Kimberlite Processing

The Diavik ore processing plant has operated continuously since commissioning in late 2002 and has been processing a blend of hard and soft kimberlites from A154S, A154N and A418. Designed originally for 1.5 million tonnes of feed per annum (Mtpa), expansion to more than 2 Mtpa was achieved steadily and quickly through continuous improvement without capital expansion. Throughput peaked at 2.4 Mtpa during a period of exceptionally favourable ore handling characteristics. Table 19 summarizes production ore processing to date and Figure 21 shows the plant.

Table 19 Mineral processing production at Diavik (100% JV basis)

| Calendar Year | Kimberlite Processed millions of tonnes |
|---------------|--|
| 2003 | 1.2 |
| 2004 | 1.9 |
| 2005 | 2.2 |
| 2006 | 2.3 |
| 2007 | 2.4 |
| 2008 | 2.4 |
| 2009 | 1.4 |
| 2010 | 2.1 |
| 2011 | 2.2 |
| 2012 | 2.1 |
| 2013 | 2.1 |
| 2014 | 2.3 |
| 2015 | 2.0 |
| 2016 | 2.2 |

Open pit mining (2003–2012) was also originally scheduled to supply 1.5 Mtpa of ore to the plant but was able to support the accelerated throughputs with the addition of more mining equipment. Year 2009 production was an anomaly due to planned curtailment during a market disruption associated with a global financial crisis at the time. From 2013 onward, Diavik has been a 100% underground mine which has to date continued to supply 2+ Mtpa of ore to the plant. Mine planning forecasts indicate that underground mine output will decrease gradually over time as the mine gets deeper and the kimberlite pipe dimensions get smaller. New production from the future A21 open pit will maintain an overall 2+ Mtpa to the plant when fully underway in late 2018.

Diamond ore processing uses no chemicals to separate diamonds from kimberlite. The gravity-based methods used rely on the relatively heavier weight of diamonds to separate them. Figure 22 explains the method and Figure 23 is the flow diagram for the process.

Since 2015, two streams have been added to the coarse diamond fraction in recovery. In October 2014, a grease table was added to the -12 +6mm fraction that scavenged the rejects from the primary free-fall machines. In October 2016, an additional x-ray machine was installed that allowed the scavenging of the -30mm +6mm fractions (the entire range) of the primary free-fall x-ray rejects.



Figure 21 Diavik processing plant

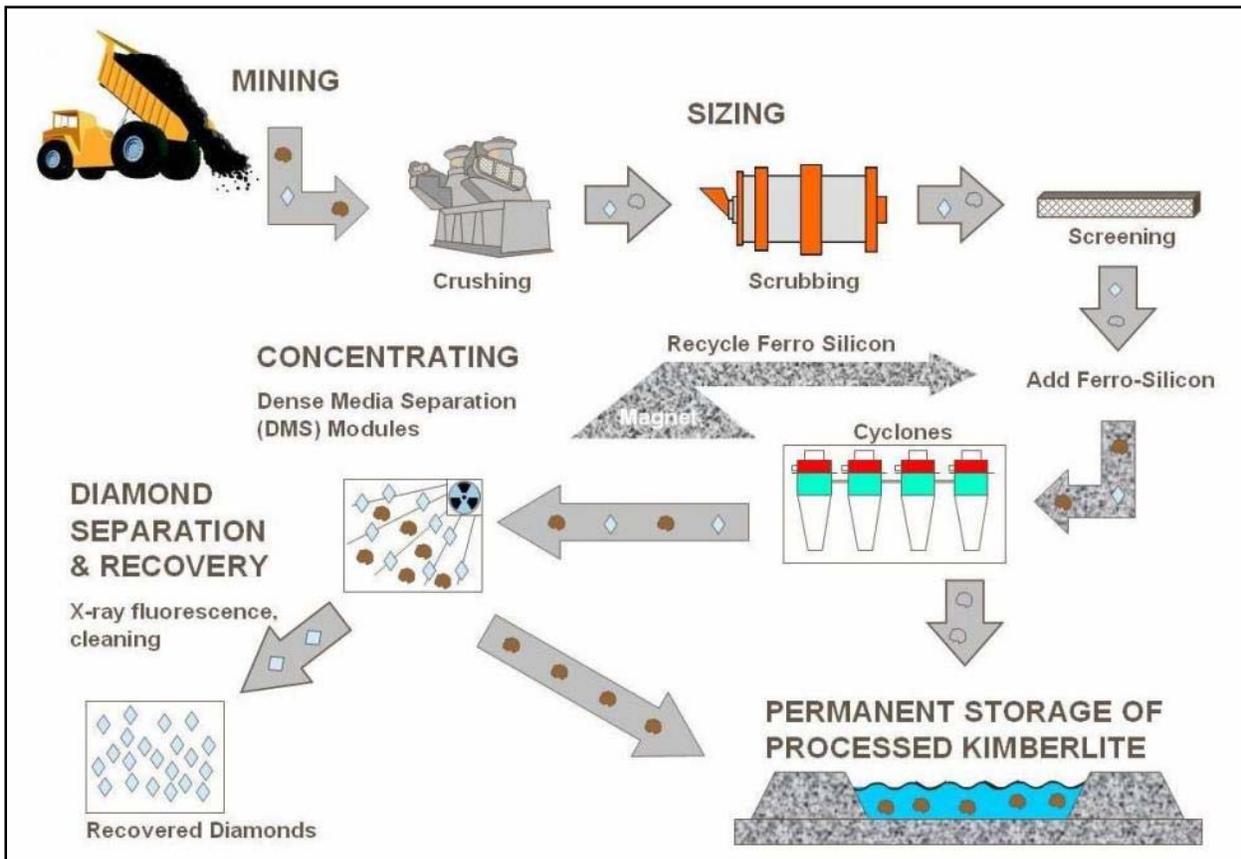


Figure 22 Diavik processing schematic

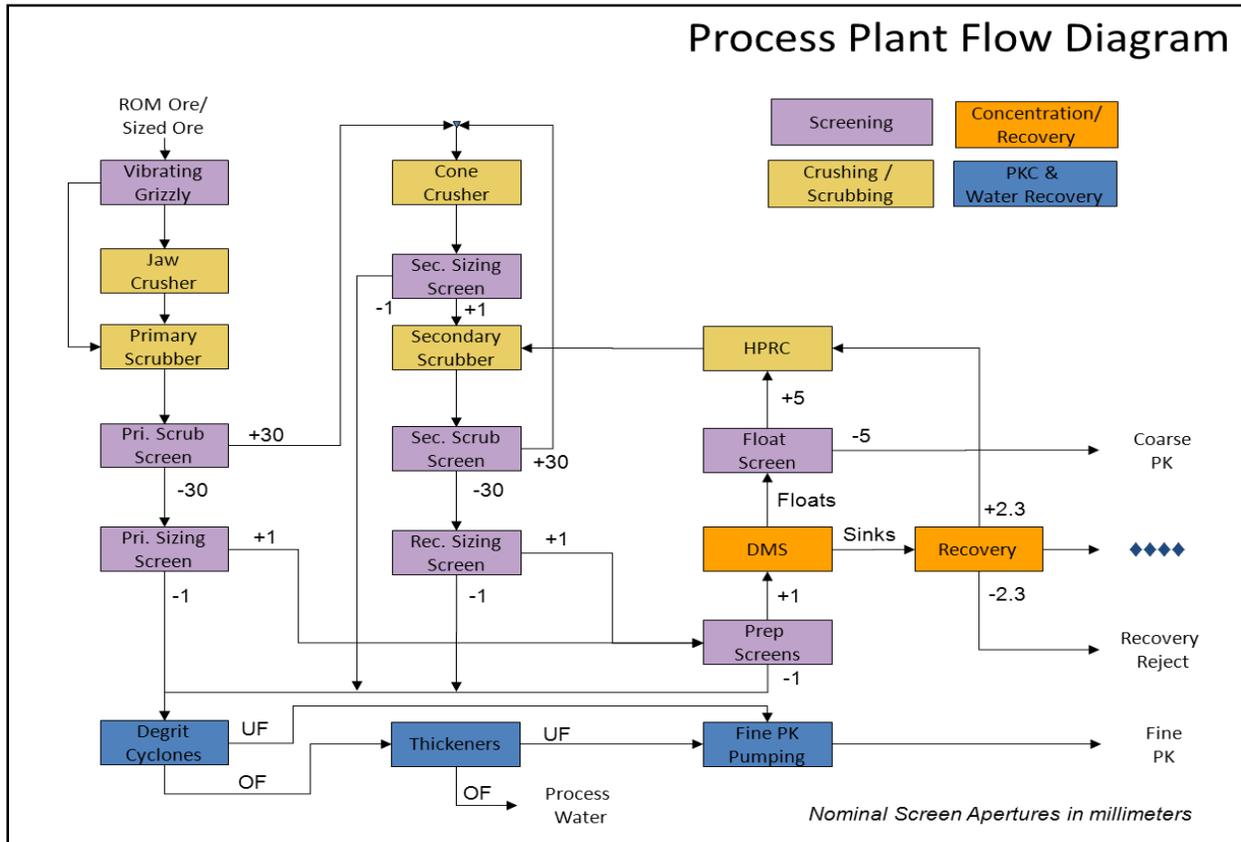


Figure 23 Diavik processing flow diagram

Figure 24 is a flow diagram for the recovery plant. In the recovery section of the plant, the diamonds are separated from the waste minerals using x-rays that trigger the unique characteristic of diamonds to glow. This triggers photo-electric sensors that direct strategically-placed air blasts to blow the diamonds into collection receptacles. Waste material is re-crushed if it is greater than a specific size otherwise the material is considered rejects and is stockpiled with a possibility to be reprocessed in future. The recovered stones then move through a series of sorters to the bottom of the processing plant where — under stringent security surveillance — an authorized employee measures and records the weight of the stones and also removes any non-diamonds.

Total recovery of all stones larger than the screen aperture has been the goal as small diamonds are economically viable for Diavik to recover. Grease tables have been incorporated into the recovery plant to support this. The screen size was 1 mm initially but has since been reduced to 0.85 mm. Nominal screen size is reported as 1 mm to provide a small allowance for wear.

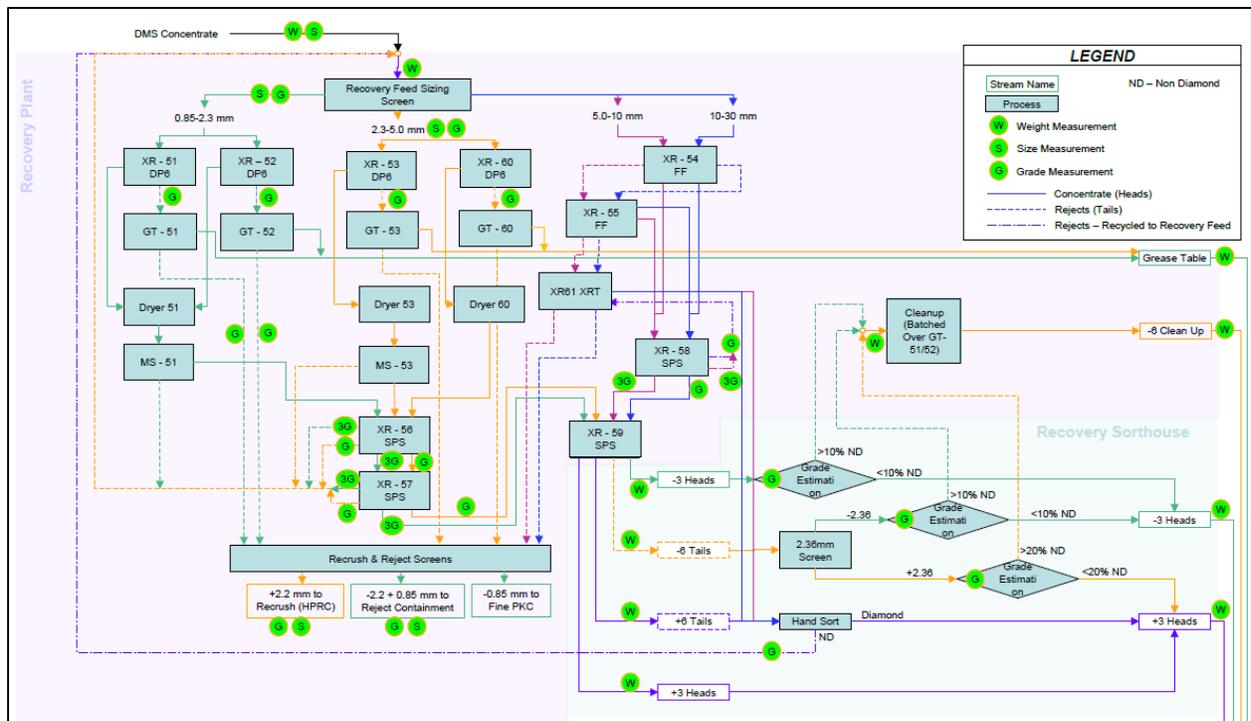


Figure 24 Recovery plant flow diagram

The recovered diamonds are stored in a secured vault while waiting to be flown to Yellowknife for further cleaning and sorting. The diamonds are separated and packaged by size, weighed and stored in a special suitcase for shipping. The diamonds are flown discreetly but under security escort to the Diavik Diamond Mine's product splitting facility ("PSF") in Yellowknife where it is "split" by size and value into respective shares for the two Diavik Joint Venture entities. The PSF's quality management system is ISO 9001 certified. Figure 25 shows the PSF which is located in the city of Yellowknife.



