



PEREGRINE DIAMONDS LTD.



**Peregrine Diamonds Ltd.
Lac de Gras Project
Northwest Territories, Canada
NI 43-101 Technical Report**



Prepared for:

Peregrine Diamonds Ltd.

Prepared by:

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Effective date:

15 July 2014

CERTIFICATE OF QUALIFIED PERSON

I, Ted Eggleston, Ph.D., RM SME., P. Geo., am employed as a Principal Geologist with AMEC E&C Services, Inc. (AMEC).

This certificate applies to the technical report entitled "Lac de Gras Project Northwest Territories Canada NI 43-101 Technical Report" that has an effective date of 15 July 2014 (the "technical report").

I am a Registered Member of the Society for Mining, Metallurgy and Exploration (RM SME, membership #4115851) and licensed as a Professional Geologist in the States of Wyoming (PG-1830) and Georgia (PG002016). I graduated from Western State University of Colorado with a BA degree in 1976 and from the New Mexico Institute of Mining and Technology with MSc and PhD degrees in Geology in 1982 and 1987 respectively.

I have practiced my profession for 35 years during which time I have been involved in the exploration for, and estimation of, mineral resources and mineral reserves, for various mineral exploration projects and operating mines. In that time I have been directly involved in exploration for, and review of, exploration, geological models, exploration data, sampling, sample preparation, assaying, and other analyses, quality assurance-quality control, databases, and resource estimates for a variety of base and precious metals deposits, industrial mineral deposits, and kimberlite diamond deposits. I have been involved with DO-27, Diavik, Gahcho Kué, Snap Lake, Star, Jwaneng, Orapa, and Voorspoed kimberlitic diamond deposits in various capacities.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101).

I visited the Lac de Gras project between 18-24 March 2007 and 25-30 October 2007. I reviewed the geological model, exploration data, sampling, sample preparation, sample processing, quality assurance-quality control, and database for the deposit. I reviewed the results of core and reverse-circulation drilling undertaken in 2007 and 2008 by Peregrine Diamonds Ltd.

I am responsible for Sections 1 through 13 and Sections 15 through 27 of the technical report.

I am independent of Peregrine Diamonds Limited as independence is described by Section 1.5 of NI 43-101.

I was involved with the Project in 2007 and 2008 during which time I observed data collection and assisted with geological modeling on the Project.

I have read NI 43–101 and the sections of the technical report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the technical report not misleading.

Dated: 18 July 2014

“Signed and stamped”

Dr Ted Eggleston, RM SME

CERTIFICATE OF QUALIFIED PERSON

I, Ken Brisebois, P.Eng., am employed as a Technical Director with AMEC E&C Services, Inc. (AMEC).

This certificate applies to the technical report entitled "Lac de Gras Project Northwest Territories Canada NI 43-101 Technical Report" that has an effective date of 15 July 2014 (the "technical report").

I am a member of the Association of Professional Engineers of B.C. (#21146). I graduated from the University of Waterloo, Ontario with a Bachelor of Applied Science in Geological Engineering in 1986.

Since 1987 I have been involved in geostatistical and resource modelling studies in the mining industry. Past projects have included resource estimation and geostatistical studies in deposits of various deposit types including gold, silver, copper, diamonds, iron ore, coal and base metals. Other areas of study have included tar sands deposits, grade control for operating mines, geostatistical software development and auditing assignments for the above mentioned deposit types. I have been involved with DO-27, Gaucho Kue, Snap Lake, Victor, Star, Renard, Jwaneng, Orapa, Voorspoed, Venetia, DebMarine and Namdeb Coastal diamond deposits in various aspects of resource and reserve estimation.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101).

I visited the Lac de Gras project between 25-30 October 2007.

I am responsible for Section 14 of the technical report.

I am independent of Peregrine Diamonds Limited as independence is described by Section 1.5 of NI 43-101.

I was involved with the Project in 2007 and 2008 during which time I estimated Mineral Resources for the Project.

I have read NI 43-101 and the sections of the technical report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the technical report not misleading.

Dated: 18 July 2014

“Signed and sealed”

Ken Brisebois, P.Eng.



CERTIFICATE OF QUALIFIED PERSON

I, Jennifer Pell, Ph.D., P. Geo., of the city of Vancouver in the Province of British Columbia, do hereby certify that:

- 1) I am currently employed as Chief Geoscientist by:
Peregrine Diamonds Ltd. ("Peregrine")
Suite 201, 1250 Homer Street,
Vancouver, BC., V6B 1C6
- 2) This Certificate applies to the technical report "Lac de Gras Project, Northwest Territories, Canada NI 43-101 Technical Report", with an effective date of 15 July 2014 (the Technical Report).
- 3) I graduated with a Doctorate of Philosophy in Geology from the University of Calgary in 1984. I also have an Honours Bachelor of Science degree in Geology from the University of Ottawa, which I obtained in 1979.
- 4) I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (license # 27532) and I am a registered Licensee with the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories (L1442) and I am a Fellow of the Geological Association of Canada (F3186).
- 5) I have worked as a geologist since my graduation from university in 1984. During this time I have held positions in government, universities and industry. I have been involved in diamond exploration and kimberlite research in Northwest Territories, Nunavut, Manitoba and British Columbia, Canada as well as in Brazil, Guinea and Tanzania.
- 6) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 7) I am responsible for Sections 1 through 12 and 15 through 27 of the Technical Report.
- 8) I have had prior involvement with the project that is the subject of this report. I was responsible for the design and implementation of the 2004 and 2005 regional exploration programs. I was on the property on August 17 and September 15 & 16, 2004 collecting till samples and visiting the DO-27 site. I was on site at DO-27 during the initial 2005 mini-bulk sampling and exploration programmes from February 19 to March 1; March 15 to April 14; May 2 to May 9; May 18 to May 23; July 19 to August 4 and August 18 to September 17. I was

also at Ekati, sorting the diamonds with Howard Coopersmith from April 26 to May 2 and in Antwerp from October 24 to 29 with the DO-27 diamonds while they were being examined by Rio Tinto. During the 2006 program at DO-27, I visited the site on March 3 & 20; April 2, 3, 8, 10 & 11 and May 2 to 14. I visited the Ekati™ plant from June 16 to 19 and sorted the DO-27 diamonds with Howard Coopersmith at Ekati™ from July 4 through July 12 and from August 4 through August 16. From September 7 to 12, I was in Antwerp with the DO-27 diamonds during valuations by WWW. In 2007, I was at the DO-27 camp and visited the Yellowknife core logging facility between March 18 and 24. An initial trip was made to the Ekati™ plant from May 8 to 11 to check the plant and to be present at the beginning of processing. I was present at the Ekati™ test plant from May 15 to 18, with Howard Coopersmith to sort the diamonds from the 2007 mini-bulk sample. From July 30 to August 6, I was at the DO-27 exploration camp, reviewing the core drilling program. From September 11 to 14, I was at BHP Billiton's SVF facility in Yellowknife organizing (grouping, sieving, etc.) the DO-27 diamonds for cleaning. After cleaning, I sieved the diamonds and put them into sieve, grainer and carater classes for valuation export and valuation. From October 8 to 20, I was in Antwerp with diamonds while they were being valued by WWW. In 2012, I was in Yellowknife, logging and sampling drill core from LD-2 and LD-3 between May 3 and 9. I also authored or co-authored Assessment Reports in 2004, 2006, 2007 and 2008 and N.I. 43-101 Technical Report on the project in 2006.

My most recent visit to the project was from May 3 and 9 2012 where I was in Yellowknife, logging and sampling drill core from LD-2 and LD-3.

- 9) As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- 10) I am not independent of Peregrine within the meaning of section 1.5 of NI 43-101. I am Chief Geoscientist for Peregrine and hold shares and options in the company.
- 11) I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that Instrument and Form.

Dated this 18th day of July, 2014.

Original Signed and Sealed

"Jennifer Pell"

Jennifer Pell, Ph.D., P. Geo
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IMPORTANT NOTICE

This report was prepared as National Instrument 43-101 Technical Report for Peregrine Diamonds Ltd. (*Peregrine*) by AMEC Americas Limited (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC's services, based on i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by *Peregrine* subject to terms and conditions of its contract with AMEC. Except for the purposed legislated under Canadian provincial and territorial securities law, any other uses of this report by any third party is at that party's sole risk.

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1.0 SUMMARY

1.1 Property Description and Location

The Lac de Gras Project (the Project) is located approximately 300 km north-northeast of the city of Yellowknife in the Northwest Territories, Canada to the southeast of the Diavik diamond mine (Figure 4-1 and Figure 4-2), centred at approximately 64° 20' N latitude and 109° 50' W longitude.

The Project consists of 12 mineral leases and seven mineral claims, with an aggregate area of 15,810 ha. For administrative purposes, the tenure holdings are grouped into three lease/claim areas as follows:

- **WO Property**
 - Eight leases: 4131 (SAS 1), 4132 (SAS 2), 4133 (SAS 3), 5267 (TT 1), 5265 (TT 2), 5268 (TT 3), 5270 (OW 19), and 5271 (OW 20)
 - Combined area of 5,816.55 ha
 - Ownership breakdown of Peregrine Diamonds Ltd. (Peregrine; 72.097%), Archon Minerals Limited (17.569%), DHK Diamonds Inc. (10.334%)
 - Royalties payable of 0.25% gross overriding royalty (GOR) to Mantle Diamonds Canada Inc.; 0.55% GOR to Aberex Minerals Ltd.; 1.0% GOR to 824567 Canada Limited
 - Peregrine holds 97.92% of the diamond marketing rights from any WO Property diamond production.
- **LDG Thelon Property**
 - Three leases: 5269 (OKI 1), 5263 (OKI 2), 5264 (OKI 3)
 - Combined area of 1,632.91 ha
 - Ownership breakdown of Peregrine Diamonds Ltd. (70.54%), Thelon Capital Ltd. (29.46%)
 - Royalty payable of 4% GOR on all diamonds and 4% net smelter return (NSR) royalty on all metals to Mackenzie Jaims
- **LDG Peregrine Property**
 - One lease: 5266 (CRW 5) and seven claims: MLT 1, MLT 2, MLT 3, MLT 4, MLT 5, MLT 6, MLT 8
 - Combined area of 8,360.81 ha
 - Ownership breakdown of Peregrine Diamonds Ltd. (100%)

- Royalties payable of 1% GOR on diamonds to Thelon Capital and 2% GOR on diamonds to a group consisting of Mike Magrum, Lane Dewar, and Trevor Teed/974124 NWT Ltd.

Peregrine is the operator of all work programs pertaining to the WO Property, LDG Thelon Property, and the LDG Peregrine Property. All joint venture partners are required to contribute to future programs or their respective interests will be subject to dilution according to the joint venture agreement.

In addition to the royalties noted above, royalty payments would also be required to be made to the Government of the Northwest Territories on any future production.

Peregrine holds two current land use permits, and a current corporate prospecting licence. These permits allow Peregrine to explore on the claims and leases that they control.

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

Access to the area is from Yellowknife, which is the main staging area for all operations in this region. Most necessary services can be obtained in Yellowknife. Access is commonly via fixed wing aircraft equipped with wheels, floats, or skis, depending on the season. From approximately mid-January to mid-April access is provided via a winter ice road which connects Yellowknife with the Diavik and Ekati Diamond Mines. This road passes within 11 km of the DO-27 kimberlite.

The Project is located within the Canadian Arctic tundra, or barren lands. For the majority of the year, the area is covered with ice and snow. Summer begins in June, when melting commences and by October winter has returned. Temperatures range from highs of around 25°C during the brief summer months, to winter lows of -45°C which are often magnified by strong, constant winds. Daylight varies from nearly 24 hours in the summer to only a few hours per day during the winter.

The DO-27 kimberlite is located within a small stream fed valley that contains a small lake (approximately 1 km²), informally referred to as Tli Kwi Cho Lake, below which lies most of the kimberlite pipe. The stream, which flows into Tli Kwi Cho Lake from the north, is intermittent with high volume flow during the summer, due to melt water and diminishing to a small trickle by fall. Tli Kwi Cho Lake has an average depth of approximately 4 m and drains south into Thonokied Lake. Low granitic hills with sporadic frost heave outcrop and subcrop have a maximum elevation of 30 m above lake level.