Figure 25 Diavik's high-security product sorting facility in the city of Yellowknife

Staff at the PSF monitor for any diamond breakage that may result from mining, especially blasting, which would compromise the value of the stones; however, breakage has not been a problem to date.

A21 open pit kimberlite is expected to join the feed stream in late 2018. Based on initial assessment and processing trials of bulk A21 samples from 2007, there is reasonable confidence at a feasibility level that prevailing processing performance can be sustained with the addition of A21 to the feed blend. Further sampling and metallurgical testing ahead of A21 production is planned and budgeted. A suite of densimetric, grindability and strength tests are planned for calibrating a SysCAD model to determine an optimal range of how much A21 could be in the blend. There might also be possible bottleneck scenarios with A21. A21 is expected to have a relatively high clay content compared to the other Diavik pipes in production, and the consequent loading of the thickening and DMS circuits may necessitate upgrades to the thickeners, pumps and DMS cyclones.

17.2 Recoverability and Reconciliation

Reconciliation refers to the comparison of actual production to any number of original estimates of production, most commonly to mine plans or resource and reserve models. Reconciliation is carried out monthly and annually according to the Reconciliation Standard Operating Procedures (Thompson, 2009). This comparison is used to measure the performance of resource/reserve estimates, mine plans and the process plant. In making such measurements, any opportunities for improvement can be identified and implemented.

Tonnage reconciliation at the Diavik Diamond Mine is done on a monthly basis and compares:

- the processed tonnes measured on the weightometer at the front end of the plant, and
- the tonnage calculated from the geologic resource model using solids created from as-mined survey data.

Grade reconciliation compares the grade predicted by the model to the calculated recovered grade (recovered carats divided by weightometer tonnage).

Both grade and tonnage reconciliation have been calculated monthly and annually since 2006. Table 20 shows the comparison of model to actual on an annual basis.

Annual grade reconciliation in particular has been excellent overall, with the exception of years 2008 and 2010. Poor grade reconciliation in both of those years was the result of insufficient representative sampling (which was rectified soon afterward in both cases).

Table 20 Annual reconciliation of tonnage, grade and carats

| Year | Tonnage Reconciliation | Grade Reconciliation | Carat Reconciliation |
|------|------------------------|----------------------|----------------------|
| 2006 | 104% | 105% | 100% |
| 2007 | 94% | 101% | 96% |
| 2008 | 106% | 87% | 93% |
| 2009 | 95% | 93% | 86% |
| 2010 | 108% | 87% | 94% |
| 2011 | 115% | 99% | 114% |
| 2012 | 108% | 98% | 105% |
| 2013 | 105% | 97% | 102% |
| 2014 | 98% | 104% | 101% |
| 2015 | 100% | 100% | 100% |
| 2016 | 99% | 97% | 96% |

17.3 Processed Kimberlite Containment

The processed kimberlite containment, or PKC, is built in a natural valley on the mine site and is bounded by dams at either end. At the completion of mining, the PKC will be approximately 1 kilometre long and 1.3 kilometres wide, and will contain up to 40 vertical metres of processed kimberlite. A closure plan is in place for the PKC when processing operations cease in the future.

17.4 Comment

The ore processing plant on site has operated continuously since the mine's commissioning in late 2002 and has met expectations in terms of throughput and diamond recovery.

There are no deleterious elements in diamonds processing. However, large amounts of granite or mud can cause processing difficulties but this has been handled by sorting away as much granite as possible from the feed and by blending kimberlites from different pipes/domains for optimum throughput.

The addition of new kimberlite from the A21 open pit in the near future is not expected to impact overall processing adversely if managed proactively. Further metallurgical testing of A21 kimberlite has been planned and funded.

18. PROJECT INFRASTRUCTURE

18.1 Re-Supply Logistics and Personnel Transport

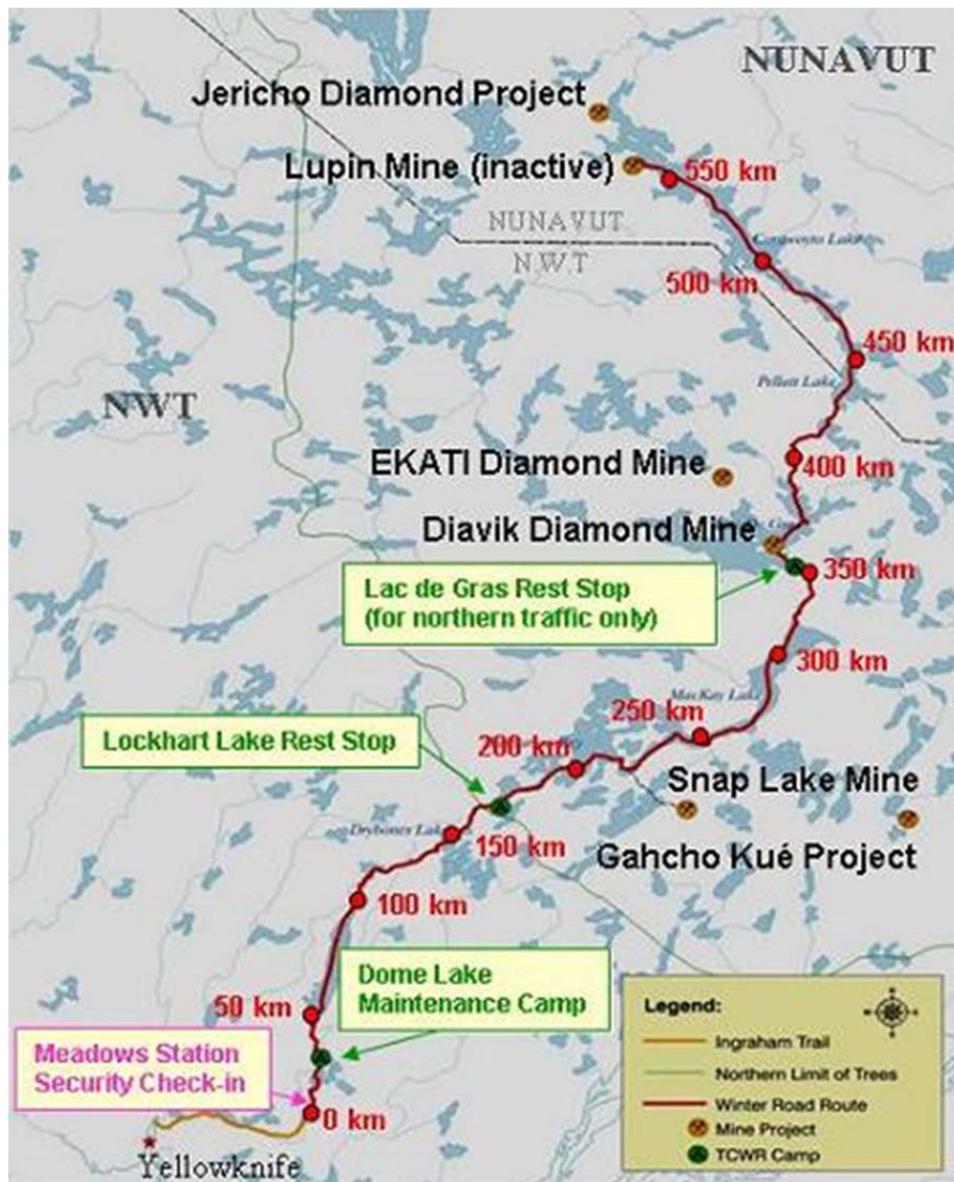
The Diavik Diamond Mine is located on the arctic barrenlands approximately 300 km northeast of the city of Yellowknife. Road access to the mine is available for only eight to ten weeks each year between January and March. This annual winter ice road is constructed and operated as a joint venture between the Diavik, Ekati, and Gahcho Kué diamond mines which operate in the region. Each mine shares the cost of construction, operation, maintenance and closure of the annual winter road. Other projects such as exploration sites and outfitting camps along or near the route are also served by the road on a toll basis. The winter road is shown on Figure 26.

Most of the bulk supplies for the diamond mines each year including fuels, lubricants, explosives, construction materials, and large pieces of equipment are transported over the winter road. To date, the total number of truckloads on the road ranges from 3,500 to nearly 11,000 each year, representing from 120,000 to 330,000 tonnes of freight per season. Although most trucks return empty, backhauls are used as much as possible to transport materials off-site during the road season. To date, between 165 and 890 loaded backhauls have been made each year. Diavik is typically the second-largest user of the road after the larger Ekati diamond mine. The distance between Yellowknife and the Diavik Diamond Mine is approximately 425 km. The logistics of planning a full year's worth of freight and executing the delivery within less than two months is a critical requirement for achieving the mine plan every year.

The Diavik Diamond Mine is accessible by air year round. The Diavik mine site has a 1,600-m-long all-weather gravel airstrip that meets federal air transport requirements. The facility is equipped with runway lighting, an air traffic control centre, and an 'apron' (a.k.a. 'tarmac', 'ramp') area for offloading, parking, fueling and boarding several aircraft. The airstrip accommodates the large Lockheed L382G Hercules transport aircraft that operate in the region. Freight is also brought in on Boeing 737 Combi aircraft. Personnel are transported to and from the site from Yellowknife and several northern communities by small commuter aircraft including Dash 7, Beechcraft 99, King Air, and Twin Otter. Also, weekly passenger service to and from Edmonton is provided by Boeing 737 and Avro RJ85 regional jet.

The procurement and delivery of up to a year's worth of goods is supported by a materials management operation on site that includes indoor and outdoor warehousing, bulk fuel and lube tankage and distribution, bulk explosives (ammonium nitrate) storage, on-site staffing and mobile fleet for the handling of goods and materials.

The movement of goods and personnel is also supported by strict security controls for the protection of people, the goods, the site, and the organization. The scope ranges from traffic control on the ice road to screening of goods and passenger baggage arriving on site, to criminality background checks on visitors and workers, to electronic surveillance as well as active patrols, investigation where required, and movement of rough diamonds.



Source: Tibbitt To Contwoyto Winter Road Joint Venture, 2017

Figure 26 The Tibbitt-to-Contwoyto annual winter ice road

18.2 On-Site Operations Support

The remoteness of the mine requires the site to operate as a self-contained community.

Workers and visitors are accommodated in a modern integrated complex offering single-occupancy quarters, high-quality meals in an upscale dining room, laundry, recreational and educational facilities.

A large administration and maintenance complex includes offices for staff and change rooms for workers as well as warehouse space and a 10-bay maintenance shop for servicing a variety of equipment including the large open pit haulage trucks.

Six 18-million-litre diesel fuel tanks contain more than a year's supply of fuel for heating, mobile equipment, and power generation. All of the site's electrical power is generated on site from two diesel generation plants plus a four-turbine wind farm. An extensive electrical distribution network includes more than 200 telephone poles. The two power plants have a combined installed capacity of 47 megawatts. The wind farm — the first large-scale system in Canada's Northwest Territories — was commissioned in late 2012. Able to operate in temperatures as low as -40°C , wind power provides nominally 10% of the mine's power needs. Heat for the site is through recovery of waste heat from the power generation plants, with an adjacent boiler plant held in reserve for additional heat as needed.