For the current and recommended exploration activities, potential processing plant sites, tailings and waste storage and disposal sites and other mining related issues are not relevant. However, sufficient water and appropriate facility sites appear to be present. Land use permits for the current and recommended program are in hand.

1.3 History

Claims comprising the Project were originally part of the WO claim block staked by representatives of DHK consortium in February of 1992 following the announcement, by BHP Billiton (BHPB) and DiaMet Minerals Ltd. (Diamet), in the fall of 1991, of the diamond discovery at Point Lake. DHK shareholders were Dentonia Resources Ltd (Dentonia, 33%), Horseshoe Gold Ltd. (Horseshoe Gold, 33%) and Kettle River Resources (Kettle River, 33%). The claims were then optioned to Kennecott Canada Exploration Inc. (Kennecott), SouthernEra Resources Ltd (SouthernEra), and Aber Resources Inc. (Aber), who exercised the option, leaving DHK with a carried interest. Kennecott was operator and completed exploration work on the property discovering six kimberlites: DO-18, DO-27, DO-29N, DO-29S, DO-32 & AD-02 (Doyle, 1994; 1995; 1996; 1997).

Between 2000 and 2004, some of the original claims were allowed to lapse and were acquired by other operators, including Thelon Ventures Ltd. (Thelon) and Dunsmuir Ventures Ltd. (Dunsmuir). In 2004, Peregrine acquired BHPB's interest in the remaining claims from the original WO block (which contained the OW 19, OW 20 and TT 1 to 3 claims and SAS 1 to 3 leases). Dunsmuir entered into options to earn 100% interest in the MLT 1 to 6 and MLT 8 claims from a private prospecting syndicate and to earn a 65% interest in the CRW 5, and OKI 1 to 3 claims from Thelon. In 2006, Dunsmuir and Peregrine merged and the claims were re-united.

In 2000, BHPB signed an option to earn an interest in part of the Project area by flying a FalconTM gravity survey and drilling targets. Kennecott agreed to exchange their 40% working interest in the property for a 9.9% interest in DHK.

In 2004, Peregrine acquired BHPB's interest in the Project.

1.4 Geological Setting and Mineralization

The Project lies within the Slave Structural Province of the Northwest Territories, northern Canada, which is an Archean segment of the North American Craton. The Slave Province is subdivided isotopically into an eastern and a western domain. Kimberlites intrude granites, supracrustal rocks and, in some cases, diabase dykes (Pell, 1995, 1997) in both the eastern and western domains of the Slave Province. To

date, all economic and near economic kimberlites, including those at Ekati, Diavik, Snap Lake, Gahcho Kué, and Jericho are located in the eastern Slave Province.

Subsequent to kimberlite emplacement, the area was covered by the Laurentide ice sheet during the Late Wisconsinan glaciation, which climaxed about 20,000 years before present (B.P.). Till is the most prominent surficial sediment type in the Slave Geological Province. Glaciofluvial deposits, eskers, and outwash plains, are present in the Slave Province. In the Lac de Gras area, eskers are mainly west and northwest trending.

Two-mica post-deformational granite is the only major rock type on the properties. Medium- and high-grade Archean metaturbidites occur both east and west of the property. All of the kimberlites discovered on the properties, including DO-27 and DO-18, which lies 800 m north of DO-27, intrude the granite. DO-27 does not crop out; it is overlain by 23-50 metres of till consisting of angular granitic boulders, gravel, sand, silt and clay and is mostly covered by Tli Kwi Cho Lake with an average depth of approximately 4 m and area of 1 km². Till thickness at DO-18 is between five and 20 metres.

The main DO-27 pipe is asymmetrical in shape, with a steep western margin and a shallower eastern margin in the northeastern part of the pipe. The irregular shape of the pipe and complex geology in the northeastern zone suggests that two separate, but related eruptions may have been involved in pipe formation (Doyle et al., 1999).

DO-27 consists primarily of KIMB-1, a pyroclastic kimberlite (PK). KIMB-1 is commonly light to medium green in colour. It is extremely altered and the upper 100 m generally displays extremely poor mineral and textural preservation. This lack of preservation is most notable towards the centre of the pipe, with preservation improving towards the margins. KIMB-1 is clast-supported, moderately well-packed, and is dominated by single olivine grains over juvenile lapilli, comprising approximately 60-70% olivine.

KIMB-2 is volumetrically the second most important kimberlite. KIMB-2 is interpreted to be magmatic in origin and may be related to the magmatic sheets (dikes and sills) common immediately north of the DO-27 pipe. KIMB-2, where intersected in the vicinity of the northeastern lobe, is granite-rich (>25%), with a brownish to greenish kimberlite matrix with white to light green altered granitic clasts.

KIMB-3 is a complex unit of volcanoclastic kimberlite that contains several sub-divisions that cannot always be correlated between drill holes. To date, it has been observed only in the northeastern lobe of DO-27 where it comprises approximately 20% of the kimberlite (approximately 2% of the whole body), locally underlying KIMB-1. It is

variable in colour from green to black and highly variable in grain size, sorting and xenolith content, with some units (KGB – kimberlite-granite breccia) containing > 30% granite boulders up to 2 m in size.

KIMB-P is volcanoclastic, possibly re-sedimented, kimberlite infilling the DO-27 pipe which cannot be further subdivided into KIMB-1 or KIMB-3. It is present in small volumes at the pipe margins in many areas of the kimberlite. It contains variable amounts of dilution, and contains as much as 15% mud as xenoliths and within the matrix.

Mineralization within the Project consists of kimberlite intrusions containing diamonds.

1.5 Deposit Type

DO-27 is a diamondiferous kimberlite pipe similar to others found in the Canadian Arctic, South Africa, and Russia.

1.6 Exploration

Since the claims were first staked, exploration has consisted of geophysical studies, core and reverse circulation (RC) drilling, and underground developments. Peregrine exploration at DO-27 consists of core and large diameter reverse circulation drilling (LDD) in 2005, 2006, and 2007.

Peregrine exploration on the Project consists of till sampling, airborne and ground geophysical surveys, and core and LDD. A short underground development was driven into the edge of the DO-27 pipe by Kennecott, but geotechnical problems prevented intersection of the main pipe. Core drilling was used primarily to define the extents of the DO-27 pipe and as pilot holes for LDD that was used to produce a bulk sample of the pipe.

A field exploration program was undertaken in August 2011 at the Project in order to review and fully evaluate kimberlite exploration potential. Activities in 2011 and 2012 included ground geophysics and drilling that resulted in the discovery of two new kimberlites, LD-2 and LD-3. A 187.1 kg sample of LD-2 was sent to the Saskatchewan Research Council (SRC) of Saskatoon, Saskatchewan, Canada for microdiamond testing by caustic fusion. The sample returned 22 diamonds larger than the 0.106 mm sieve size including one stone larger than the 0.85 mm sieve size. Twenty-four diamonds larger than the 0.106 mm sieve size were recovered from a 48.2 kg sample of LD-3.

1.7 Drilling

Drilling at DO-27 consists of 70 HQ and NQ core holes (18,248 m) and 46 large diameter reverse circulation (LDD) holes (8,848 m) performed by Peregrine and 44 core holes (5,937 m) drilled by Kennecott in 1993. Core drilling by Peregrine was utilized to define the limits of the pipe to approximately 350 m depth, as pilot holes for the large diameter RC program, and to collect material for metallurgical tests. LDD was used to collect bulk samples of the kimberlite. A total of 6,678 m of kimberlite were intersected in the LDD holes.

Peregrine drilled 15 core holes (3,131 m) at DO-18 between 2005 and 2006. Kennecott drilled 13 core holes (2,106 m) between 1993 and 1996 to define the extent of the kimberlite.

Other drilling on the Project consists of 23 core holes (2,076 m) drilled between 1993 and 2002 by Kennecott and others on exploration targets and six core holes (658 m) drilled by Peregrine on various exploration targets.

1.8 Sampling Method and Approach

Drill core was sealed in core boxes at the drill site after it was “quick-logged” by the project geologist to determine if it was kimberlite. Core was then transported directly to the secure onsite core logging facility where geotechnical logs were completed. All holes containing kimberlite were then securely boxed and shipped via wheel or float plane to Peregrine’s core logging facility in Yellowknife for detailed examination. Prior to logging, a complete photographic record of each core hole was taken. After the macroscopic log was completed, representative samples for petrography were selected from each core hole such that geology of each hole could be reconstructed from these samples. Drill holes were sampled for macro- and microdiamonds and submitted for caustic fusion analysis as deemed necessary. Sampling of DO-27 and DO-18 drill core was done to industry standards by, or under the supervision of, Margaret Harder of Mineral Services Canada. Logging and sampling of drill core at LD-2 and LD-3 was done to industry standards by Jennifer Pell, Chief Geoscientist for Peregrine.

Bulk samples were collected by Peregrine in the winters of 2005, 2006 and 2007 by LDD. Protocols for this work were developed by Peregrine and its consultants, and are described in detail in Coopersmith and Pell (2007). At logical breaks during the drilling and immediately after the RC hole was completed, a caliper survey of the hole was completed to allow the volume of extracted kimberlite to be calculated. In 2005 and 2007, Century Wireline Services (Century) of Tulsa, Oklahoma performed three-

arm caliper surveys. In 2006, DGI Geosciences Inc. of Toronto, Ontario performed the caliper measurements. Wherever possible, these logical breaks defined sample breaks.

Bulk samples were collected using 1,300 L capacity double-layer bags. In 2005, +0.85mm material was collected and in 2006-2007, +1mm material was collected and sent for processing. The undersized material does not contain diamonds of commercial value and went into a mud tank and was subsequently taken to the onsite sump. Once a bag was filled it was sealed with a tamper evident security seal and transported to the Ekati sample plant for processing. A strict chain of custody procedure was observed when samples were shipped to the Ekati plant.

1.9 Sample Preparation, Analysis, and Security

All macro- and microdiamond sampling was completed in Peregrine's secure facility in Yellowknife. Core sent for macro- and microdiamond analysis was placed in polyurethane bags that were sealed and put into 20 L pails that were sealed with tamper-evident lids which, in turn, were secured with a uniquely numbered security seal. Once the samples were security sealed, they were put on pallets and shrink wrapped. They were then transported by truck to the SRC, an ISO/IEC 17025 accredited laboratory. The caustic fusion method of diamond extraction was employed by the SRC.

All whole core from DO-27 sent for metallurgical testing was wrapped and protected by bubble wrap, placed in polyurethane bags that were sealed, and put into 20 L pails that were sealed with tamper-evident lids which, in turn, were secured with a uniquely numbered security seal. Once the samples were security sealed, they were shipped via wheel or float plane to Yellowknife and put on pallets and shrink wrapped. They were then transported by truck to SGS Mineral Services (SGS) in Lakefield, Ontario.

1.9.1 Macrodiamond Processing

Bulk samples from DO-27 were collected using 1,300 L capacity double-layer bags with a 35" (0.89 m) x 35" (0.89 m) square bottom and 41" (1.04 m) high panels on each side. Each bag was labelled on two sides with a felt marker. Individual samples were prepared at the drill by treatment over a vibrating screen to remove -0.85 mm (square mesh) material in 2005 and -1 mm (square mesh) material in 2006-2007. This undersize material does not contain diamonds of commercial value. Drill cuttings that passed over the 0.85 or 1 mm vibrating dewatering/de-sliming screen were collected in sample bags that were placed at the end of this screen. Only the +0.85 or +1 mm material was collected and sent for processing. Undersize material went into a mud

tank and was later taken to the onsite sump. Once a sample bag was filled it was sealed with a tamper evident security seal.

The Ekati sample plant is a small-scale diamond recovery plant that was used to process the bulk samples. It is a secure facility with dedicated security staff, security procedures, and multiple layers of physical security measures in place. Additional security procedures were put in place for handling of the Peregrine samples, as these are outside samples to BHPB. The facility had restricted and controlled access, physical searches, surveillance equipment, and security staff continually present and monitoring the operation. Strict chain of custody was followed. Ekati personnel had only limited access, under security presence and surveillance, to final x-ray or grease concentrates for sealing purposes. Observation and sorting of these concentrates was handled strictly by Peregrine representatives (Peregrine QPs and senior staff under QP supervision, using the two person rule), under Security surveillance. Concentrates were accessed and stored through the Ekati two person secure storage mentioned above. Howard Coopersmith reviewed and observed Ekati security procedures and operations, and received copies of, and reviewed, all security reports and documentation. No tampering or suspicious circumstances were noted during the handling of the Peregrine bulk samples and products at any point.