The largest building and biggest consumer of power on site is the ore processing plant. A large area outside at the feed end of the plant is where the blending of ore feed from the different kimberlite pipes takes place. Plant throughput and diamond recovery are controlled by the balance of hardness and softness, grade (carats per tonne), and geo-metallurgical characteristics. Nearby, almost adjacent to the ore processing plant is the processed kimberlite containment (PKC). Engineered into a natural valley in the centre of the island, the PKC is bounded by rockfill dams constructed at both ends. At the completion of mining, the PKC will be approximately 1 km long and 1.3 km wide and contain up to 40 m of processed kimberlite. Current closure planning for the PKC includes covering it with mined rock to seal it permanently.

Numerous other major infrastructure include:

- two water-retention dikes built to hold back the waters of Lac de Gras temporarily to facilitate mining the kimberlite pipes; construction of a third dike commenced in 2015 and is on track for completion in 2018;
- engineered storage piles for the glacial till overburden and country rock produced in the course of mining; a rock management plan is in place for rock having potential for long-term acid generation;
- rock crushing and backfill (for the underground mine) manufacturing plant;
- three active portals to the underground — a main portal and one each in the A154 and A418 open pits; an exploration and sampling portal for A21 (2005–2007) sits decommissioned;
- mine air heaters and fresh air ventilation intake fans for the underground mine;
- explosives magazines and a bulk ammonium nitrate prill storage facility;
- a federally regulated commercial bulk explosives emulsion manufacturing plant.

Process water is recirculated and reused with minimal makeup water taken from Lac de Gras. Drinking water is drawn from Lac de Gras and chlorinated. A state-of-the-art sewage treatment plant for treating domestic sewage serves the entire site. All wastewater, minewater, seepages and surface run-off are impounded and treated before release back to Lac de Gras. The water treatment plant is able to handle $60,000\text{ m}^3/\text{day}$ of water with short-term capacity for up to

90,000 m³/day. Solid wastes are collected daily and either incinerated or placed in the approved landfill.

Voice communication and data transmission on site are conducted with Internet Protocol (IP) technology and connected by satellite to Yellowknife. The telephone system uses voice over IP and is based on equipment that also supports the data network. Network connections between buildings are through fibre optic cables with conventional copper wiring within each building for computers and telephones.

Figure 27 is an aerial view of the Diavik Diamond Mine showing the compact yet extensive infrastructure for the fully operational mine on an island of limited area. The view includes most of the facilities described although scale precludes identifying specific items. The ore processing plant is the prominent blue and white rectangular building in the left-hand side of the photo. The six (four and two) 18-million-litre fuel storage tanks are the cluster of red/brown structures further to the left.



Figure 27 Aerial view showing Diavik Diamond Mine site and overall infrastructure

18.3 Corporate and Administrative

DDDLP and its parent Dominion Diamond Corporation are currently headquartered in Yellowknife, the capital of the Northwest Territories. Dominion's offices are in the Precambrian Building, a prominent office tower in the heart of the downtown. Executive, finance, strategic development, human resources, community partnerships and government relations for Dominion's wider mining interests in the territory are presently conducted from these offices including DDDL P's involvement with the Diavik Diamond Mine. In November, 2016, Dominion Diamond Corporation announced the relocation of its corporate head office from Yellowknife, Northwest Territories to Calgary, Alberta. The move is projected to be completed by the middle

of calendar year 2017. Notwithstanding, Dominion Diamond Corporation will continue to maintain a smaller office in Yellowknife, Northwest Territories, including human resources, community partnerships and government relations.

DDMI, manager and operator of the Diavik Diamond Mine, is also headquartered in Yellowknife. DDMI's offices occupy a floor in the Northwestel Tower which is also a prominent building in the heart of downtown. DDMI's core focus is managing and operating the Diavik Diamond Mine for which executive, finance, strategic development, human resources, community partnerships, government relations and Diavik Joint Venture functions are conducted from these offices.

Both of the Diavik Joint Venture participants have had a strong and permanent presence in Yellowknife and make regular visits to communities in the region to maintain stakeholder engagement and foster mutual support between mine and community.

Figure 28 shows each of the downtown Yellowknife office towers in which Dominion and DDMI are headquartered. The buildings are near to one another, as seen in the left-hand picture.



Figure 28 Corporate headquarters of Dominion (L) and DDMI (R) both in Yellowknife

18.4 Comment

In the opinion of the QPs, the existing infrastructure is adequate and appropriate for supporting the estimated mineral resource and mineral reserve, and appears able to support the mine plan for the estimated remainder of the mine life.

19. MARKET STUDIES AND CONTRACTS

19.1 Markets

The rough diamond market is unlike conventional markets for other natural resource commodities, for several reasons:

- product characteristics are not homogenous and have wide ranges of size, colour and quality in infinite combinations;
- no agreed standard is used for the classification of diamonds;
- trading prices are not published or benchmarked;
- each seller has proprietary marketing and selling arrangements that are intentionally non-transparent for competitive reasons;
- the value chain is not transparent in terms of value added from rough stones to polished gems to the retail jewellery which ultimately drives demand and price.

DDMI's share of Diavik diamonds is marketed and sold separately through its parent, Rio Tinto, whose diamond marketing and sales organization is well-established with 30 years of experience in the diamond industry and a loyal customer base. Dominion — and its earlier corporate incarnations including the iconic Harry Winston brand — has a strong reputation in the market and maintains a preferred position as a supplier of rough diamonds to cutters and polishers around the world. Dominion has a solid track record in marketing and selling its 40% share of Diavik diamonds.

For an individual stone, price is determined based on several criteria including colour, clarity, shape and size, based on a proprietary Price Book which is reviewed and updated up to several times per year following each sale.

For pricing on a project scale, however, deriving a single aggregate price for the kimberlite pipe (or separate prices for geological units within the pipe, if differences are significant) is required. This requirement necessitates collection of an initial bulk sample(s) large enough for statistical validity and extensive enough to ensure spatial representivity of the various geological units in the deposit. Like most diamond mines, Diavik produces a broad range of stone sizes and qualities that need to be sorted into technical categories to be evaluated. Hence a Price Book can be developed based on the goods evaluated, which can ultimately comprise several thousand categories. Thereafter, similar categories are then aggregated into packages for sale to diamond traders and polishers, after which the Price Book continues to be updated based on prices actually received. Each producer/seller will have its own active Price Book which is treated as proprietary.

Global demand for rough diamonds is driven by the price and demand for polished diamonds that are used in jewellery. Diamond prices fluctuate and are influenced by several factors including worldwide economic trends, diamond discoveries and total world production, and consumer appetite for discretionary/emotional spending on luxury goods such as jewellery.

To date, the Diavik Diamond Mine's (100% JV basis) contribution to global rough diamond markets since the 2003 start-up averages nearly 8 million carats per annum, from a low of 4 million carats in calendar year 2003 to a peak of 12 million carats in 2007. While these may seem like large quantities, Diavik diamonds are in demand and are sold as they are produced. The surpassing of Diavik's designed 1.5 Mtpa ore processing capacity to in excess of 2 Mtpa early in the mine life was driven by this strong consumer demand.

The demand for high-quality and politically "clean" Diavik diamonds has remained steady since the mine's 2003 entry into the international diamond markets, save for a brief worldwide collapse in late 2008 through 2009 during the global financial/credit crisis. The market recovery was cautious and, combined with marketing efforts, sales volumes and prices soon recovered.

In the current near-term, markets have been softer than hoped but persistent marketing efforts by sellers and cultivation of targeted consumer sectors — e.g. China, U.S., India, Japan — has continued to stimulate the rough diamond market.

The medium-term outlook will likely remain challenging due to uncertainties clouding the political, economic and social environments in the key markets.

The fundamentals for the worldwide diamond industry are sound and long-term forecasts are favourable based on suggestions that demand for rough diamonds will outstrip supply. This demand is seen to be driven largely by a shift in the consumer base as emerging economies on the Asian continent have risen next to traditional diamond consumers like the United States. Moreover, with few known major diamond mine developments on the horizon and with existing producers having finite mine lives, an increasingly constrained supply should cause diamond prices to increase over time.

Substitution by synthetic diamonds in the future can be viewed as a threat to the market for natural diamonds, but might also be viewed instead perhaps as an affordable alternative for an entirely different consumer segment.

19.2 Contracts

As manager and operator of the Diavik Diamond Mine for the Diavik Joint Venture, DDMI is a mining company organized to carry out the core activities of mining and processing to produce rough diamonds as the saleable product. Supporting functions within DDMI are similar to those in other mining companies and include maintenance, environmental, technical, safety, administration and corporate services. The operating scope of both DDMI and DDDL ends with the shipment of rough diamonds to their respective marketing organizations under the agreed arrangements.

Beyond the core business of mining, processing and delivery of saleable product in exchange for revenue, the operation of a remote work site makes necessary a number of ancillary functions that — while non-core and non-mining — are equally essential. These non-mining support functions are well-served by organizations specializing in the delivery of such services. The client mining company benefits from the service providers' expertise, capability, and

flexibility. The essential requirement for these services bestows upon the service providers a ‘tier 1’ or ‘permanent contractor’ (or at least long-term contractor) status.

A number of the mine’s specialty requirements have been awarded to northern businesses under long-term contracts. This has been helping to fulfil the socio-economic goals of the Diavik Diamond Mine to provide regional business opportunities and the goals of community and aboriginal stakeholders to participate in pursuing the opportunities to build skills and capacity. Some of the businesses existed before the mine’s start-up, others are joint ventures between established “southern” firms and northern groups, while still others are/were new entities (or northern subsidiaries of southern firms) created expressly for participating in the Diavik Diamond Mine.

Major “evergreen” contracts at the Diavik Diamond Mine include:

- G&G Expediting Ltd. — freight management and personnel movement to/from Diavik
- Det’on Cho Logistics — weekly jet aircraft flights to/from Edmonton
- Tli Cho Air — weekly fixed-wing aircraft services in the north
- Tli Cho Logistics Inc. — skilled site services and construction labour force
- Bouwa Whee Catering Ltd. — full catering, housekeeping and camp management
- Denesoline Western Explosives Inc. — explosives supply and on-site manufacture
- Kitikmeot Cementation Mining Development — underground mining services
- Ollerhead & Associates — surveying
- Fountain Tire — industrial tire supply and servicing
- Kingland Ford — light vehicle supply, fleet management and maintenance
- Exploration Medical Services — on-site medics and treatment facility

Contract terms are consistent with industry norms and employee remuneration is in line with that of DDMI direct employees. The contractors integrate seamlessly with DDMI personnel under the umbrella of a collaborative Diavik Diamond Mine workplace culture.

19.3 Comment

The QPs are of an opinion that the marketing arms of both DDDL and DDMI are capable and successful in marketing and selling each company’s respective share of rough diamonds from the Diavik Diamond Mine. Both marketing organizations appear to understand their product, their markets, their customers, and the factors influencing future outlooks.

In the absence of a common trading exchange and thus no forward market for rough diamonds, price forecasts for economic analyses in support of mineral resource and mineral reserve evaluation are by necessity an internal best estimate from marketing analysts.

Diavik is a remote work site where a number of non-mining functions are as important as the core mining activities for producing and delivering the rough diamonds to be sold. These non-core functions have been assimilated into the operation under contracts that are typical of and consistent with regional industry practices.

20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Permits

Relevant permits and authorizations issued by jurisdiction are:

- Water Licence W2007L2-0003 Wek'èezhii Land and Water Board
- Fisheries Authorization Fisheries and Oceans Canada
- Navigable Waters Permit Transportation Canada
- Explosive Permit Natural Resources Canada
- Land Use Wek'èezhii Land and Water Board
- Land Lease Northwest Territories Department of Lands

DDMI on behalf of the Diavik Diamond Mine is in full compliance with all existing permits, authorizations and licences.

The water licence for the Diavik Diamond Mine (Class “A” Water Licence W2007L2-0003) sets out several conditions with respect to DDMI’s right to alter, divert or otherwise use water for the purpose of mining. The water licence was issued in 2000, renewed in 2007 and in 2015, and requires renewal again in 2023. Efforts toward the recent 2015 renewal of the water licence were proactive and included new scientific studies, dialogue with regulators, and engagement in the communities — an approach taken with the first renewal of the water licence in 2007.

The Diavik Diamond Mine is subject to the Authorization for Works or Undertakings Affecting Fish Habitat File No SC98001 (“Fisheries Authorization”) issued by Fisheries and Oceans Canada (DFO 2000). The Fisheries Authorization outlines reporting requirements and approvals, compensation requirements for the Harmful Alteration, Disruption or Destruction (HADD) of fish habitat, and requirements for compensation plans.