1.9.2 Microdiamond Processing

Microdiamonds were extracted from 8 kg core samples by caustic fusion at the SRC laboratory in Saskatoon.

1.10 Data Verification

AMEC reviewed the work at DO-27 and verified data that were to be used for resource estimation. All data in the database were checked and double checked. Discrepancies were resolved immediately. AMEC believes that the database is reasonably error free and adequate for resource estimation.

Jennifer Pell monitored the work in 2012 and AMEC verified those data against original data from SRC.

1.11 Adjacent Properties

The Project is situated at the southern border of the Diavik Mine property. The DO-27 kimberlite itself is 23 km southeast of the Diavik mine site. All mineral leases to the north of the Project are held by Diavik Diamond Mines Inc. Other active mineral claims

and leases in the immediate area are held by various operators. No information or data are available or relied upon from adjacent properties for this report, nor is any direct relationship with any mineralization on adjacent properties implied.

1.12 Mineral Processing and Metallurgical Testing

1.12.1 DO-27 Macrodiamond Sample Processing

Sample processing protocols were developed specifically for Peregrine's requirements and the use of the Ekati sample plant. The Ekati sample plant was used by Peregrine for the 2005, 2006 and 2007 sample processing. AMEC visited the sample plant in 2005 to observe operations during DO-27 sample processing, and reported on their findings and recommendations (AMEC Americas, 2005). Howard Coopersmith was present at the Ekati plant for the processing of several complete DO-27 samples and audits, and to assess protocol compliance, metallurgical operations, efficiency, and security. A complete processing report was provided by BHPB (Fortin, 2007). The Ekati sample plant recovered diamonds down to a minus 1.0 mm bottom cut off, using primarily 1 mm x 14 mm slotted screens.

After the concentrate was produced, final diamond recovery operations were performed by Howard Coopersmith assisted by Jennifer Pell and Jim Crawford of Peregrine. Sorting procedures and protocols are presented in Appendix 5 of Coopersmith and Pell (2007). Ekati personnel performed all sample processing and recovery operations until the final product (X-ray diamond recovery machine and grease table products). These products were labelled and securely stored for Peregrine personnel who performed all final concentrate handling and sorting. Ekati personnel were not party to any final recovery operations or results; however, all operations were conducted in view of security cameras monitored by Ekati security personnel.

1.13 Mineral Resource Estimates

The three-dimensional model of the DO-27 kimberlite and the tonnage and resource estimates are based on data from 66 core holes (17,300 m) and 46 LDD (35-61 cm) holes totalling 8,800 m and sample results for a cumulative 3,200 dry tonnes of bulk sample material collected from the LDD holes. The tonnage for each block was calculated by multiplying the interpreted volume by density determined from a three-dimensional density model developed by AMEC. The density model was based on 507 density measurements on drill core from throughout the body performed by Global Discovery Laboratories in Vancouver. Recovered macrodiamond results at a 1 mm lower cutoff were used to interpolate grades into 25 x 25 x 15 m blocks. Ordinary

kriging was used to estimate the block grades. The Vulcan™ mine modelling software system was used to create the resource model.

Detailed analysis of diamond size distributions led to an adjustment process to account for known differences in diamond recovery regimes between drill campaigns. Study of these data showed that the distributions were affected by year-to-year treatment plant recovery differences. AMEC used factors derived from industry-standard recovery studies to adjust the distributions before their use in the resource estimation. Adjustments derived from these analyses for conversion of individual sample cph values were 1.33 for 2007 data (addresses deficiency of small stones due to treatment plant differences) and 1.11 for 2006 data (adjusts for a small degree of deficiency of large stones).

AMEC used a base case from the various Lerchs-Grossman (LG) sensitivity runs to establish reasonable prospects for eventual economic extraction. The shell was used to restrict the estimated block model for tabulation and reporting. AMEC has used the Scrub-only, 'high' diamond price, LG case discussed below. This case uses the 'high' diamond value from the WWW International Diamond Consultants Ltd (WWW) diamond valuation. Based on project and resource modelling work to date, AMEC considers the kimberlitic material contained within the resulting resource shell to be an Indicated Mineral Resource (Table 1-1). The base elevation of the Indicated Mineral Resource lies within adequate proximity of the RC drilling where macrodiamond sampling has occurred. These data have been used to estimate and value the diamond resource. While the effective date of the estimation and tabulation is some six years older than this Technical Report, AMEC is of the opinion that diamond price escalation exceeds mining and operating cost escalation over the intervening time period. Application of escalated parameters would not result in a decreased resource shell. From this, AMEC concludes that DO-27 has reasonable prospects for eventual economic extraction.

Sampling issues with the RC drilling (refer Sections 13.4, 14.2.2) resulted in a resource model where local variations in block grades may not be fully reflected in the resource block estimates. The Indicated Mineral Resource classification must therefore carry the important caveat that it can only be converted to a Mineral Reserve without the use of cutoffs or mining selectivity assumptions. Any future Mineral Reserve conversion process must treat the Indicated Mineral Resource from this long-range resource model as a bulk-mining target with no opportunity for selective mining alternatives.

There has been no Inferred Mineral Resource declared at this time given the results of the resource shell runs. It is clear from the resource shell results; however, that

changing conditions may result in a declaration of an Inferred Mineral Resource in the future.

The tonnage reported in Table 1.1 lies within the Whittle™ resource shell and the modelled KIMB-1 boundary and is reported as undiluted kimberlite only (or partial block tonnes). The tabulation does not include mixed kimberlitic material that occurs between the KIMB-1 and KIMB-P boundary.

Table 1-1: DO-27 Mineral Resources

	Tonnes (1,000,000's)	Carats (1,000,000's)	Grade (cpt)
Indicated Mineral Resource	19.5	18.2	0.94
Notes :			
<ul style="list-style-type: none"> - Effective data is August 7, 2008 - Dr. Ted Eggleston, RM SME and Ken Brisebois, P.Eng are the Qualified Persons for the estimate. - Mineral Resources are stated at an effective 1mm bottom cutoff and are constrained within a conceptual mining shell based on assumptions of a diamond price of US\$72/carats, 100% metallurgical recovery, US\$2.05/t mining costs with an incremental \$0.02 per 10m depth, US\$19.96/t operating costs including on-site scrubbing and an estimate for trucking to, and processing at, an off-site diamond processing facility. 			

AMEC identified an additional 6.5-8.5 Mt of material grading in the range of 0.8-1.0 cpt beneath the Indicated Mineral Resource that represents a target for additional exploration. The potential quantity and grade of the DO-27 target is conceptual in nature and there has been insufficient exploration to define a mineral resource. It is uncertain whether additional exploration will result in the target being delineated as a mineral resource.

1.14 Reasonable Prospects for Eventual Economic Extraction

AMEC reviewed the technical and economic aspects of a conceptual mine on DO-27 as well as current diamond prices (WWW, 2014) and concluded that diamond price escalation likely more than offset any escalation of the assumed mining costs used in the resource estimates during the 2007-2014 period and that the Whittle™ resource shell used to constrain the Mineral Resource estimate in 2007 was still valid.

The legal path forward for permitting of mines in the Northwest Territories is clearly defined. A number of mines have been successfully permitted in recent years. AMEC believes that there is a reasonable expectation that a mine could be permitted at DO-27.

Mineral tenure appears to be secure. Sufficient land for mining and infrastructure are available to support a mine on DO-27. Agreement with local First Nations will be required for surface use, but there is a reasonable expectation that those agreements can be reached. Local water resources are adequate to support mining but will require proper permits from local authorities.

Based on the resource shell generated within Whittle™ and other factors discussed above, AMEC concludes that the DO-27 Resource has reasonable prospects for eventual economic extraction, but cautions that several factors could adversely impact that conclusion. Those factors include:

- Inability to secure mining permits.
- Inability to secure water rights.
- Significant decreases in diamond prices.
- Significant increases in operating or capital costs.

1.15 Other Relevant Data and Information

Peregrine contracted WWW to value the diamond parcels and perform price modelling. WWW are recognized international leaders in this field. M.M. Oosterveld, a professional mining engineer and recognized expert in diamond evaluations was contracted to give an independent review.

The 2007 individual sample goods were combined on the basis of geology to give four parcels for valuation: Parcels PDL07-03 and 04 from KIMB-1 in the main lobe of DO-27; Parcel PDL07-01 from KIMB-1 in the northeast lobe of DO-27; and Parcel PDL07-02 from other lithologies mixed with KIMB-1, at the base of the northeast lobe of DO-27.

Results of the valuation are summarized in Table 1-2.

Table 1-2: Summary of WWW Diamond Valuations for DO-27

Bulk Sampling Program	Weight Of Valuation Sample (Carats) ⁽¹⁾	Largest Diamonds (Carats)	“Base Case” Diamond Price Model (US\$/Carat) ⁽²⁾	“High” Diamond Price Model (US\$/Carat) ⁽²⁾	“Low” Diamond Price Model (US\$/Carat) ⁽²⁾
2007	1,566	9.45, 7.03, 6.03, 5.17, 4.84, 4.35, 4.19	\$52	\$72	\$39
2006/2005	509 ⁽³⁾	7.11, 3.91, 2.34	\$46	\$62	\$41
Combined	2,075 ⁽⁴⁾		\$51	\$70	\$43
⁽¹⁾ Sample weights represent the total carat weight of diamonds presented for valuation following the combination of individual sub-samples and after acid cleaning.					
⁽²⁾ As determined by WWW International Diamond Consultants Ltd.					
⁽³⁾ Values from the WWW October, 2006 price book, as reported by Peregrine on November 6, 2006.					
⁽⁴⁾ The combined sample was re-valued and modelled based on the WWW October 31, 2007 price book.					

WWW believes it is highly unlikely that the modelled average price will be lower than the minimum values and that the high values should not be considered maximum values. The modelled average price is extremely sensitive to the value of large diamonds so there is a high degree of uncertainty in the modelled value of the larger stones that would be expected in a production scenario.

AMEC was provided with a copy of a WWW report dated 14 July 2014 that shows changes to the diamond price index since the October 2007 DO-27 valuation. The WWW report shows a general upward trend to diamond prices since the valuation of the DO-27 diamond parcel.

AMEC relied on the WWW work to establish valuations for the diamonds. The valuations were applied to the estimated resource model grades models and became the basis for the development of LG resource shells within which resources have been declared. The valuation process performed by WWW and others is partially analytical (in the way that a gold assay process can be termed analytical) in that the diamonds are studied and classified. The dollar per carat determinations for various stones however, is ultimately governed by the valuator's price-book. This part of the process is proprietary, governed by a given valuator's view of the marketplace and can vary from valuator to valuator, particularly for larger stones. Even in larger parcels valuator's must then 'model' or extrapolate values in the larger stone size classes

where there may be few representatives. The methodology for modelling is also proprietary. The culmination of the process is the average prices for given zones, lobes or pipes. The heavy dependence of the process on economic market assessments, and the proprietary nature of the valuator assumptions and methods, materially affects the quality of, and confidence in, the mineral resource estimate. In this way, the valuations used in the resource assessments are quite different than the concept of analytical mineral assays in, for instance, a precious metal project. The proprietary nature of the processes employed for valuations limit any quantitative assessment of the added risk to the Project.

1.16 Conclusions

DO-27 is a diamondiferous kimberlite pipe in the Northwest Territories of Canada. It has been explored in detail to a depth of about 350 m by a combination of core and large diameter reverse circulation drilling. Drilling employed industry-standard procedures and protocols. Large diameter reverse circulation drilling was used to produce bulk samples that were then processed at the Ekati sample plant using standard procedures and protocols. Diamond valuation was performed by WWW and reviewed by M.M. Oosterveld, a recognized expert in diamond evaluations. AMEC has been involved with, and reviewed all aspects of the exploration and is of the opinion that it has been performed to industry standards. These data are the basis for an estimation of the mineral resource at DO-27. The DO-27 Mineral Resource estimates with an effective date of August 7, 2008 remain valid and relevant.

Exploration discovered a number of other kimberlites that are diamondiferous. DO-18 was explored a number of core holes that outlined the shape of the kimberlite. Other kimberlites were drilled and sampled for microdiamonds. Additional work was not done on those kimberlites because the focus of the Project was DO-27 and later, other, higher priority Peregrine projects.

1.17 Recommendations

Peregrine management has decided not to pursue development of DO-27 at this time as it does not meet their current corporate criteria and Peregrine is concentrating their efforts on other projects. AMEC believes that DO-27 has reasonable prospects for eventual economic extraction and, with the required mining studies, could support a mining operation in the future. Factors that could enhance the economics of a mining operation at DO-27 include:

- Higher rough diamond prices

- Possible underestimation of the average DO-27 diamond value because the current estimate is based on a parcel of only 2,075 carats
- More favourable Canadian-US currency exchange rates
- A diamond processing arrangement with one of the nearby diamond mines
- Increased revenue potential from downstream cutting and polishing of DO-27 diamonds
- Mining and processing technology advances
- Regional infrastructure developments
- An ultimate run of mine grade greater than the current grade estimated by reverse circulation (RC) drill samples
- Discovery of additional diamondiferous kimberlite pipes in the area

To that end, AMEC recommends that Peregrine:

- Monitor rough diamond prices and periodically have the parcel re-evaluated
- Assess engineering advances that might make a scrub-only operation more attractive or that would reduce capital and operating costs for other scenarios, making them more attractive
- Ensure that mining leases covering DO-27 and adjacent areas are kept in good standing
- Reassess the DO-27 geologic model for the potential to identify additional kimberlite tonnage and/or zones that could potentially have higher grades using desktop studies and microdiamond analysis on existing core
- Continue to evaluate diamond exploration opportunities on mineral tenure held by Peregrine using geophysics and, if warranted, undertake drilling activities

The budget for these activities is about \$925,000 and is itemized in Section 26.

2.0 INTRODUCTION

2.1 Terms of Reference

This report was prepared for Peregrine Diamonds Ltd. (Peregrine) to support Peregrine's 2013 Annual Information Form. The report updates the Project status, including the latest exploration results, and summarizes the DO-27 Mineral Resource estimate produced by AMEC.

2.2 Qualified Persons

The authors of the report are all qualified persons under National Instrument 43-101. Ted Eggleston, Ph.D., P. Geo., RM SME, AMEC Principal Geologist is responsible for sections 1 through 13, and 15 through 27. Ken Brisebois, P. Eng., AMEC Principal Engineer is responsible for Section 14. Both Dr. Eggleston and Mr. Brisebois are independent of Peregrine and the Project. Dr. Jennifer Pell assisted with parts of sections 1 through 12 and 15 through 27. Dr. Pell is the Chief Geoscientist for Peregrine and is not independent of Peregrine.

AMEC used Coopersmith and Pell (2007) as the basis for sections 1-16 and 18-23. The descriptions of geology, exploration, and processing aspects of the Project were reviewed by AMEC and found to accurately reflect the Project.

2.3 Site Visits and Scope of Personal Inspection

All three authors were actively involved in various aspects of project planning, implementation, and review from 2007 through 2008. Dr. Eggleston visited the project on 18-24 March 2007 and 25-30 October 2007. Mr. Brisebois visited the project on 25-30 October 2007. Both site visits were related to geological and exploration aspects of the project. AMEC was involved with density, volume, and tonnage determinations throughout 2007 and produced the DO-27 resource estimate reported herein in 2008.

Dr. Pell was:

- Responsible for the design and implementation of the 2004 and 2005 regional exploration programs
- On the property on August 17 and from September 15 and 16, 2004 collecting till samples and visiting the DO-27 site

- On site at DO-27 during the 2005 bulk sampling and exploration programs from February 19 to March 1; March 15 to April 14; May 2 to May 9; May 18 to May 23; July 19 to August 4 and August 18 to September 17
- At Ekati, sorting the diamonds with Howard Coopersmith from April 26 to May 2, 2005
- In Antwerp from October 24 to 29, 2005 with the DO-27 diamonds while they were being examined by Rio Tinto
- Dr. Pell visited the site on March 3 & 20; April 2, 3, 8, 10 & 11 and May 2 to 14 2006 and visited the Ekati™ plant from June 16 to 19 and sorted the DO-27 diamonds with Howard Coopersmith at Ekati™ from July 4 through July 12 and from August 4 through August 16
- In Antwerp from 7 to 12 September 2006 with the DO-27 diamonds during valuations by WWW
- At the DO-27 camp and visited the Yellowknife core logging facility between 18 and 24 March 2007
- At the Ekati™ plant from May 8 to 11, 2007 to check the plant and to be present at the beginning of processing
- Present at the Ekati™ test plant from May 15 to 18, with Howard Coopersmith to sort the diamonds from the 2007 bulk sample
- At the DO-27 exploration camp from 30 July to 6 August 2007, reviewing the core drilling program
- At the BHPB SVF facility in Yellowknife from 11 to 14 September 2007 organizing (grouping, sieving, etc.) the DO-27 diamonds for cleaning and, after cleaning, sieving the diamonds and putting them into sieve, grainer and carater classes for valuation export and valuation
- In Antwerp from 8 to 20 October 2007 with diamonds while they were being valued by WWW
- In Yellowknife between 3 and 9 May 2012 logging and sampling drill core from LD-2 and LD-3

Dr. Pell authored or co-authored Assessment Reports in 2004, 2006, 2007 and 2008 and a NI 43-101 Technical Report on the project in 2006.

2.4 Effective Dates

The effective date of the DO-27 Mineral Resource estimate is 7 August 2008.

The effective date of this report is 15 July 2014.

2.5 Information Sources and References

Information sources and other references are listed in Section 27 of this report.

2.6 Previous Technical Reports

The following technical reports have previously been filed on the Project:

- Pell, J., and Strickland, D., 2004, Technical Report on the Lac de Gras East Property; 15 September 2004, NI 43-101 Technical Report Prepared for Dunsmuir Ventures Ltd., 30 p.
- Coopersmith, H.G., 2005, Technical Report on the 2005 Program, DO-27 Kimberlite Pipe, WO Property, Northwest Territories, Canada, 16 November 2005, NI 43-101 Report Prepared for Peregrine Diamonds Ltd., 132 p. Modified December 6, 2005.
- Pell, J., and Coopersmith, H.G., 2006, Technical Report on the 2006 Program, DO-27 Kimberlite Pipe, WO Property, Northwest Territories, Canada; 6 December 2006, NI 43-101 Report Prepared for Peregrine Diamonds Ltd., 155 p.
- Coopersmith, H.G., and Pell, J., 2007, Technical Report on the 2007 program, DO-27 Kimberlite Pipe, WO Property, Northwest Territories, Canada; 17 December 2007, NI 43-101 Report Prepared for Peregrine Diamonds Ltd., 157 p.
- Eggleston, T.E. and Brisebois, K.R., 2008, Peregrine Diamonds Ltd. DO-27 Diamond Project Northwest Territories, Canada NI 43-101 Report; 7 August 2008, NI 43-101 Report prepared for Peregrine Diamonds Ltd., 119 p, revised 1 January 2009.

3.0 RELIANCE ON OTHER EXPERTS

AMEC and the Qualified Persons authoring this report have relied on other experts, who are not Qualified Persons, for information concerning legal, environmental, and political matters and diamond pricing. AMEC and the Qualified Persons authoring this report believe it is reasonable to rely on these experts and disclaim responsibility for information in the report provided by other experts as is allowed under Item 3 of Form 43-101F1 Technical Report.

3.1 Project Ownership, Tenure, Surface Rights, Property Agreements, Permitting, Royalties, Environmental and Social Licence.

The QPs have not independently reviewed Project ownership, mineral tenure, surface rights, royalties, property agreements, permitting, or environmental liabilities of the Project and the underlying property agreements. The QPs have fully relied upon, and disclaim responsibility for, information provided to AMEC by Peregrine Land Administrator David Willis in a letter to Ted Eggleston of AMEC entitled "Property Description and Joint Venture Summaries – LDG Project" dated 15 July 2014.

The information is used, as appropriate, in Section 1, Sections 4.2, 4.3, 4.4, 4.5, 4.6, 4.7 and 4.8 and Section 25 of the Report and in support of the Mineral Resource estimate in Section 14.

3.2 Diamond Grade and Valuation

AMEC relied on the diamond valuation and value models (part of Sections 14 and 24) reported by WWW in their 2007 report entitled "Valuation of Peregrine Lac de Gras Samples, October 2007". WWW are recognized international leaders in this field.

It is reasonable for the QPs to rely on WWW for this information because WWW is an internationally recognized independent diamond valuation and advisory service to diamond mining and exploration companies, governments of diamond producing countries and private diamond companies. WWW, through Diamonds International Canada (DICAN) Ltd, serves as the valuator for the Federal Government of Canada and the Ontario Government.

The diamond price information could not be verified by the QPs due to the proprietary nature of the diamond price book used for the valuation. Risk exists that the diamond price values obtained from WWW may differ from those achieved during commercial production since the valuation was based on an exploration-sized sample.

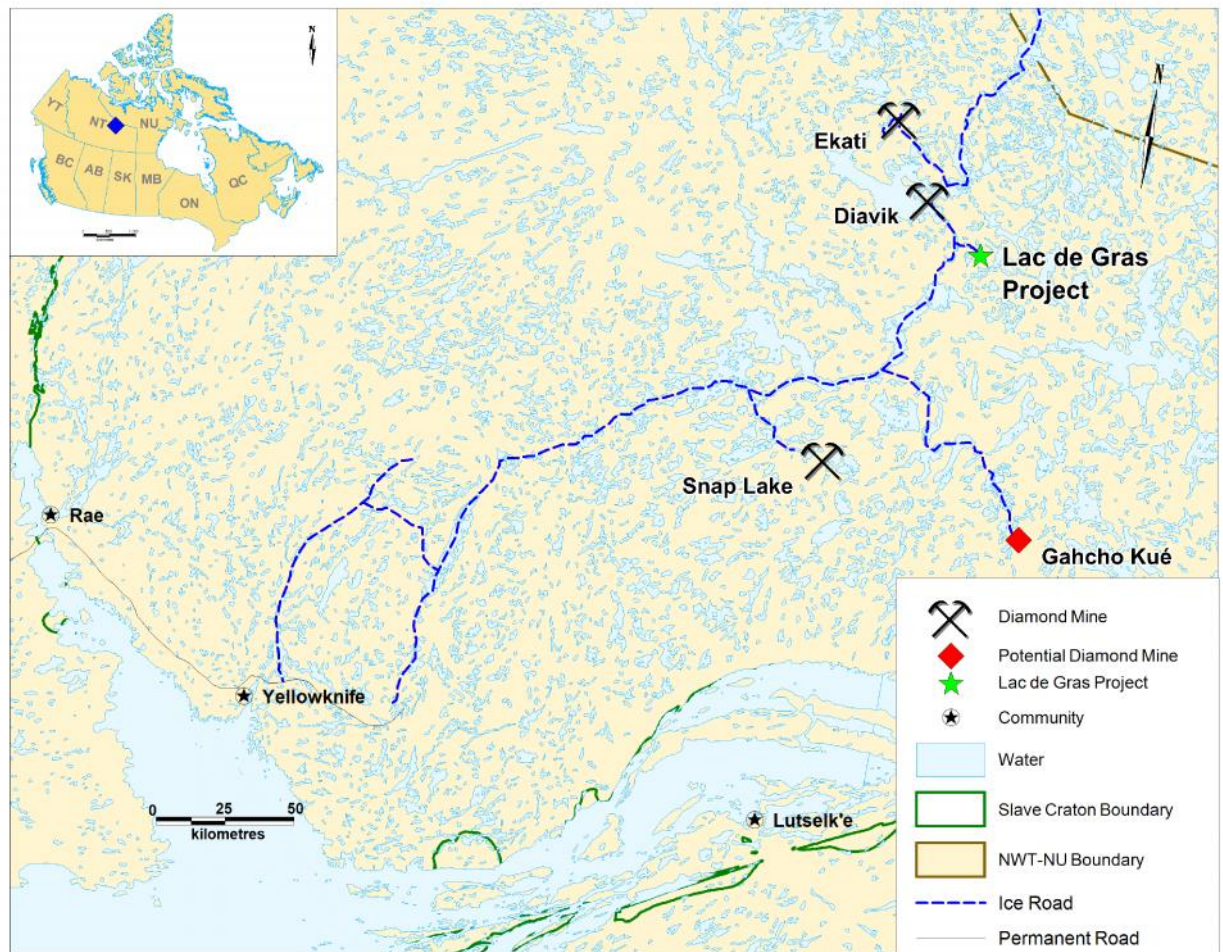
AMEC relied on Mr. M.M. (Tinus) Oosterveld for verification of modelled diamond grades (parts of Section 13.4) and reviews of diamond valuation models (parts of Section 14.3.2 and Section 24). His 2007 report entitled “DO-27 Kimberlite: Assessment of 2006 and 2007 Sampling Results”, summarizes the results of his work. AMEC considers it appropriate to rely on information provided by Mr. Oosterveld, because he is a professional mining engineer and is regarded as one of the leading authorities in diamond resource evaluation and diamond geostatistics. He has more than 30 years of experience in diamond mine development, including nearly a decade as Ore Evaluation Consultant to De Beers Consolidated Mines Limited (De Beers) and Anglo American plc, involved in evaluating all of De Beers’ diamond properties worldwide, and an additional 15 years of experience as an independent diamond resource consultant based in South Africa.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Property Location