Transport Canada conducted navigation reviews as part of the original environmental assessment. Specific permits are required for each of the three dikes. Transport Canada approvals are administrative in nature and can usually be obtained within 30 days with sufficient advanced notice submitted along with engineering drawings.

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 Diavik Diamond Mine’s closure and reclamation liabilities are covered by financial security provisions required under the water licence. This security amount is currently C\$150 million. A

small increase, estimated in the order of C\$5 million or less, will likely be required in the future to cover closure liabilities for the new A21 mine development.

20.2 Communities

The area around Lac de Gras is sparsely populated. Figure 29 shows the location of communities in the region. The closest community to the mine is Wekweeti, located 187 km west southwest of Lac de Gras.

Historically, three groups of indigenous peoples have used the Lac de Gras area: the Inuit, Métis, and Dene.

A cultural heritage assessment and archaeological surveys were completed and approved as part of the original mine development planning.

During the mine's original approval process, Diavik committed to the priority hiring of northern residents and aboriginal people born in the Northwest Territories or West Kitikmeot region of Nunavut, and their descendants. DDMI has an effective communities program that has been in place for the past decade and a half and will continue through post-closure.

DDMI entered into three types of community agreements as part of the mine development:

- Participation Agreements with five aboriginal organizations that describe DDMI and community activities during the development and operation of the mine.
- Socio-Economic Monitoring Agreement with the Government of the Northwest Territories and five aboriginal organizations. The Agreement outlines DDMI's commitments to local employment, economic benefits, cultural and community well-being and the monitoring of these requirements by a Board of community, government and DDMI representatives.
- Environmental Agreement with five aboriginal groups, and the governments of the Northwest Territories and Canada (Aboriginal Affairs and Northern Development Canada). The agreement provides funding for independent environmental oversight of DDMI and government regulators.

The Participation Agreements are between DDMI and the five neighbouring aboriginal groups that assert ties to the Lac de Gras region:

- the Tli Cho Government;
- the Yellowknives Dene First Nation;
- the Lutsel K'e Dene First Nation;
- the Kitikmeot Inuit Association;
- the North Slave Métis Alliance.



Figure 29 Human activities in the Lac de Gras area

Dene communities of the Tli Cho government:

- **Behchoko** — This is the largest Tli Cho community in the territory with a population of 2,026 people (NWT Bureau of Statistics, 2010). Approximately 7% of the population is non-aboriginal. Commerce in the community revolves around local enterprise which includes everything from small retail stores to multi-million-dollar mining service companies. Diavik has helped to create businesses and continues to support and utilise Tli Cho businesses. Traditional subsistence living is also a major source of income for

families in Behchoko. The Ekati, Diavik and Snap Lake diamond mines employ many residents, mainly on two-week-in/two-week-out rotations.

- **Whati** — This second-largest Tli Cho community had a 2010 population of 497, the majority of whom are aboriginal. A traditional lifestyle and economy are maintained in Whati based almost solely on trapping, fishing and hunting. Employment is primarily with the governments of the first nation, the territory, and the hamlet. 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.
- **Gameti** — Gameti had a 2010 population of 295 people. Approximately 7% of the population is non-aboriginal. Gameti was a seasonal hunting camp used by Tli Cho 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 Gameti residents and operates a motel, gas station, and a fishing camp.
- **Wekweeti** — Some 140 people were living here according to 2009 statistics. Wekweeti'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 Behchoko. Tourism is strong with fishing and hiking outfitting services offered in the area. Wekweeti is the closest community to the Diavik Diamond Mine and mining employs several residents.

The Yellowknives Dene First Nation (YKDFN):

- **Dettah** — Dettah is a small aboriginal community of 257 people (2009 NWT Statistics). 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 Yellowknives 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.
- **N'dilo** — N'dilo is an aboriginal community of 257 people (2009 NWT Statistics) 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

Lutsel K'e Dene Band:

- **Lutsel K'e** — This Dene community has approximately 312 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. 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 Lutsel K'e, manages the for-profit businesses owned

by the Lutsel K'e membership and provides management services to the Limited Partnerships in which Denesoline Corporation has an interest.

Kitikmeot Inuit Association (KIA):

- **Kugluktuk** — Located at the mouth of the Coppermine River in the Kitikmeot region of Nunavut, Kugluktuk is the westernmost community in Nunavut, almost on the border with the Northwest Territories. Copper Inuit (or Kitlinermiut) is a Northern Canadian Inuit group who live north of the tree line. Formerly known by the English name “Coppermine”, the population of Kugluktuk is approximately 1,300. The community is only accessible by air or water transport. The Kitikmeot Inuit Association ensures controlled development of resources and land in the Kitikmeot region while protecting areas for traditional uses such as hunting, trapping and fishing. There is significant potential for development and economic growth in the Kitikmeot through mining and land development; however there is strong commitment to balancing development with Inuit interests and the preservation of traditional ways. The Kitikmeot Corporation is the 100% Inuit-owned business development arm of the Kitikmeot Inuit Association, and works on behalf of the Inuit of the Kitikmeot region to develop business opportunities that will build an economic base in the Kitikmeot region.
- **Iqaluktuuttiaq (Cambridge Bay)** — This is the regional centre for the Kitikmeot region and is located on the southeast coast of Victoria Island. Iqaluktuuttiaq (Cambridge Bay) has a population of 1,400 people, the majority of whom are Inuit. Iqaluktuuttiaq is also governed by the Kitikmeot Inuit Association and is associated with the Kitikmeot Corporation (refer to above for Kugluktuk).

North Slave Métis Alliance (NSMA):

- Métis are a culturally distinct group of indigenous people that emerged from the relations of aboriginal women and European men. 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.

Early in the mine development, Diavik 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 Diavik Diamond Mine included a requirement for the aforementioned Socio-Economic Monitoring Agreement (SEMA).

Diavik recognizes its significant role in creating new and long-term business opportunities that can increase northern business capacity. Diavik undertook that throughout the initial mine construction, at least 38% of total capital expenditures would be on northern businesses. Of the C\$1.2 billion in construction contracts awarded during the 2000–2002 construction period, the value of northern contracts was just over C\$874 million or 74%. This was almost double the 38% objective in the socio-economic monitoring agreement. Northern aboriginal spending during construction was C\$604 million, or 51%. When 2000 through 2015 spending is combined, Diavik has spent a total of C\$6.8 billion, of which C\$4.9 billion (72%) is with northern business. Of the C\$4.9 billion, C\$2.5 billion is with aboriginal business.

For a third year in a row, Diavik was selected as a CANADA'S TOP 100 EMPLOYER[®] for 2014. The CANADA'S TOP 100 EMPLOYERS competition was the largest editorial project of its kind in Canada, with thousands of employers taking part each year. Diavik was the only Northwest Territories workplace recognized as a CANADA'S TOP 100 EMPLOYER for 2014. Each employer was graded by Mediacorp Canada Inc. editors on eight key areas, including:

- physical workplace
- work atmosphere and social
- health, financial, and family benefits
- vacation and time off
- employee communications
- performance management
- training and skills development
- community involvement.

20.3 Land Use and Mineral Tenure

The Diavik Diamond Mine operates under the terms and conditions of a set of five Land Leases covering the mine footprint area on East Island. Land Leases provides access and use of the land and water for the purpose of mining.

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 and underground
- acid generation potential of waste rock
- sewage water
- treatment of effluent water and removal suspended solids
- ammonia, phosphorus and suspended solids in effluent water discharged to Lac de Gras

- effluent water monitoring to determine potential toxicity to fish
- mine closure planning, reclamation research and site rehabilitation activities

Diavik's water quality monitoring activity includes surveillance of water in and around the mine site, and an aquatic effects monitoring program that measures changes in the Lac de Gras aquatic environment. Results from water quality monitoring programs are reviewed to identify the need for any follow-up action.

Diavik monitors 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 to help 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 behavioural surveys of caribou are undertaken at varying distances from the mine. Each year, local community members come to the mine to conduct the monitoring in conjunction with DDMI's environment staff.

Every three years, mine environment staff undertake studies to measure dust deposition on lichen, both on and off site. Lichen is very important as a food source for caribou throughout the year. In a recent initiative (2013), DDMI partnered with a newly formed aboriginal-led research body (the Tli Cho Research Institute) to incorporate both scientific methods and traditional knowledge into the work.

The complete range of environmental monitoring and study programs includes:

- dust monitoring
 - suppression of dust generated by the mine operation
 - dust sampling and dispersion behaviour by season
 - use of suppressants
 - air quality monitoring
- meteorology
 - measurement of wind speed and direction, temperature, humidity, precipitation, evaporation, solar radiation
- water quality
 - sample collection and analysis
 - water levels in ponds and dams
 - makeup water usage
 - site water balance
- aquatic effects
 - sampling and analysis for water quality, phytoplankton, zooplankton, benthic invertebrates, sediment chemistry, fish health
 - short- and long-term effects
- wildlife
 - caribou, raptor and waterfowl, wolverine, grizzly bear, other wildlife
 - accuracy of predictions, effectiveness of mitigation strategies

- fisheries
 - licence requirements
 - studies to determine metal concentrations in fish tissue
- reclamation research
 - re-vegetation test plots
 - country rock test piles

Government inspections provide assurances that Diavik remains in compliance with the legal provisions of permits and licences related to land and water use and waste management. To date there have been no breaches or non-compliances in environmental related regulations.

20.5 Mine Closure Planning

The Diavik 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, restoring the land, breaching the dikes and returning the lake water to original shoreline.

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 Diavik Diamond Mine from a recognized independent industry expert in 2014. The next comprehensive regulatory review of the security amount is scheduled for 2017.

The government's independent estimate of total mine closure cost for Diavik and the financial security amount levied on the mine for the liability provides substantially for the actual mine closure plans in place.

DDMI has had a mine closure plan for Diavik since project inception. The overall approach to reclamation and closure planning for Diavik 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 Diavik's Type A water licence and land leases, a report is prepared annually to report to stakeholders on progress, research results, and ongoing changes to the interim closure plan.

The mine closure cost, being driven by the mine closure plan which is updated periodically, is likewise updated periodically and dialogues with the government are held regularly to ensure that the liability coverage remains appropriate. To date, estimates of the Diavik mine closure cost have all been well over C\$100 million.

Up-to-date mine closure provisions are included in the Diavik business plans for both DDMI and DDDL, based on the prevailing closure plans — which to date have been higher in cost than the government's estimates — and in accordance with generally accepted accounting practices. Moreover, Diavik's commitment to mine closure extends beyond just reclamation and clean-up to include additional costs for social obligations as well, such as employee exit costs (which government regulators do not require).

20.6 Comment

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

21. CAPITAL AND OPERATING COSTS

21.1 Mine Development Capital Costs

Initial capital to build the Diavik Diamond Mine was spent between late 1999 and early 2003. Construction was completed under budget and ahead of schedule.

Once in operation, further mine development capital expenditure included:

- 2004–2006 A418 A418 dike for the A418 open pit
- 2004–2006 A154S, A154N, A418 Underground exploratory decline
- 2005–2007 A21 Exploratory decline and bulk sample mining
- 2006–2007 A21 Site investigation, dike design and mining studies
- 2006–2007 A154S, A154N, A418 Underground test mining and bulk sampling
- 2007–2010 A154S, A154N, A418 Construction and development of the present U/G mine
- 2011–2012 Mine-wide Four-turbine wind power electrical generation farm.

All of these projects were completed within budget and — except for the 2007–2010 underground mine development — on time. The 2007–2010 underground mine development was rescheduled for 2009 during a global financial crisis that paralyzed capital spending across industries, revising the start of Diavik’s underground production by roughly a year later than planned.

Diavik mine development continues with the 2014 decision to proceed with the A21 dike and open pit. Dike construction is phased over three seasons, 2015 to 2017, followed by open pit pre-production overburden stripping in 2018 and first deliveries of A21 kimberlite to the processing plant later that year. Including a 15% contingency and allowance for escalation in real terms over the four-year construction period, the project was estimated in 2014 to cost C\$385.6 million (of which C\$0.8 million was to be sunk during 2014). Although A21 is the smallest of the four Diavik kimberlite pipes, the dike will be in waters deeper than for the other dikes; the cost to build the dike takes up most (more than 80%) of the total A21 capital cost. The A21 dike and open pit will be Diavik’s third, and is being built in-house largely with local workers.