The Project is located approximately 300 km north-northeast of the city of Yellowknife in the Northwest Territories, Canada to the southeast of the Diavik Diamond Mine (Figure 4-1), centred at approximately 64° 20' N latitude and 109° 50' W longitude.

Figure 4-1: General Location of the Lac de Gras Project (courtesy of Peregrine, 2014)



4.1 Mineral Title in the Northwest Territories

4.1.1 Mineral Title

Mining Regulations for the Government of the Northwest Territories came into effect on 1 April, 2014 as a result of the Northwest Territories Lands Act.

Under these regulations three types of tenure can be granted:

- **Prospecting Permits:** Prospecting permits are applied for and issued only once per year, on February 1. The areas are one quarter of a 1:50,000 scale National Topographic System map sheet and vary in size from 8,319 to 22,900 hectares. A prospecting permit has a fixed term of three years for areas south of 68°N, and five years for areas north of 68°N. Prospecting permits are not renewable. Any area of further interest to the holder must be converted to a mineral claim(s) prior to permit expiry provided the work requirements for the specified period have been completed.
- **Mineral Claims:** Ground staking with claim posts. Claims can be staked and issued year-round. Mineral claims may not exceed 1,250 ha in area and have a 10-year duration. If claims are to be maintained past this 10-year time period they need to be converted to mineral leases. There is no annual rental payment for a claim, but filing fees must be paid when work is filed and annual work requirements must be met. Filing fees amount to \$0.25/ha and annual work requirements are as follows:
 - \$10 per full or partial hectare in the claim during the two-year period following the day on which the claim is recorded
 - \$5 per full or partial hectare in the claim during each subsequent one-year period.

If all of the expenditure and work commitment is undertaken in Year 1, it can be reported for that year, and the claim will be taken to its ultimate anniversary date. No additional assessment reports are due. However, past the ultimate anniversary date, the claims would have to be converted to leases.

- **Mineral Leases:** Can only be issued after a claim has been staked and \$25.00/ha of work has been conducted and a boundary survey has been recorded. Application for conversion from a claim to a lease must be made a year prior to the expiry of the claim. Leases are granted for a 21-year term, and may be renewed for additional 21-year terms. Leases have an annual rental payment requirement which is \$2.50/ha during the first term and \$5.00/ha during each renewed term.

4.1.2 Mineral Royalties

Each fiscal year, the owner or operator of a mine must pay the Government of the Northwest Territories royalties on the value of the mine's output during that fiscal year in: a) an amount equal to the lesser of either 13% of the dollar value of the output of the mine, or b) the sum of the royalties payable as specified in Schedule 3 of the Northwest Territories Mining Regulations.

4.1.3 Project Ownership

The claims and leases are divided into three main groups; each with differing ownership arrangements:

- WO Property
- LDG Thelon Property
- LDG Peregrine Property.

4.1.4 The WO Property

The WO Property consists of the following eight leases: 4131 (SAS 1), 4132 (SAS 2), 4133 (SAS 3), 5267 (TT 1), 5265 (TT 2), 5268 (TT 3), 5270 (OW 19), and 5271 (OW 20). The combined lease area totals 5,816.55 ha (14,373.00 acres).

As at the most recent WO Property cash call notice of 29 May 2014, the ownership percentages were:

- Peregrine Diamonds Ltd. = 72.097%
- Archon Minerals Limited = 17.569%
- DHK Diamonds Inc. = 10.334% (DHK is a corporation owned by three companies Dentonia Resources Ltd., Cosigo Resources Ltd., Kettle River Resources)

Peregrine informed AMEC that this ownership breakdown is different to that registered with the Northwest Territories Mining Recorder, which shows the leases to be 100% in Peregrine's name. The differences are due to the changes that occur to ownership percentages with each cash call contribution subsequent to the original registration with the Northwest Territories Mining Recorder.

The WO Property has the following royalties payable in addition to the Northwest Territories provincial royalty requirements:

- Mantle Diamonds Canada Inc. has a 0.25% gross overriding royalty (GOR) that was purchased from Southern Era Diamonds Inc. in March 2009
- Aberex Minerals Ltd. has a 0.55% GOR
- 824567 Canada Limited has a 1.0% GOR that was purchased from Kennecott/Rio Tinto Exploration in December 2012.

4.1.5 LDG Thelon Property

The LDG Thelon Property consists of the following three leases: 5269 (OKI 1), 5263 (OKI 2), 5264 (OKI 3). The combined lease area totals 1,632.91 ha (4,035.00 acres).

As at the most recent LDG Thelon Property cash call notice of 10 June, 2014, the ownership percentages were:

- Peregrine Diamonds Ltd. = 70.54%
- Thelon Capital Ltd. 29.46%.

Peregrine informed AMEC that this ownership breakdown is different to that registered with the Northwest Mining Recorder, which shows the leases to be held 65% in the name of Peregrine, and 35% in Thelon's name. The differences are due to the changes that occur to ownership percentages with each cash call contribution subsequent to the original registration with the Northwest Territories Mining Recorder.

The LDG Thelon Property has the following royalty payable in addition to the Northwest Territories provincial royalty requirements:

- Claims staker Mackenzie Jaims has 4% GOR on all diamonds and 4% net smelter return (NSR) royalty on all metals.

4.1.6 LDG Peregrine Property

The LDG Peregrine Property consists of one lease: 5266 (CRW 5) and seven claims: MLT 1, MLT 2, MLT 3, MLT 4, MLT 5, MLT 6, MLT 8. The combined area totals 8,360.81 ha (20,660.00 acres).

The claims are 100% held by Peregrine. Peregrine informed AMEC that this ownership breakdown is the same as that registered with the Northwest Territories Mining Recorder, which shows the leases to be 100% in Peregrine's name.

The LDG Peregrine Property has the following royalties payable in addition to the Northwest Territories provincial royalty requirements:

- 1% GOR on diamonds to Thelon Capital
- 2% GOR on diamonds to a group consisting of Mike Magrum, Lane Dewar, Trevor Teed/974124 NWT Ltd.

4.1.7 Marketing

Peregrine holds 97.92% of the diamond marketing rights from any WO Property diamond production and 100% of the marketing rights from any LDG Peregrine Property diamond production. Currently, there is no marketing agreement in place for the LDG Thelon Property.

4.1.8 Operator

Peregrine is the operator of all work programs pertaining to the Project and all joint venture partners are to contribute to future programs or their respective interests will be subject to dilution according to the joint venture agreement.

4.2 Mineral Tenure

4.2.1 Project Mineral Tenure

Mineral claims are summarized in Table 4-1 and mineral lease holdings in Table 4-2. Information in the tables is current as of 11 July 2014. Ownership percentages as reported in the table are those recorded by the Northwest Mining Recorder; please refer to Section 4.3.2 for the current ownership percentages based on the various joint venture cash calls. Figure 4-2 is a tenure location plan. Kimberlite locations identified to date within the contiguous mineral leases tenure package are shown in Figure 4-3.

The contiguous claims package covers a total area of 7,315.71 ha. Mineral claims were staked on 3 May, 2004 and are current for a 10-year term.

The lease areas cover 8,494.35 ha in total. Annual rental fees are payable on each lease. The lease rental rate is \$2.50 per hectare per year and the aggregate annual rental for all leases is \$21,235.88.

Peregrine provided AMEC with the mineral tenure information. In order to check the accuracy of the data, AMEC reviewed tenure on the Northwest Territories Mineral Tenure Map at (accessed on 15 July 2014):

http://apps.geomatics.gov.nt.ca/Html5_SDW/Index.html?configBase=http://apps.geomatics.gov.nt.ca/Geocortex/Essentials/REST/sites/NWT_Mineral_Tenure_Webmap/viewers/NWT_Mineral_Tenure_Webmap/virtualdirectory/Resources/Config/Default



The information available on the mineral tenure map supports the information provided by Peregrine as to the claim numbering and ownership percentages reported by the Mining Recorder. However, Section 4.2 reports the current actual ownership percentages, which are based on the most recent cash calls for the various joint ventures; as noted earlier, these differ from those reported by the Mining Recorder.

Table 4-1: Contiguous Mineral Claims

Fid.	Project	Claim Number	Claim Name	Claim Area (Acres)	Claim Area (Hectares)	NTS	Owner	Registered Ownership Percentage
1	LDG Peregrine	F84801	MLT 1	2,582.50	1,045.10	76C05	Peregrine	100
2	LDG Peregrine	F84802	MLT 2	2,582.50	1,045.10	76C04&76C05	Peregrine	100
3	LDG Peregrine	F84803	MLT 3	2,582.50	1,045.10	76C04&76C05	Peregrine	100
4	LDG Peregrine	F84804	MLT 4	2,582.50	1,045.10	76C04&76C05	Peregrine	100
5	LDG Peregrine	F84805	MLT 5	2,582.50	1,045.10	76C04&76C05	Peregrine	100
6	LDG Peregrine	F84806	MLT 6	2,582.50	1,045.10	76C04&76C05	Peregrine	100
7	LDG Peregrine	F84808	MLT 8	2,582.50	1,045.10	76C05	Peregrine	100

Table 4-2: Mineral Lease Holdings

Fid.	Project	Lease Number	Claim Name	Lease Area (Acres)	Lease Area (Hectares)	Term Commencement	Renewal Date	NTS	Owner 1	Registered Ownership Percentage	Owner 2	Registered Ownership Percentage
1	LDG Peregrine	5266	CRW 5	2,582.50	1,044.90	21-Oct-2014	2032	76C05	Peregrine	100		
2	LDG Thelon	5269	OKI 1	1,264.00	511.52	21-Oct-2014	2032	76C05	Peregrine	65	Thelon	35
3	LDG Thelon	5263	OKI 2	708.00	286.52	21-Oct-2014	2032	76C05	Peregrine	65	Thelon	35
4	LDG Thelon	5264	OKI 3	2,063.00	834.87	21-Oct-2014	2032	76C05	Peregrine	65	Thelon	35
5	WO Property	5267	TT 1	2,519.00	1,019.40	21-Oct-2014	2032	76C05	Peregrine	100		
6	WO Property	5265	TT 2	2,599.00	1,051.78	21-Oct-2014	2032	76C05	Peregrine	100		
7	WO Property	5268	TT 3	274.00	110.88	21-Oct-2014	2032	76C05	Peregrine	100		
8	WO Property	5270	OW 19	2,730.00	1,104.79	21-Oct-2014	2032	76C05	Peregrine	100		
9	WO Property	5271	OW 20	2,544.00	1,029.52	21-Oct-2014	2032	76C05	Peregrine	100		
10	WO Property	4131	SAS 1	1,217.00	492.50	14-Feb-2014	2023	76C05	Peregrine	100		
11	WO Property	4132	SAS 2	1,558.00	630.50	14-Feb-2014	2023	76C05	Peregrine	100		
12	WO Property	4133	SAS 3	932.00	377.17	14-Feb-2014	2023	76C05	Peregrine	100		



Figure 4-2: Project Tenure Plan (courtesy of Peregrine, 2014)

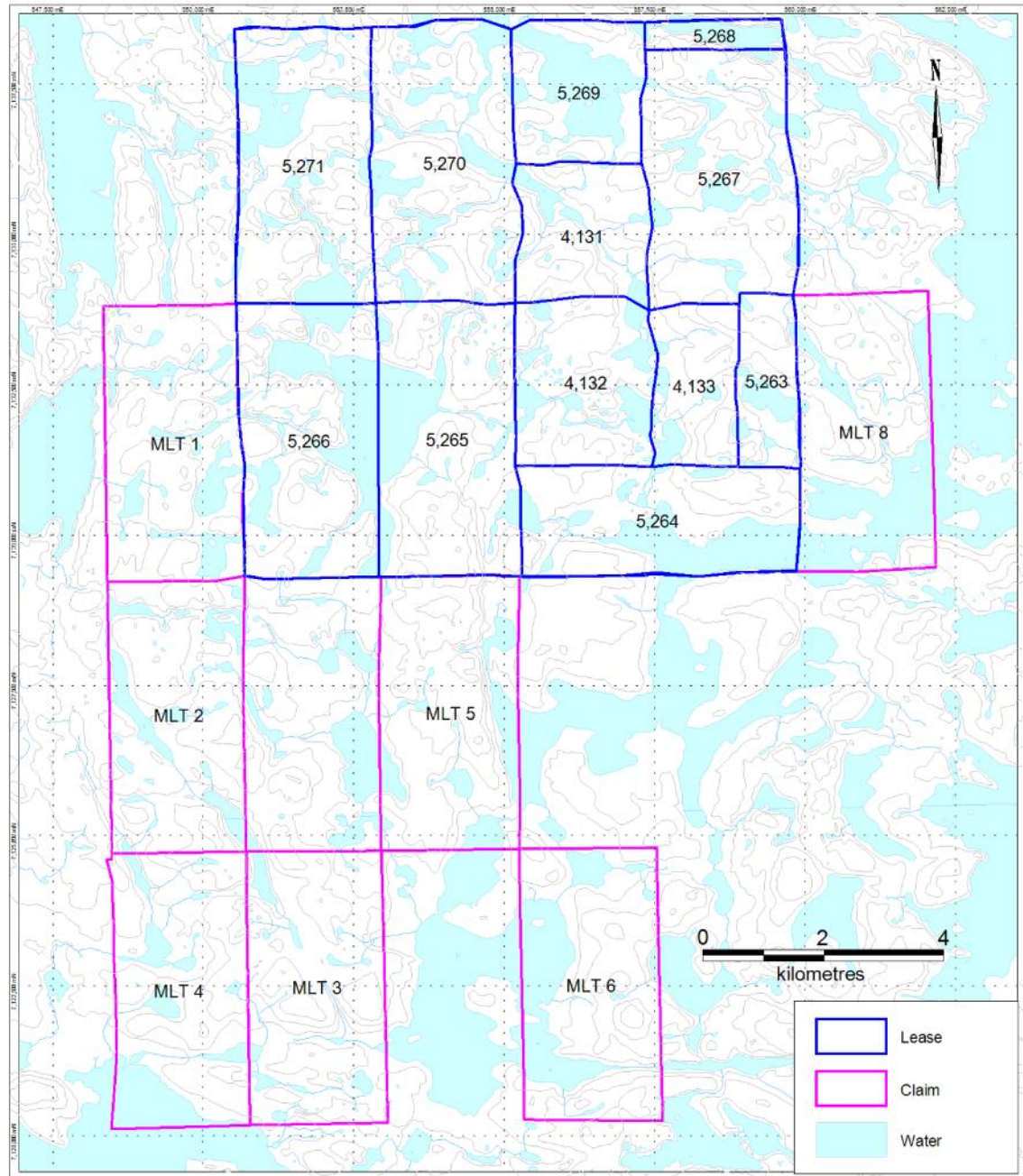
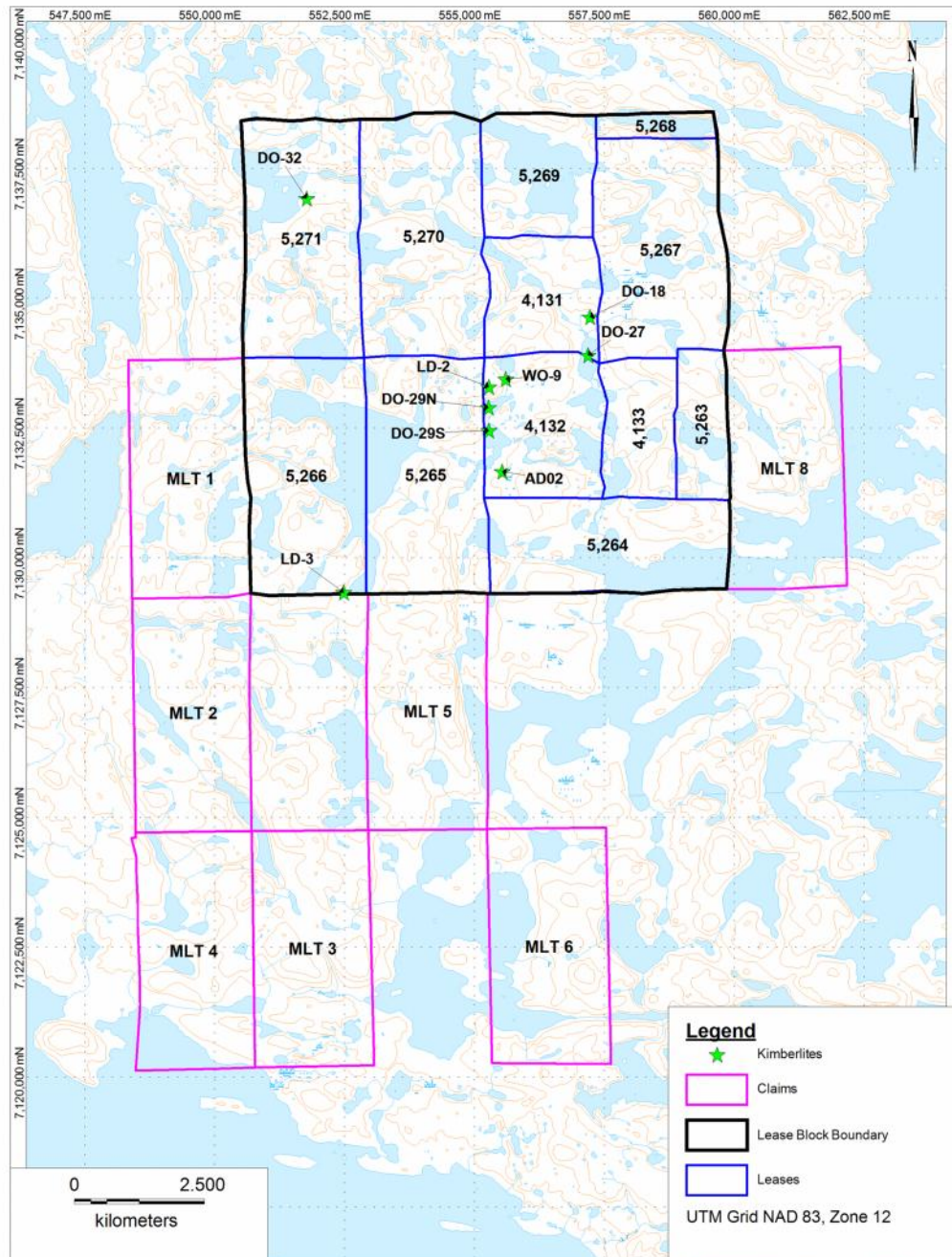




Figure 4-3: Mineral Tenure in Relation to Identified Kimberlites (courtesy of Peregrine, 2014)



4.3 Surface Rights

4.3.1 Surface Rights Administrative Jurisdictions

The Project occurs on Crown land.

The contiguous lease block falls on the administrative boundary between the Wek'eezhii Land and Water Board and the Mackenzie Valley Land and Water Board (Figure 4-4). Peregrine was advised that when such occurrences happen, the Mackenzie Valley Land and Water Board is the agency responsible for assigning the responsible agency.

4.3.2 Aboriginal Groups and First Nations

The contiguous mineral leases fall within four aboriginal traditional territories:

- Tłıch Government in Bechoko
- NWT Treaty 8 Tribal Corporation (Akaitcho) in Lutsel K'e
- NWT Metis Nation in Fort Smith
- North Slave Metis Alliance in Yellowknife

The Tłıch Government have a settled land claim, whereas the Akaitcho, NWT Metis Nation and North Slave Metis Alliance do not. The Tłıch, Akaitcho, and NWT Metis Nation are recognized groups by the Federal Government.

4.3.3 Land Use Permits

Since 2004 Peregrine has been issued five land/water use permits to complete exploration activities, including large diameter reverse circulation (RC) drilling. The following two permits are still active.

W2011C0005

The permit, issued by the Wek'eezhii Land and Water Board was granted on January 10, 2012 and expires January 9, 2017. A reclamation deposit totaling \$106,000 is on file with the Aboriginal Affairs and Northern Development Canada.

Activities authorized under this permit are (Figure 4-5):

- DO-27 Camp, currently inactive (64° 19' 28.488" lat -109° 48' 20.9124" long)
- Drill fines deposition area (64° 19' 36.714" lat and -109° 47' 55.482" long)

- Core drilling
- Large diameter reverse circulation drilling
- Winter road construction and maintenance
- Fuel storage (158 drums, 32,390 L)

MV2011C0005

The permit, issued by the Mackenzie Valley Land and Water Board was granted on April 28, 2011 and will expire on April 27, 2016. A reclamation deposit totaling \$9,000 is on file with the Aboriginal Affairs and Northern Development Canada.

Activities authorized under this permit are (Figure 4-6):

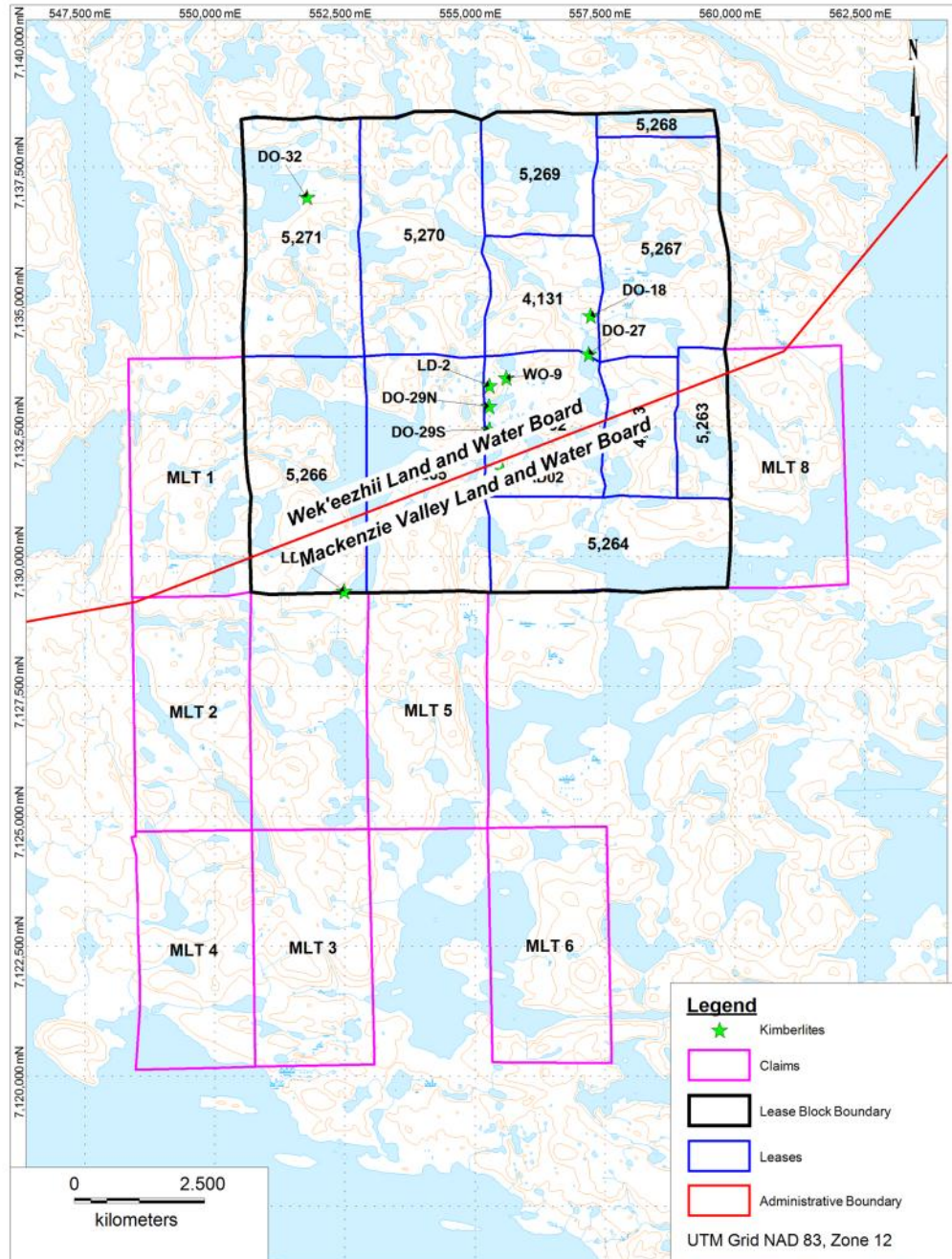
- Lac de Gras West Camp (demobilized)
- Core drilling.