Table 21 summarizes the profile of capital expenditure from 2017 onward and includes the remainder of the A21 mine development capital.

21.2 Sustaining Capital Costs

Since production began at Diavik, capital expenditures have been made annually to sustain the operation and fund mine developments required for continued production. Sustaining capital expenditures include:

- ongoing underground developments of a permanent and mine-wide nature
- planned replacements of and additions to the mine equipment fleet
- replacements of light vehicles

- purchases of critical spares
- general improvements across the operations.

The Diavik capital plan is a five-year detailed plan that is budgeted annually with quarterly reviews and updates. Capital cost estimates approved for inclusion in the five-year business plan are required to be based on firm quotes and/or first principles to support feasibility levels of accuracy and must also include the associated indirect costs, owner’s costs, contingencies, freight and any commissioning costs. Moreover, each capital expenditure or project is required to demonstrate a valid business case or else have some other compelling justification. A well-established internal due diligence process is in place and in use.

For longer-term business planning, the five-year capital plan is projected ahead with consideration for the rate of mining, camp population and overall scale of activity on site. As such, capital cost assumptions beyond the immediate five-year plan can include conceptual estimates and placeholder allowances especially toward outer years.

The capital cost assumptions for this report reflect prevailing estimates in the current business model for the Diavik Diamond Mine. Table 21 summarizes the mine development and sustaining capital expenditures thus forecasted, in current Canadian dollars and real terms.

Table 21 Estimated capital costs, C\$ millions (100% JV basis)

| Calendar Year | Development C\$ millions | Sustaining C\$ millions | TOTAL C\$ millions |
|---------------|--------------------------|-------------------------|--------------------|
| 2017 | 95.3 | 46.5 | 141.8 |
| 2018 | 64.1 | 42.1 | 106.3 |
| 2019 | 13.5 | 49.3 | 62.8 |
| 2020 | ---- | 35.8 | 35.8 |
| 2021 | ---- | 32.5 | 32.5 |
| 2022 | ---- | 5.9 | 5.9 |
| 2023 | ---- | 2.1 | 2.1 |
| 2024 | ---- | 2.1 | 2.1 |
| 2025 | ---- | ---- | ---- |
| TOTALS | 172.9 | 216.4 | 389.3 |

21.3 Operating Costs

Operating costs represent the normal and recurring costs of production, including:

- mining — underground including backfill where used
- mining — open pit (for the upcoming A21 open pit)
- ore processing
- site support — camp, logistics, power generation and distribution, water treatment, technical services, materials management

- corporate functions — finance, human resource management, training, environment, communities, executive
- private royalties
- marketing costs — assumption only; DDDL and DDMI each have separate marketing arrangements for their respective share of diamonds
- mine closure

Five-year forecasts of operating costs are based on regularly updated (quarterly) first-principles calculations provided by or through each of the function heads of the Diavik Diamond mine, based on an agreed and management-approved updated mine plan. Approval of each area's five-year operating budgets includes a process of internal scrutiny and challenge by peers and senior management.

Business planning beyond five years is not undertaken by operations personnel but is done at a business-wide level by strategic planners and financial analysts. As such, life-of-mine operating cost assumptions beyond year 5 are modeled values based on the detailed five-year operating budgets and corresponding mine plan.

Most areas of the operation have fixed as well as variable costs. While the variable portion of operating costs may vary linearly with cost drivers, fixed costs would not. Therefore, at an overall level, different categories of operating costs for the Diavik Diamond Mine vary with cost drivers in different ways and not always linearly.

For the mineral reserves in this report and the schedule of mining and processing envisioned for them, Table 22 depicts modeled estimates of the associated operating costs by year in Canadian dollars and in real terms. Note that because the production schedule for the mineral reserves in this report is not the current five-year plan (but mimics it), the operating costs for the first five years are only a modeled replica of the current business plan.

Table 22 Modeled operating costs, C\$ millions (100% JV basis)

| Calendar Year | Underground Mining | Open Pit Mining | Ore Processing | Site Support & Corporate | Private Royalties | Marketing Costs | TOTAL OPERATING |
|---------------|--------------------|-----------------|----------------|--------------------------|-------------------|-----------------|-----------------|
| 2017 | 167.9 | ---- | 31.3 | 134.4 | 23.9 | 15.7 | 373.2 |
| 2018 | 167.8 | 11.7 | 32.8 | 136.0 | 24.9 | 15.7 | 388.8 |
| 2019 | 163.8 | 52.6 | 32.8 | 136.0 | 24.9 | 15.7 | 425.7 |
| 2020 | 153.0 | 51.9 | 32.8 | 136.0 | 24.9 | 15.7 | 414.3 |
| 2021 | 142.5 | 40.4 | 32.8 | 136.0 | 24.0 | 15.7 | 391.4 |
| 2022 | 129.6 | 32.3 | 32.8 | 136.0 | 24.0 | 15.7 | 370.4 |
| 2023 | 135.2 | 19.5 | 20.5 | 121.0 | 15.9 | 15.7 | 327.9 |
| 2024 | 136.9 | ---- | 19.5 | 119.4 | 15.3 | 15.7 | 306.8 |
| 2025 | 44.6 | ---- | 5.8 | 86.7 | 1.5 | 7.8 | 146.4 |
| Totals | 1,241.5 | 208.4 | 241.1 | 1,141.2 | 179.2 | 133.4 | 3,144.8 |

Mine closure costs not shown; they are incurred largely toward the end of production and extend for many years afterward.

21.4 Continuous Business Planning

The mine plan, production scheduling and costs are prepared by DDMI as manager and operator of the Diavik Diamond Mine. “Continuous planning” is practiced.

DDMI operates on a calendar year basis, i.e. January to December. Mine plan production and costs are updated in detail for the coming year every third quarter (July to September). This also provides opportunity to reforecast the remainder of the current business year (for DDMI), both to provide the most current launch point for the coming year’s mine plan and as an update in its own right for the current year. Although this means that the plan for a given year is made initially nearly half a year ahead of time, the lead time accommodates the levels of review and approval beyond DDMI — product division (within Rio Tinto), Dominion Diamond, and the Rio Tinto Group.

The annual plan is a five-year plan (five and a half years including the reforecast of the remainder of the current year in progress). Planning is detailed by month with years 4 and 5 by year.

During the first quarter of the new calendar year, nominally February, the mine plan and costs are reforecast. This incorporates the year-end updates to the mineral reserves (and resources, included in internal upside mine plans) as well as changes in mine plan, updated face positions and cost inputs/assumptions. Compliance with the approved plan for the year is assured where there are consistencies while any material changes or emerging issues are noted.

The process is typically repeated during the second quarter of the year, nominally May.

The third-quarter reforecast beginning in July starts the annual planning cycle over again, culminating in a new five-year plan and multiple levels of approval ahead of the next calendar year.

This well-entrenched planning regimen provides a disciplined process for capturing changes to the plan — whether due to deviation or to new ideas — which typically occur incrementally over time but can cause “surprises” if overlooked. Beyond simply preventing foreseeable problems and reducing the impact of “surprises”, continuous planning promotes continuous improvement.

21.5 Comment

The QPs believe that the capital and operating cost assumptions have a sound basis and reasonably represent the costs to continue developing and producing from the stated mineral reserves (and mineral resources, in internal upside scenarios).

The capital investment to build the A21 dike and pre-strip the A21 open pit is based on completed engineering, permitting in hand, a final feasibility study and detailed construction plan. The proposal passed technical review and exhaustive financial evaluation for bankability. Construction to date is on track for A21 production start-up as expected. Strong capability exists for executing the project as A21 is Diavik’s third dike and open pit.

Sustaining capital cost assumptions are consistent with the current capital plan for the operation prepared by site operating management.

Annual and quarterly five-year forecasts of operating costs at the Diavik Diamond Mine are prepared by area functional leaders, compared against previous estimations, challenged by peers and approved by senior management. Long-term projections of operating costs are carried out by experienced analysts. For the mineral reserves in this report and the mining schedule prepared for their analysis, the modeled operating costs for the remaining life of the mine are based on and calibrated to the five-year plan costs.

A determination of viability using the costs as described here would have plausibility.

22. ECONOMIC ANALYSIS

The economic analysis of the mineral reserves in this report represents a forward-looking view that is subject to known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those portrayed here.

Forward-looking views in this report include but are not limited to:

- future diamond valuations;
- estimations of mineral resources and mineral reserves
- what portions of the geologic model are considered to qualify as reserves;
- mineability and recovery of the mineral reserve;
- production sequencing, schedule and volumes;
- processing plant throughput and diamond recovery;
- the assumption that all production is sold;
- costs of production;
- costs of support and overhead;
- sustaining capital expenditures;
- final costs and timing of the A21 dike and open pit currently being developed;
- expectation that environmental risks continue to be managed well;
- an assumption that all permits remain in good standing;
- no anticipation of catastrophic accidents, labour disputes and other risks of the industry;
- continuation of the social licence to operate;
- retention of property title with no disputes or claims.
- U.S./Canadian dollar foreign exchange rates.

Without limiting the generality of the above risk statements, some specific risks can come from changes in parameters as mine and process plans continue to be refined. These include possible variations in mineral reserve estimates, grade or recovery rates; geotechnical considerations during mining and geotechnical and hydrogeological considerations during A21 dike construction and operation, including impacts of mud rushes underground, pit wall failures, or dike integrity; failure of plant, equipment or processes to operate as anticipated; modifications to existing practices so as to comply with any future permit conditions that may be imposed by regulators; risk that diamond price assumptions may prove to be incorrect; and delays in obtaining regulatory approval renewals.

22.1 Cut-Off Grade Analysis

Mining a diamondiferous kimberlite pipe that is clearly and distinctly different from the surrounding non-mineralized granitic host rock is unlike mining base and precious metals. The kimberlite pipe is not a mixture of mineralized and non-mineralized rock, and the surrounding granitic country rock will contain no diamonds whatsoever. Therefore, cut-off grade economics does not turn ore into waste nor waste into ore. In mining the Diavik kimberlites, all of the kimberlite qualifying as reserves is mined without selectivity.

If a cut-off grade analysis were to be used for the Diavik kimberlites, the calculations would be based on the following equilibrium equation.

| | | |
|------------------------|---|-----------------------------|
| Revenue | = | Cost |
| Tonnes x Grade x Price | = | Cost |
| Grade x Price | = | Cost / Tonne |
| Grade | = | [Cost / Tonne] / Price |
| [Carats / Tonne] | = | [\$ / Tonne] / [\$ / Carat] |

Each individual kimberlite — A154S, A154N, A418, A21 — fetches a different average price per carat so each pipe would have a different calculated cut-off grade. Different mining methods used in each pipe, e.g. blast-hole stoping with backfill versus sub-level retreat with no backfill, different locations/depths, plus different rates of mining and depth change, all give rise to different costs and therefore different cut-off grades for regions within the same pipe depending on mining method and location. Further impairing the cut-off grade calculation is that a significant portion of costs at Diavik are fixed and common. This means that the cost-per-tonne assumption relies on unitising fixed costs which become incorrect in any other period when the tonnage is different. It also means distributing common costs based on some form of “logic” that only appears logical but is simply not true. Cut-off grade is influenced strongly by the prices and costs assumed. Given the speculation surrounding forward-looking prices along with the gross simplifications involved in distilling the full costs, cut-off grades must be used with caution and viewed as merely rough indicators of economic viability. Greater emphasis is placed on cash flow analysis on a full mine plan basis.

Due to the geometry of kimberlite pipes and the mineralization being confined to within the pipes — and the particular robustness of the mineral reserve economics — the Diavik Diamond Mine does not have tables and graphs showing how mineral reserve tonnes vary as a function of unit costs, prices or calculated cut-off-grades. Cut-off grade analysis would merely indicate whether grades in the pipe exceed a cut-off grade (with any that fall short being more likely to trigger further study than removal from reserves).

Notwithstanding the fundamental limitations of cut-off grade methodology in Diavik’s case, cut-off grade analysis is nevertheless carried out regularly as a secondary and alternative check that the grades in each of the pipes support a viable mine. The exercise is also used as a rough check to confirm the areas having strong economics and identify marginal areas requiring more detailed examination.