Corporate Prospecting Licence

Peregrine holds Corporate Prospecting Licence N32705, which is a permit that needs to be renewed annually. The current permit expires March 31, 2015 and is issued by the Mining Recorder's Office of the Government of the Northwest Territories.



Figure 4-4: Surface Rights Administrative Boundaries (courtesy of Peregrine, 2014)



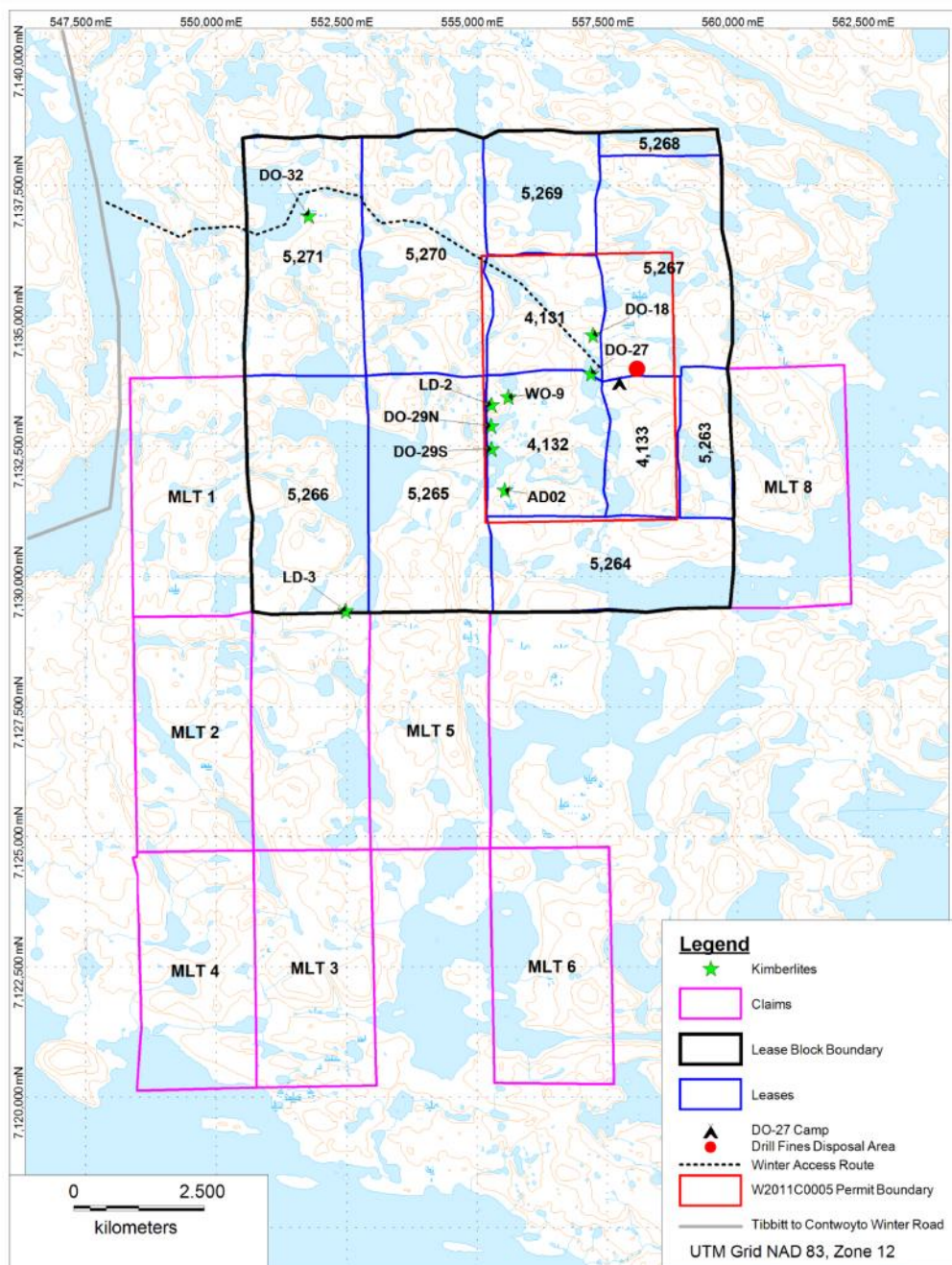
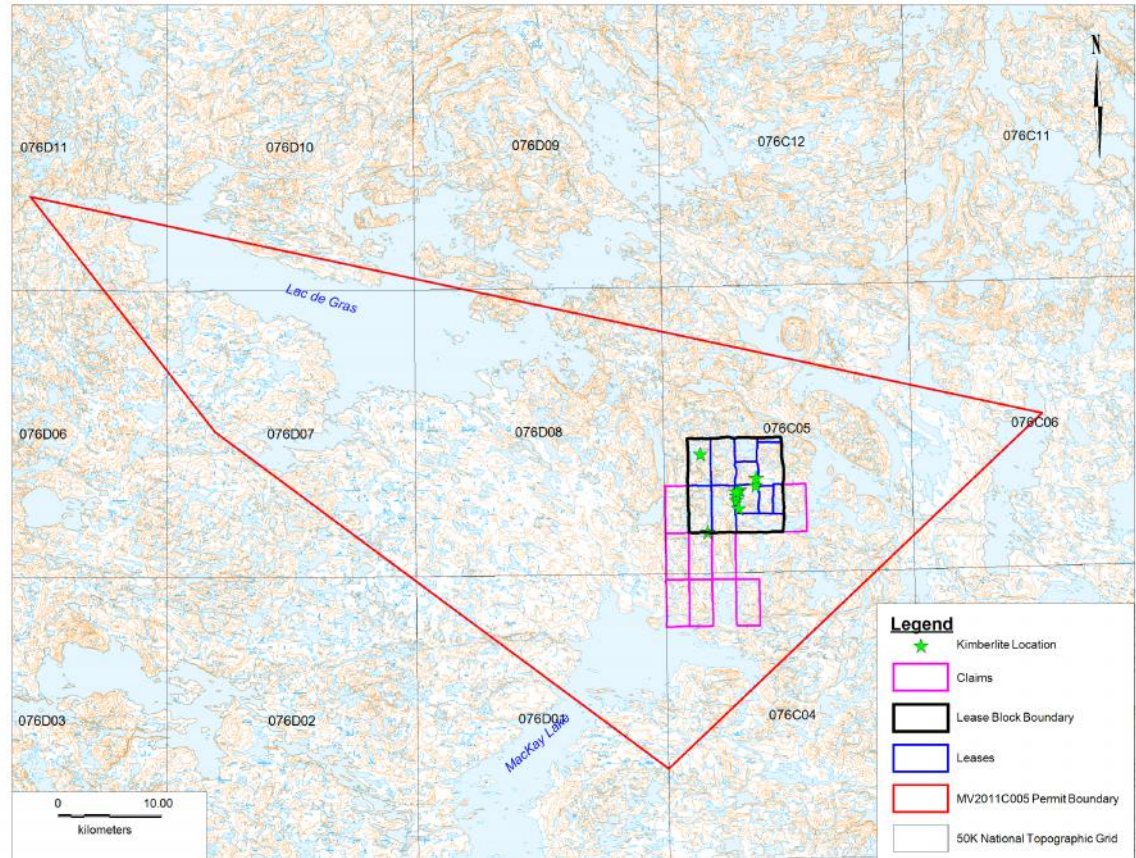




Figure 4-6: Location Plan, MV2011C0005 (courtesy of Peregrine, 2014)



4.4 Royalties and Encumbrances

Royalties levied by the Government of the Northwest Territories are outlined in Section 4.2. Individual royalty holders for each claims/lease group are discussed in Section 4.3.

4.5 Property Agreements

Peregrine has an exploration agreement with a sub-group of the Akaitcho, the Yellowknives Dene First Nation in Dettah. This agreement was signed on January 12, 2012 and is specific to the Yellowknives Dene in Dettah and not any of the other Akaitcho peoples.

4.6 Permits

Permits are discussed in Section 4.4.3. These permits allow Peregrine to explore on the claims and leases that they control. Two land use permits, MV2011C0005 and W2011C0005, authorizing exploration on the leases and claims are in good standing.

4.7 Potential Environmental Liabilities

There are no known environmental liabilities on the properties other than those expected from the past exploration activities and associated camp. Peregrine has reclaimed exploration disturbances on an ongoing basis, and has posted two bonds for a total amount of \$115,000 to cover any potential future reclamation costs.

The two land use permits were issued with applicable terms and conditions governing use of Crown lands. These permits are subject to periodic inspection by the Government of the Northwest Territories Resource Management Officer. The most recent inspection of MV2011C0005 was April 27th, 2014 and July 12, 2012 for W2011C0005.

The DO-27 camp and drill cuttings area are the only two known environmental liabilities currently associated with the Project area. On July 1, 2014 the DO-27 camp and drill cuttings area was visited and inspected by Peregrine Diamonds Ltd.'s Land Administrator David Willis and, in his opinion, were found to be in compliance with the terms and conditions set out in the W2011C0005 land use permit.

4.8 Risk Factors

Although mineral tenure and surface rights appear to be secure, risks to the Project include:

- Permit requirements may change or permits may be cancelled.
- Although the claims and leases are on Crown Land, First Nations issues may impact the Project.

4.9 Comments on Section 4

The AMEC QPs note:

- AMEC was provided with opinion from Peregrine that supports Peregrine's interpretation that the mining tenure is valid and sufficient to support declaration of

Mineral Resources. Tenure arises from a combination of mineral claims and mineral leases.

- AMEC reviewed the tenure from the publicly-available information recorded by the Northwest Territories Mining Recorder, and these support Peregrine's interpretation of valid tenure holdings.
- A number of different royalties are associated with the tenure holdings.
- Project ownership percentages provided by Peregrine differ slightly from those recorded by the Mining Recorder. This is because the ownership percentages have changed since the initial registration with the Mining Recorder, because of the variations in the cash contributions to work programs that are provided by each partner that subsequently affect the ownership. AMEC reviewed the most recent cash call data and considers that these documents support the current ownership percentages supplied by Peregrine.
- No formal surface rights are currently held; however, the claims and leases provide for reasonable surface access to perform the recommended work on the Project.
- Peregrine advised AMEC that future exploration-stage work programs can be performed with the permits currently held by Peregrine; additional permits would be required should exploitation be considered.
- Peregrine advised AMEC that the company is not aware of any other significant environmental, social, or permitting issues that would prevent any future exploitation.