22.2 Discounted Cash Flow Analysis

An economic analysis is provided here, using the mineral reserves in a discounted cash flow model based on annual production for the remaining life of the mine. Viability is considered to be demonstrated by the resulting cash flows being positive in each year, except perhaps in

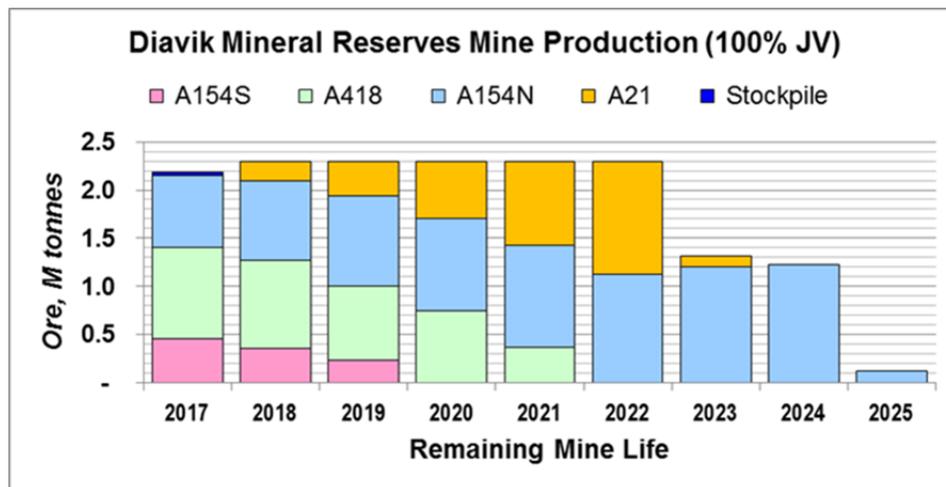
certain periods where major capital expenditures are made that contribute to an increase in the overall net present value.

The analysis is based on calendar years from the present year to depletion of the mineral reserve. Only the mineral reserve is included in this report. Neither rough diamond stocks in inventory nor work in progress at the start of the first year are considered.

The assumed mine output and plant throughput rates are considered to be within the capabilities of the operation based on historical performance and the intentions reflected in forward-looking mine planning efforts at the Diavik Diamond Mine. Metallurgical recoveries assumed are as per current reported recoveries of 100% above a 1.0 mm screen slot size.

The production profile is as shown earlier in Table 18 and in Figure 21, both reproduced here for reference. Note that the analysis presented here is for the mineral reserve only and does not include any of the remaining mineral resources that are not mineral reserves.

| | | | | Totals | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---------------------------|--------------------|----------|----------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A154S | Sub-Level Retreat | Waste | M tonnes | 0.221 | 0.071 | 0.094 | 0.056 | - | - | - | - | - | - |
| | | Ore | M tonnes | 1.051 | 0.460 | 0.360 | 0.230 | - | - | - | - | - | - |
| | | Grade | cpt | 3.57 | 3.49 | 3.60 | 3.69 | - | - | - | - | - | - |
| | | Carats | M carats | 3.752 | 1.604 | 1.297 | 0.851 | - | - | - | - | - | - |
| A418 | Sub-Level Retreat | Waste | M tonnes | 0.391 | 0.131 | 0.067 | 0.115 | 0.057 | 0.020 | - | - | - | - |
| | | Ore | M tonnes | 3.735 | 0.942 | 0.910 | 0.770 | 0.750 | 0.363 | - | - | - | - |
| | | Grade | cpt | 3.60 | 4.44 | 3.89 | 3.50 | 2.89 | 2.34 | - | - | - | - |
| | | Carats | M carats | 13.432 | 4.183 | 3.539 | 2.692 | 2.170 | 0.848 | - | - | - | - |
| A154N | Blast Hole Stoping | Waste | M tonnes | 0.376 | 0.067 | 0.055 | 0.023 | 0.068 | 0.111 | 0.027 | 0.010 | 0.014 | 0.001 |
| | | Ore | M tonnes | 8.200 | 0.751 | 0.825 | 0.935 | 0.950 | 1.062 | 1.130 | 1.201 | 1.225 | 0.120 |
| | | Grade | cpt | 2.35 | 2.31 | 2.43 | 2.39 | 2.30 | 2.32 | 2.34 | 2.39 | 2.33 | 2.25 |
| | | Carats | M carats | 19.260 | 1.735 | 2.006 | 2.238 | 2.181 | 2.465 | 2.639 | 2.874 | 2.850 | 0.271 |
| TOTAL UNDERGROUND | Waste | M tonnes | 0.988 | 0.270 | 0.216 | 0.195 | 0.125 | 0.131 | 0.027 | 0.010 | 0.014 | 0.001 | |
| | Ore | M tonnes | 12.985 | 2.153 | 2.095 | 1.935 | 1.700 | 1.425 | 1.130 | 1.201 | 1.225 | 0.120 | |
| | Grade | cpt | 2.81 | 3.49 | 3.27 | 2.99 | 2.56 | 2.33 | 2.34 | 2.39 | 2.33 | 2.25 | |
| | Carats | M carats | 36.444 | 7.522 | 6.842 | 5.781 | 4.351 | 3.313 | 2.639 | 2.874 | 2.850 | 0.271 | |
| A21 | Open Pit | Waste | M tonnes | 25.217 | - | 1.295 | 8.635 | 7.400 | 4.375 | 2.330 | 1.182 | - | - |
| | | Ore | M tonnes | 3.324 | - | 0.205 | 0.365 | 0.600 | 0.875 | 1.170 | 0.109 | - | - |
| | | Grade | cpt | 2.84 | - | 2.89 | 3.19 | 3.84 | 2.82 | 2.31 | 1.93 | - | - |
| | | Carats | M carats | 9.443 | - | 0.593 | 1.165 | 2.303 | 2.469 | 2.703 | 0.210 | - | - |
| Stockpiles | Ore | M tonnes | 0.027 | 0.027 | - | - | - | - | - | - | - | - | |
| | Grade | cpt | 2.85 | 2.85 | - | - | - | - | - | - | - | - | |
| | Carats | M carats | 0.076 | 0.076 | - | - | - | - | - | - | - | - | |
| TOTAL ORE TO PLANT | Ore | M tonnes | 16.335 | 2.180 | 2.300 | 2.300 | 2.300 | 2.300 | 2.300 | 1.310 | 1.225 | 0.120 | |
| | Grade | cpt | 2.81 | 3.49 | 3.23 | 3.02 | 2.89 | 2.51 | 2.32 | 2.35 | 2.33 | 2.25 | |
| | Carats | M carats | 45.963 | 7.598 | 7.434 | 6.947 | 6.654 | 5.783 | 5.342 | 3.084 | 2.850 | 0.271 | |



Capital investment in further mine development and sustaining capital expenditures are as discussed in sections 21.1 and 21.2, and shown in Table 21.

Operating costs are as explained in section 21.3 and summarized in Table 22. Mine closure costs were not included in that table but are incorporated into the cash flow analysis. The cost of closing the mine includes the physical aspects of clean-up and reclamation as well as workforce and social obligations and a reasonable period of post-closure monitoring.

The operating costs include private royalties payable to third parties, calculated as percentages of gross revenues. Government royalties on the value of mine output are also payable based on a sliding scale of rates, as described in section 4.6. For this exercise, the government royalty is approximated as part of the overall taxation amounts assumed.

The taxation treatment in this analysis is applied to the Diavik Diamond Mine as a stand-alone whole entity, and on a simplified basis. In fact, DDDL and DDMI are separate joint venture entities each responsible for their own taxes. Nevertheless in this analysis of the mine as a single entity that is in production, a simplifying assumption is made that territorial royalty tax is 13% of pre-tax free cash flow while corporate income tax is 26.5% of the free cash flow post-territorial royalty tax. None of the foregoing is intended to reflect the tax position of either DDDL, Dominion Diamond Corporation, or DDMI.

Prices for this analysis are based on recent sales history, with an assumption for the future A21.

- A154S US\$126 /carat modeled average price for year 2016
- A418 US\$ 90 /carat modeled average price for year 2016
- A154N US\$166 /carat modeled average price for year 2016
- A21 US\$126 /carat assumed average price for year 2016

Projection over the remaining life of the mine assumes a year-over-year real growth of 2.5% applied equally to all four pipes beginning with calendar year 2017.

Exchange rates between Canadian and U.S. currencies are assumed to be C\$/US\$ = 1.33 (or US\$/C\$ = 0.7519).

These prices and outlook do not necessarily reflect the prices and exchange rates that will actually be realised by either of the joint venture participants.

Inflation is not considered in this economic analysis as it is a discounted cash flow model and all amounts are in present dollars and real terms.

A discounted cash flow analysis summary reflecting all of the foregoing is shown in Table 23. In this model, future cash flows are discounted to reflect present-day dollars with the discounting applied neither to the beginning nor the end of a year but to mid-years.

The discounted cash flow analysis indicates positive economics for the mineral reserves over the remaining productive life of the mine, ending in 2025. Assuming mid-year discounting using a 7% discount rate, the net present value is C\$2.6 billion.

The mine is a well-established operation in production with cash flows that are immediately positive and sufficiently robust such that the forecasted capital investments are self-funded. Hence, payback and rate of return are not relevant at this stage of the project.

Note: The cash flow model shown in Table 23 is presented solely to indicate the economic viability of the mineral reserves in this report. It is not a forecast of either the Diavik Joint Venture's or DDDL P's share of cash flow from the Diavik Diamond Mine.

Table 23 Cash flow model for the Diavik Diamond Mine (100% JV basis)

| | TOTALS | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
|----------------------------|--------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| PRODUCTION | | | | | | | | | | | | | | | | | | | | |
| Underground Mining | | | | | | | | | | | | | | | | | | | | |
| Waste | Total U/G | M t | 0.988 | 0.270 | 0.216 | 0.195 | 0.125 | 0.131 | 0.027 | 0.010 | 0.014 | 0.001 | - | - | - | - | - | - | - | - |
| Ore | A154S Pipe | M t | 1.051 | 0.460 | 0.360 | 0.230 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | A418 Pipe | M t | 3.735 | 0.942 | 0.910 | 0.770 | 0.750 | 0.363 | - | - | - | - | - | - | - | - | - | - | - | - |
| | A154N Pipe | M t | 8.200 | 0.751 | 0.825 | 0.935 | 0.950 | 1.062 | 1.130 | 1.201 | 1.225 | 0.120 | - | - | - | - | - | - | - | - |
| Total Ore | M t | 12.985 | 2.153 | 2.095 | 1.935 | 1.700 | 1.425 | 1.130 | 1.201 | 1.225 | 0.120 | - | - | - | - | - | - | - | - | - |
| Grade | cpt | 2.81 | 3.49 | 3.27 | 2.99 | 2.56 | 2.33 | 2.34 | 2.39 | 2.33 | 2.25 | - | - | - | - | - | - | - | - | - |
| Carats | M ct | 36.444 | 7.522 | 6.842 | 5.781 | 4.351 | 3.313 | 2.639 | 2.874 | 2.850 | 0.271 | - | - | - | - | - | - | - | - | - |
| Open Pit Mining | | | | | | | | | | | | | | | | | | | | |
| Waste | A21 Pit | M t | 25.217 | - | 1.295 | 8.635 | 7.400 | 4.375 | 2.330 | 1.182 | - | - | - | - | - | - | - | - | - | - |
| Ore | A21 Pipe | M t | 3.324 | - | 0.205 | 0.365 | 0.600 | 0.875 | 1.170 | 0.109 | - | - | - | - | - | - | - | - | - | - |
| | Grade | cpt | 2.84 | - | 2.89 | 3.19 | 3.84 | 2.82 | 2.31 | 1.93 | - | - | - | - | - | - | - | - | - | - |
| | Carats | M ct | 9.443 | - | 0.593 | 1.165 | 2.303 | 2.469 | 2.703 | 0.210 | - | - | - | - | - | - | - | - | - | - |
| Stockpiles | | | | | | | | | | | | | | | | | | | | |
| Mined, to be processed | M t | 0.027 | 0.027 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Grade | cpt | 2.85 | 2.85 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Carats | M ct | 0.076 | 0.076 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Processing | | | | | | | | | | | | | | | | | | | | |
| Total Processed | M t | 16.335 | 2.180 | 2.300 | 2.300 | 2.300 | 2.300 | 1.310 | 1.225 | 0.120 | - | - | - | - | - | - | - | - | - | - |
| Average Grade | cpt | 2.81 | 3.49 | 3.23 | 3.02 | 2.89 | 2.51 | 2.32 | 2.35 | 2.33 | 2.25 | - | - | - | - | - | - | - | - | - |
| Carats Recovered | M ct | 45.963 | 7.598 | 7.434 | 6.947 | 6.654 | 5.783 | 5.342 | 3.084 | 2.850 | 0.271 | - | - | - | - | - | - | - | - | - |
| REVENUE | | | | | | | | | | | | | | | | | | | | |
| Average Aggregate Price | US\$/kt | 146.59 | 118.13 | 125.72 | 134.54 | 140.59 | 155.88 | 169.04 | 194.08 | 202.25 | 207.31 | - | - | - | - | - | - | - | - | - |
| Exchange Rate | C\$/US\$ | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 | - | - | - | - | - | - | - | - | - |
| Revenue | C\$ M | 8,961.4 | 1,193.7 | 1,243.1 | 1,243.1 | 1,244.2 | 1,198.9 | 1,201.0 | 796.2 | 766.6 | 74.8 | - | - | - | - | - | - | - | - | - |
| COSTS | | | | | | | | | | | | | | | | | | | | |
| Operating Expenses | | | | | | | | | | | | | | | | | | | | |
| UG Mining | C\$ M | (1,241.5) | (167.9) | (167.8) | (163.8) | (153.0) | (142.5) | (129.6) | (135.2) | (136.9) | (44.6) | - | - | - | - | - | - | - | - | - |
| Open Pit Mining | C\$ M | (208.4) | - | (11.7) | (52.6) | (51.9) | (40.4) | (32.3) | (19.5) | - | - | - | - | - | - | - | - | - | - | - |
| Processing | C\$ M | (241.1) | (31.3) | (32.8) | (32.8) | (32.8) | (32.8) | (20.5) | (19.5) | (5.8) | - | - | - | - | - | - | - | - | - | - |
| Site and Corporate | C\$ M | (1,141.2) | (134.4) | (136.0) | (136.0) | (136.0) | (136.0) | (136.0) | (121.0) | (119.4) | (86.7) | - | - | - | - | - | - | - | - | - |
| Private Royalties | C\$ M (1) | (179.2) | (23.9) | (24.9) | (24.9) | (24.9) | (24.0) | (24.0) | (15.9) | (15.3) | (1.5) | - | - | - | - | - | - | - | - | - |
| Marketing | C\$ M (2) | (133.4) | (15.7) | (15.7) | (15.7) | (15.7) | (15.7) | (15.7) | (15.7) | (15.7) | (7.8) | - | - | - | - | - | - | - | - | - |
| Mine Closure | C\$ M | (186.6) | - | - | - | (1.3) | (6.1) | (8.9) | (13.7) | (30.9) | (30.2) | (34.1) | (28.4) | (7.1) | (4.2) | (4.1) | (4.1) | (4.6) | (6.4) | (2.6) |
| | C\$ M | (3,331.4) | (373.2) | (388.8) | (425.7) | (415.6) | (397.4) | (379.3) | (341.6) | (337.7) | (176.5) | (34.1) | (28.4) | (7.1) | (4.2) | (4.1) | (4.1) | (4.6) | (6.4) | (2.6) |
| Taxation | | | | | | | | | | | | | | | | | | | | |
| Territorial Mining Royalty | C\$ M (3) | (706.9) | (88.2) | (97.2) | (98.1) | (103.1) | (100.0) | (106.1) | (58.8) | (55.5) | - | - | - | - | - | - | - | - | - | - |
| Corporate Income Tax | C\$ M (4) | (1,253.7) | (156.5) | (172.4) | (174.0) | (182.8) | (177.3) | (188.1) | (104.3) | (98.4) | - | - | - | - | - | - | - | - | - | - |
| | C\$ M | (1,960.7) | (244.7) | (269.7) | (272.1) | (285.8) | (277.2) | (294.1) | (163.1) | (153.9) | - | - | - | - | - | - | - | - | - | - |
| Capital Investment | | | | | | | | | | | | | | | | | | | | |
| Development | C\$ M | (172.9) | (95.3) | (64.1) | (13.5) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Sustaining | C\$ M | (216.4) | (46.5) | (42.1) | (49.3) | (35.8) | (32.5) | (5.9) | (2.1) | (2.1) | - | - | - | - | - | - | - | - | - | - |
| | C\$ M | (389.3) | (141.8) | (106.3) | (62.8) | (35.8) | (32.5) | (5.9) | (2.1) | (2.1) | - | - | - | - | - | - | - | - | - | - |
| Total Costs | C\$ M | (5,681.3) | (759.7) | (764.8) | (760.6) | (737.2) | (707.2) | (679.4) | (506.8) | (493.7) | (176.5) | (34.1) | (28.4) | (7.1) | (4.2) | (4.1) | (4.1) | (4.6) | (6.4) | (2.6) |
| CASH FLOW | | | | | | | | | | | | | | | | | | | | |
| After-Tax Cash Flow | C\$ M | 3,280.1 | 434.0 | 478.3 | 482.5 | 507.0 | 491.7 | 521.7 | 289.3 | 272.9 | (101.7) | (34.1) | (28.4) | (7.1) | (4.2) | (4.1) | (4.1) | (4.6) | (6.4) | (2.6) |
| Discounted at 7% | C\$ M NPV | \$ 2,630 | 419.5 | 432.1 | 407.4 | 400.1 | 362.6 | 359.6 | 186.4 | 164.3 | (57.2) | (17.9) | (14.0) | (3.3) | (1.8) | (1.7) | (1.5) | (1.6) | (2.1) | (0.8) |

- (1) Private royalties are approximately 2% of gross revenues.
(2) Marketing costs are approximately C\$15.7 M each year, and C\$7.8 M in the final year.
(3) Territorial mining royalty tax is approximated as 13% of pre-tax free cash flow.
(4) Corporate income tax is approximated as 26.5% of post-Territorial mining royalty tax free cash flow.

*** This cash flow analysis is presented solely to demonstrate economic viability for the Diavik Diamond Mine mineral reserve and does not represent the business plans or cash flows of either participant of the Diavik joint venture.**

22.3 Sensitivities

The economics of the Diavik Diamond Mine are sensitive to changes in various parameters, as summarized in Table 24 below. Using the net present value at 7% discount rate as the basis for comparison, the impact of changes to key parameters can be evaluated. For the variables in the sensitivity analysis, a $\pm 10\%$ change is applied.

Table 24 NPV Sensitivity analysis – Diavik Diamond Mine (100% JV basis)

| Parameter | Financial sensitivity NPV ₇ (C\$ Billions) | | |
|------------------------------|---|-----------|-------------|
| | -10% Change | Base Case | +10% Change |
| Grade | 2.188 | 2.630 | 3.072 |
| Price | 2.188 | 2.630 | 3.073 |
| Exchange rate | 2.228 | 2.630 | 3.122 |
| Capital costs | 2.652 | 2.630 | 2.608 |
| Operating costs ¹ | 2.788 | 2.630 | 2.473 |

¹ Private royalties not sensitized for this calculation

The Diavik Diamond Mine is highly sensitive to ore grade (carats per tonne). In-situ grades do not actually change; variances whether negative or positive are the differences between the geologic model and in-situ grades. Thus it is important from a planning and expectation perspective to maintain a well-supported and sensibly estimated geologic model that evolves as more kimberlite is mined and new zones become accessible for ongoing probing and sampling ahead of production.

The mine is also vulnerable to price and exchange rates, which are external factors outside of operational control. Exchange rate is important because the product is sold in U.S. dollars while the costs of production are in Canadian dollars.

Operating costs can have a notable impact on the business. Economy, efficiency, scale and control of operating costs are therefore important and can be a cushion against uncontrollable factors such as price and exchange rates.

The financial health of the mine is least sensitive to capital costs.

22.4 Comment

The QPs are satisfied that the mineral reserves in this report have positive economics.

The tonnes and grades in the economic analysis correlate to the estimated reserves, and the production schedule is consistent with the rate and scale of mining at the Diavik Diamond Mine. While confidentiality precludes using either DDDL's or DDML's forward-looking prices, the assumptions in the analysis have sound justification and appear to be within the range of prices observed for Diavik in the past. The full scope of operating costs have been considered and provision has been made for capital requirements over the remaining mine life. Taxation has been simplified but is considered to be conservative.

Discounted cash flow analysis is used. This is consistent with conventional business practice. For this exercise, the analysis has been carried out using a spreadsheet for easy review.

Cut-off grade analysis has been covered in this chapter along with discussion of its limitations in general and in particular at the Diavik Diamond Mine.

The QPs are further satisfied that the economics of the mineral reserves are sufficiently robust to withstand a reasonable degree of adverse changes to various factors. Meanwhile, favourable changes in the same factors can provide notable upside value.

Economic analysis supports the estimation of mineral reserves by demonstrating their value potential.

23. ADJACENT PROPERTIES

While Dominion has interest in other properties in the vicinity of the Diavik Diamond Mine, there are none that are relevant to this report.

24. OTHER RELEVANT DATA AND INFORMATION

24.1 Reserve Exploitation to Date

The Diavik Diamond Mine has been reasonably consistent in delivering on expectations. Using figures available to the authors of this report, which may not be the figures reported in other sources, Table 25 illustrates the mine's life-to-date reliability of forecasts and conformance, which is a reflection of the geologic modeling and planning at the Diavik Diamond Mine.

Table 25 Reserve exploitation to date

| Diavik Diamond Mine – Conformance to Plan | | | | | | | | | | | | | | | | | |
|---|------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| | | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Life-to-Date |
| ANNUAL PLANS | | | | | | | | | | | | | | | | | |
| Ore Processed | M t | - | 0.814 | 1.700 | 2.165 | 2.300 | 2.150 | 2.300 | 1.248 | 2.126 | 2.000 | 2.212 | 2.169 | 2.009 | 2.100 | 2.049 | 27.342 |
| Waste | M t | - | <u>23.918</u> | <u>29.860</u> | <u>27.129</u> | <u>24.350</u> | <u>23.342</u> | <u>26.208</u> | <u>16.846</u> | <u>18.916</u> | <u>7.512</u> | <u>0.452</u> | <u>0.330</u> | <u>0.327</u> | <u>0.306</u> | <u>0.317</u> | <u>199.812</u> |
| Total | M t | - | 24.732 | 31.560 | 29.294 | 26.650 | 25.492 | 28.508 | 18.094 | 21.042 | 9.512 | 2.663 | 2.499 | 2.336 | 2.406 | 2.366 | 227.154 |
| Carats | M ct | - | 3.8 | 8.2 | 9.1 | 9.1 | 8.4 | 13.1 | 5.5 | 7.8 | 8.4 | 7.3 | 6.9 | 6.3 | 6.8 | 7.1 | 107.8 |
| ACTUAL | | | | | | | | | | | | | | | | | |
| Ore Processed | M t | 0.039 | 1.193 | 1.950 | 2.222 | 2.331 | 2.400 | 2.414 | 1.359 | 2.091 | 2.234 | 2.053 | 2.102 | 2.260 | 1.977 | 2.210 | 28.835 |
| Waste etc | M t | <u>1.496</u> | <u>25.978</u> | <u>29.755</u> | <u>26.353</u> | <u>23.133</u> | <u>22.276</u> | <u>21.089</u> | <u>17.340</u> | <u>18.098</u> | <u>8.888</u> | <u>0.516</u> | <u>0.368</u> | <u>0.370</u> | <u>0.302</u> | <u>0.402</u> | <u>196.365</u> |
| Total | M t | 1.535 | 27.171 | 31.705 | 28.575 | 25.463 | 24.676 | 23.504 | 18.699 | 20.189 | 11.122 | 2.569 | 2.470 | 2.631 | 2.279 | 2.612 | 225.200 |
| Carats | M ct | - | 3.8 | 7.6 | 8.3 | 9.8 | 11.9 | 9.2 | 5.6 | 6.5 | 6.7 | 7.2 | 7.2 | 7.2 | 6.4 | 6.7 | 104.3 |
| % DIFF (Actual/Plan) | | | | | | | | | | | | | | | | | |
| Ore Processed | M t | n/a | 147% | 115% | 103% | 101% | 112% | 105% | 109% | 98% | 112% | 93% | 97% | 113% | 94% | 108% | 105% |
| Waste etc | M t | n/a | <u>109%</u> | <u>100%</u> | <u>97%</u> | <u>95%</u> | <u>95%</u> | <u>80%</u> | <u>103%</u> | <u>96%</u> | <u>118%</u> | <u>114%</u> | <u>112%</u> | <u>113%</u> | <u>99%</u> | <u>127%</u> | <u>98%</u> |
| Total | M t | n/a | 110% | 100% | 98% | 96% | 97% | 82% | 103% | 96% | 117% | 96% | 99% | 113% | 95% | 110% | 99% |
| Carats | M ct | n/a | 100% | 92% | 91% | 108% | 141% | 70% | 102% | 84% | 80% | 99% | 106% | 115% | 94% | 95% | 97% |

24.2 Comment

While the accuracy of mine planning and track record of operating performance are separate matters from the predictive reliability of a mineral reserve model, meeting expectations requires a combination of all three elements. The QPs are confident that geologic modeling and mineral reserve estimation have been kept reasonably up to date, providing a credible primary input to the mine schedules and business plans for the Diavik Diamond Mine.

25. INTERPRETATION AND CONCLUSIONS

25.1 Interpretation and Conclusions

The QPs are satisfied with the status of mineral tenure, regulatory permits, environmental performance, workplace quality and community social responsibility. A strong record in all of these areas and unflagging stewardship bode well for the mine in the years ahead.

The geological setting, mineralization, structural and alteration controls, deposition processes and occurrence of kimberlite pipes are well understood. Knowledge of the kimberlites has been evolving over time and continues to grow with experience.

The types of drilling, sampling methodology and type of data collected are consistent with industry practices for diamond deposits. Drill-site supervision, quality assurance and security are considered to be among industry best practices. Qualified technical staff exists at the Diavik Diamond Mine and additional diamond industry experts are available from outside of the mine. The database is managed conscientiously in-house and modeling is performed in a framework of peer and expert review. Several full and partial audits by third parties over the past decade provide assurance of the adequacy and reliability of the data for mineral resource estimation.

Early metallurgical test work had been appropriate. Processing performance was subsequently borne out in practice. More recent metallurgical tests have been batched through the Diavik processing plant on site, eliminating the need for scaling and providing direct experience of how the test feed would behave in full production. The Diavik ore processing plant has operated continuously since commissioning in late 2002 and has exceeded its 'nameplate' capacity. Nevertheless, there has been an operating focus on recovery, which has also increased over its original design specification.

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

The engineering design, operating parameters and economic assumptions provide a credible basis for the conversion of mineral resources to mineral reserves. Several years of operating history are available. Forward-looking views of pricing and exchange rates are established and approved at corporate levels by qualified/authorized executives. The future dike and open pit for the A21 kimberlite are backed by engineering and detailed costing; an implementation team is in place and construction is on schedule.

Notwithstanding the impossibility of assaying for diamonds and the difficulty of closing reconciliation loops, efforts to reconcile to actual production have been diligent and rigorous. Ongoing sampling is carried out ahead of production which provides an additional source of information from active mining areas. Learnings are providing valuable feedback for keeping the models updated and relevant as reliable prediction tools for the business.

The Diavik Diamond Mine is a fully functional operating mine with all required infrastructure in place for current operations and an active sustaining capital plan for future requirements. Key features of the operation include the integrated open pit and underground mining excavations, waste rock and till storage piles, crushing and backfill manufacturing plants, processing and recovery plants, processed kimberlite containment, accommodations facility and airport. As a remote site without year-round road access, Diavik is self-contained and also includes physical plant along with power generation and water treatment, mine air heating, water retention dikes and dams, cargo handling and materials management, shops and offices. The associated costs of production and site infrastructure are well understood, thus supporting the assessment of viability in the estimation of the mineral reserves and mineral resources.

The global market for diamonds is considered to have sound fundamentals and a favourable outlook based on projected demands outpacing the availability and rate of new mine developments. The price forecasts are based on Dominion sales experience and are a best estimate in lieu of the lack of a forward market for rough diamonds to provide external long-run pricing trends. The forecasts are a reasonable assumption on which to base the estimated mineral reserves in this report.

The operation is staffed in all areas. A recruitment process fills vacancies due to emerging needs and employee turnover. A training department is active on site. In the past, the mine had been named one of CANADA'S TOP 100 EMPLOYERS for three consecutive years. This supports the mineability of the mineral reserves and the viability potential of the mineral resources.

The operating and capital costs appear realistic, reasonable and appropriate for the mineral reserves, the methods of production, the required support functions, and the schedule.

Cash flows for the Diavik Diamond Mine are positive, which supports the definition of mineral reserves. Moreover, the economics withstand a reasonable degree of adverse changes to various economic drivers.

Classification of the mineral reserves into proven and probable categories is consistent with CIM Definition Standards on Mineral Resources and Mineral Reserves.

In terms of performance as a viable enterprise, the Diavik Diamond Mine has generally met stakeholder expectations on a sustainable basis since its 2003 production start-up.

The QPs believe that the mineral resources and mineral reserves of the Diavik Diamond Mine as of December 31, 2016 are reasonable and acceptable.

25.2 Risks

Risks affecting the estimate of mineral reserves are among the risks to the mining operation, the mine plan, plant recovery, the markets, regulatory affairs, the environment and communities. Such risks include geotechnical conditions, mine water inflows, diamond prices and exchange rates, fuel prices, non-renewal of permits and leases, changes to environmental requirements or social expectations.

25.3 Opportunities

Underground mine development continues to open up drilling access to support a continuation of modeling at depth for the A154N, A154S and A418 pipes. This could lead to small further additions to mineral resources in the near future, and perhaps some conversion to mineral reserves depending on engineering and economics.

Production from the new dike and open pit for A21 is expected to commence during 2018 following construction. Opportunity was taken during 2015 and 2016 to perform further delineation work to increase forecasting confidence from feasibility levels of estimation to short-range planning levels of accuracy to support a 2018 start-up with minimal surprises.

The A21 project has been optimized for maximum net present value in terms of dike size/cost versus pit size/value. However, a small volume of A21 kimberlite remains below the optimized pit. Underground mining for A21 appears unviable but innovative methods for scavenging some of the remaining pipe are attractive. Studies will progress in due course which could see additional value gained from the A21 kimberlite pipe.

26. RECOMMENDATIONS

Further work is required to better define pipe shape ahead of mine development in all four project pipes.

Additional macrodiamond sampling is needed to define grades at the bottom of the A154S, A154N, A418 and possibly the A21 pipe depending on the mining method chosen for scavenging below the planned open pit. Approved budgets are in place for delineation drilling programs over the next five years, as well as a deep core sampling program in A154S, A154N and A418 which allows efforts to remain focused on carrying out the work plans.

Production diamond datasets are also required to confirm the prices used in planning (size-frequency and size-quality distributions), especially for A21.

In A154S and A418 where underground mining is by sub-level retreat, understanding the mining dilution has been elusive at times. Moreover, it could be dynamic over time as the height of the granite contact wall in the open void being left in each pipe increases. Mining dilution from sloughing of the wall is inevitable and so it needs to be understood for planning purposes. Efforts to understand, manage and account for dilution will likely be ongoing.

Continuous improvement — not only in geologic pursuits such as modeling and grade interpolation but also in engineering and operations with respect to methods and costs — will be the key to keeping current mineral resources and mineral reserves viable, and the key to validating additional kimberlite still to be found at depth.

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28. CERTIFICATION, DATE AND SIGNATURE – Calvin Yip

This certification applies to the technical report titled “DIAVIK DIAMOND MINE, NORTHWEST TERRITORIES, CANADA, NI 43-101 TECHNICAL REPORT”, that has an effective date of 31 January 2017 (the “Technical Report”). As an author of the Technical Report, I hereby certify that:

I, **Calvin G. Yip**, P.Eng., am employed as Principal Advisor, Strategic Planning, with Diavik Diamond Mines (2012) Inc., Suite 300, 5201 – 50th Avenue, Yellowknife, NT, X1A 2P8, Canada.

I am a member of the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists and use the title of Professional Engineer (P.Eng.). I am also a Professional Engineer registered in Ontario, British Columbia, and Yukon. I graduated from the University of British Columbia in 1983 with a Bachelor of Applied Science in mining and mineral process engineering, and in 1985 with a Master of Engineering. I also received a Master of Business Administration in 2003 from Edinburgh Business School, Heriot-Watt University, U.K. In 2004, I was named a Fellow of the Australasian Institute of Mining and Metallurgy.

I have worked in the mining industry for more than 30 years and have been a Professional Engineer since 1987. My experience in engineering and operations includes employment at a number of mines prior to Diavik including Dome (Placer Dome), Highland Valley Copper, Faro (Curragh), Cominco Copper Division, Brunswick Mining, Island Copper, and Whitehorse Copper. Brief early-career experiences were also gained in mineral exploration and as a provincial inspector of mines.

I joined Diavik in 2001 as Chief Mine Engineer and participated in the planning and start-up of the mine. During 2004–2005, I was a business analyst with Diavik’s finance group and in 2005 I became involved with strategic development including the feasibility study for the current underground mine. Subsequent work has focused on evaluating production scenarios for improving the Diavik mine’s economics as well as supporting ongoing mineral resource development. In parallel, I was also involved in evaluations and engineering for the fourth kimberlite pipe being developed for production in the near future as a new open pit.

Based on my experience and qualifications, I am a Qualified Person as such term is defined in National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* (the “Instrument”).

My first four years with Diavik were site-based. Since then, my work involves active interaction with the site and includes periodic site visits. My most recent visit was on May 9, 2016.

I am responsible for sections 1 to 3, 4.4–4.9, 5, 6.1, 6.4, 9.4, 10.5, 13.2, 14.3–14.4, 15 and 16, 17.1, 17.3–17.4, and 18 to 25 of the Technical Report.

I am not independent of Dominion Diamond Corporation and its subsidiaries as “independence” is described in Section 1.5 of the Instrument.

I have read the Instrument (including Form 43-101F1) and the Technical Report, and the sections of the Technical Report for which I am responsible have been prepared in compliance with the Instrument (including Form 43-101F1).

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible for contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated 27 March, 2017

“Signed and sealed”

Calvin G. Yip, P.Eng.

29. CERTIFICATION, DATE AND SIGNATURE – Kari Pollock

This certification applies to the technical report titled “DIAVIK DIAMOND MINE, NORTHWEST TERRITORIES, CANADA, NI 43-101 TECHNICAL REPORT”, that has an effective date of 31 January 2017 (the “Technical Report”). As an author of the Technical Report, I hereby certify that:

I, **Kari Pollock**, P.Geo., am employed as Senior Resource Geologist with Diavik Diamond Mines (2012) Inc., Suite 300, 5201 – 50th Avenue, Yellowknife, NT, X1A 2P8, Canada.

I am a member of the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists and use the title of Professional Geoscientist (P.Geo.). I am also a Professional Geoscientist registered with the Association of Professional Engineers and Geoscientists of British Columbia. I graduated from the University of Alberta in 1994 with a Bachelor of Science specializing in geology.

I have practiced in my field for 23 years. Experiences include employment with the Mineral Division of the Government of the Northwest Territories and with De Beers Canada Exploration prior to joining Diavik. I have gained firsthand experience in the drilling, sampling, geological interpretation and estimation of grade and tonnage of kimberlitic diamond deposits over the period 1997 to present.

I have been involved in the Diavik diamond mine from January 2005 to present. During this time I have planned drilling programs and attended at drilling sites, performed as well as supervised core logging, planned and visited bulk sampling areas, overseen sample processing and laboratory testing, designed and managed data systems, performed geological modeling and geostatistical estimations, inspected mineralization in active mining areas, discussed mine geology and geometallurgy with other site staff, supported exploration programs and worked with project development staff, prepared program budgets, and participated in peer reviews and third-party audits. The data handling, computations and resource estimation reported in the Technical Report have been performed by me or under my supervision.

Based on my experience and qualifications, I am a Qualified Person as such term is defined in National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* (the “Instrument”).

I carry out a regular work rotation at the Diavik mine site on a monthly basis. My most recent site visit was from March 9 to 16, 2017.

I am responsible for sections 4.1–4.3, 6.2– 6.3, 7, 8, 9.1–9.3, 9.5, 10.1–10.4, 10.6, 11, 12, 13.1, 13.3, 14.1–14.2, 15 and 16, 17.2, 26 and 27 of the Technical Report.

I am not independent of Dominion Diamond Corporation and its subsidiaries as “independence” is described in Section 1.5 of the Instrument.

I have read the Instrument (including Form 43-101F1) and the Technical Report, and the sections of the Technical Report for which I am responsible have been prepared in compliance with the Instrument (including Form 43-101F1).

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible for contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated 27 March, 2017

“Signed and sealed”

Kari Pollock, P.Geol.