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

5.1 Accessibility

The Project, which hosts a number of kimberlites including the DO-27 and DO-18 diamondiferous kimberlite pipes, is located approximately 300 km north-northeast of the city of Yellowknife, Northwest Territories (refer to Figure 4-1). The DO-27 and DO-18 pipes are located at approximately 64° 20' N latitude and 109° 50' W longitude within NTS sheet 76C/05. Access to the area is from Yellowknife, which is the main staging area for all operations in this region. Access is commonly via fixed wing aircraft equipped with wheels, floats, or skis, depending on the season. From approximately mid-January to mid-April access is also provided via a winter ice road which connects Yellowknife with the Lupin Gold Mine and the Diavik and Ekati Diamond Mines. This road passes within 11 km of the DO-27 kimberlite (Figure 4-3).

5.2 Climate

The Project is located within the Canadian Arctic tundra, or barren lands. For the majority of the year, the area is covered with ice and snow. Summer begins in June, when melting commences and by October winter has returned. Temperatures range from highs of about 25°C during the brief summer months, to winter lows of -45°C which are often magnified by strong, constant winds. Daylight varies from nearly 24 hours in the summer to only a few hours per day during the winter.

5.3 Local Resources and Infrastructure

Most necessary services can be obtained in Yellowknife. No services or permanent infrastructure are present in the area.

5.4 Physiography

The Project is approximately 90 km north of the tree-line in a muskeg dominated area and the main flora consist of flowering and berry producing plants, miniature arctic willows, grasses, moss and lichen. Caribou, wolves, foxes, wolverines, and grizzly bears are present in the region and arctic hare and ground squirrels are common. There is a wide variety of bird life and most lakes contain fish. Landforms, relief, and drainage are strongly influenced by several periods of glaciation. The terrain is generally low-lying and undulating with weak fluvial incision and is characterized by glacial features, resistant hills of granite and diabase outcrops, and numerous lakes.

DO-27 is located within a small stream-fed valley that contains a small lake (approximately 1 km²), informally referred to as Tli Kwi Cho Lake, below which lies most of the kimberlite pipe. The stream, which flows into Tli Kwi Cho Lake from the north, is intermittent with high volume flow during the summer, due to melt water and diminishing to a small trickle by fall. Tli Kwi Cho Lake has an average depth of approximately 4 metres and drains south into Thonokied Lake. DO-18 lies approximately 400 m north of DO-27, in a topographic bowl covered with typical tundra vegetation. Low granitic hills with sporadic frost heave outcrop and subcrop that have a maximum elevation of 30 m above lake level surround both pipes.

5.5 Sufficiency of Surface Rights

For the current and recommended exploration activities, potential processing plant sites, tailings and waste storage and disposal sites and other mining related issues are not relevant. However, sufficient water and appropriate facility sites appear to be present. Land use permits for the current and recommended program are in hand. These mining related issues were the subject of an evaluation by AMEC, and the results were discussed in a series of reports in 2007 and 2008 (AMEC Americas 2007a-i, 2008; Nuna Logistics, 2008; Kuchling, 2008).

5.6 Comments on Section 5

While remote, the Project is in a similar situation to several other diamond mines and exploration projects in the Northwest Territories. It has winter access by ice road and year-round access by air. Significant exploration and mining expertise exists in the region in spite of the harsh climate. The lack of local infrastructure is a hindrance, but with proper logistics, manageable. Surface rights are adequate to support mining at DO-27 and other localities if economic diamond concentrations can be discovered.

6.0 HISTORY

6.1 Ownership History

The claims and leases comprising the Project were originally part of the WO claim block, staked by representatives of the DHK consortium in February of 1992 following the announcement, by BHPB and DiaMet, in the fall of 1991 of the diamond discovery at Point Lake. DHK shareholders were Dentonia, 33%, Horseshoe Gold, 33%, and Kettle River, 33%. The claims were then optioned to Kennecott, SouthernEra, and Aber, who exercised the option, leaving DHK with a carried interest. Kennecott was operator and completed exploration work on the property and discovered six kimberlites: DO-18, DO-27, DO-29N, DO-29S, DO-32 & AD-02 (Doyle, 1994; 1995; 1996; 1997).

In 2000, BHPB signed an option to earn an interest in part of the Project area by flying a Falcon™ gravity survey and drilling targets. A seventh kimberlite, WO-9, was discovered. Kennecott agreed to exchange their 40% working interest in the property for a 9.9% interest in DHK.

In 2002, the ownership was reorganised such that the partners and holdings were as follows:

- BHPB - 38.475%
- DHK - 28.8%
- Archon - 16.45%
- Aber – 9.75%
- SouthernEra – 6.5%

Kennecott retained a 1% GOR and Aber had a 0.3% GOR.

Between 2000 and 2004, some of the original claims were allowed to lapse and were acquired by other operators, including Thelon and Dunsmuir. In 2004, Peregrine acquired BHPB's interest in the remaining claims from the original WO block (which contained the OW 19, OW 20 and TT 1 to 3 claims and SAS 1 to 3 leases) and Dunsmuir entered into options to earn 100% interest in the MLT 1 to 6 and MLT 8 claims from a private prospecting syndicate and to earn 65% interest in the CRW 5, and OKI 1 to 3 claims from Thelon. In 2006, Dunsmuir and Peregrine merged and the claims were re-united.

Details on current ownership are listed in Sections 1 and 4.

6.2 Historical Exploration

Historical exploration on the claims (Coopersmith, 1994a; 1994b; 1995; 1998; 2005; Doyle, 1994; 1995; 1996; 1997; Doyle et al., 1994; Griffin, 1994; Kaminsky and Khachatryan-Blinova, 1999; Kivi, 1998; Pell, et al., 2005; Pell and Coopersmith, 2005; Scott-Smith, 1995) is summarized below.

6.2.1 Geological Mapping

1996

Coloured air photography surveys at 1:10,000 and 1:20,000 were flown over parts of the claims and used to construct surficial geology maps. This work highlighted the complicated nature of surficial deposits on the Project.

6.2.2 Geochemical Sampling

1992

A regional esker, stream, beach and till sampling program was completed in 1992. Figure 6-1 shows the locations of the pre-Peregrine samples collected in the area.

1993

Till sampling was completed during the summer of 1993, to give the property a sample coverage of one sample per 2 km². Sample density in the northeastern part of the property was one sample per 1 km² and the coverage around DO-27/18 was one per 500 m².

In August 1993 a helicopter-supported till sampling program was undertaken to cover the Project.

1994

Follow-up till sampling was completed in areas with kimberlite indicator minerals, increasing the sample density to one sample per km². In some areas, samples with 500 m spacing were collected.

1996

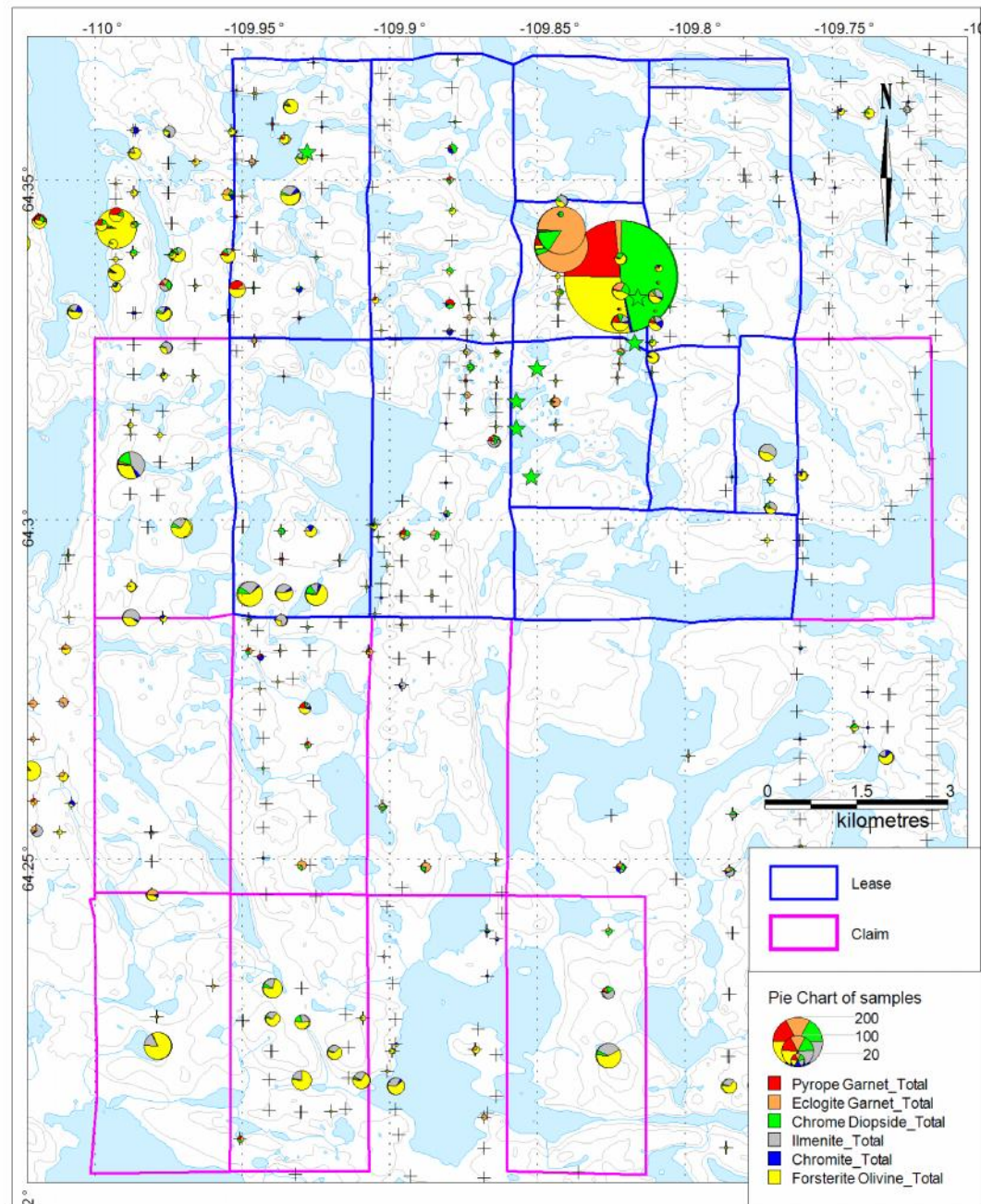
Additional till samples (68) were collected for heavy mineral analysis.



Comments on Section 6

Pre-Peregrine till sampling was useful in locating areas where kimberlites were hidden. Actual discovery generally relied on geophysics to locate kimberlites that typically occur beneath lakes or glacial cover.

Figure 6-1: Pre-Peregrine Sample Locations (from Armstrong and Chatman, 2001 and Armstrong et al., 2004)



6.2.3 Geophysics

1992

A helicopter-borne magnetic/electromagnetic/VLF-EM survey with 200 m line spacing and 30 m sensor height was conducted over the WO claim block by Dighem Surveys and Processing Inc. and DO-27 and DO-18 were identified as possible kimberlites.

1993

The following work was completed:

- March - A ground magnetic survey was conducted to delineate the airborne anomaly at DO-27 and DO-18.
- April - A second helicopter-borne magnetic/electromagnetic/VLF-EM survey with 100 m line spacing was conducted by Geonex Aerodat in an attempt to identify additional anomalies in the area of DO-27/DO-18.
- May - A nanoTEM™ geophysical survey was conducted on DO-27.
- June 1993 - The ground magnetic survey of DO-27 was extended and infill lines were completed.
- July 1993 - A ground gravity survey was completed over DO-18 and the area between DO-18 and DO-27.

In 1993 exploration season a total of 23 ground magnetometer surveys (296.7 line km) were completed.

1994

During the 1994 exploration season, 41 ground magnetic surveys, and 12 nanoTEM™ surveys were completed over exploration targets.

1995

Two ground magnetic surveys and one transient EM survey were completed over exploration targets.

1996

One ground magnetic survey and eight nanoTEM™ surveys were completed on exploration targets.

2001

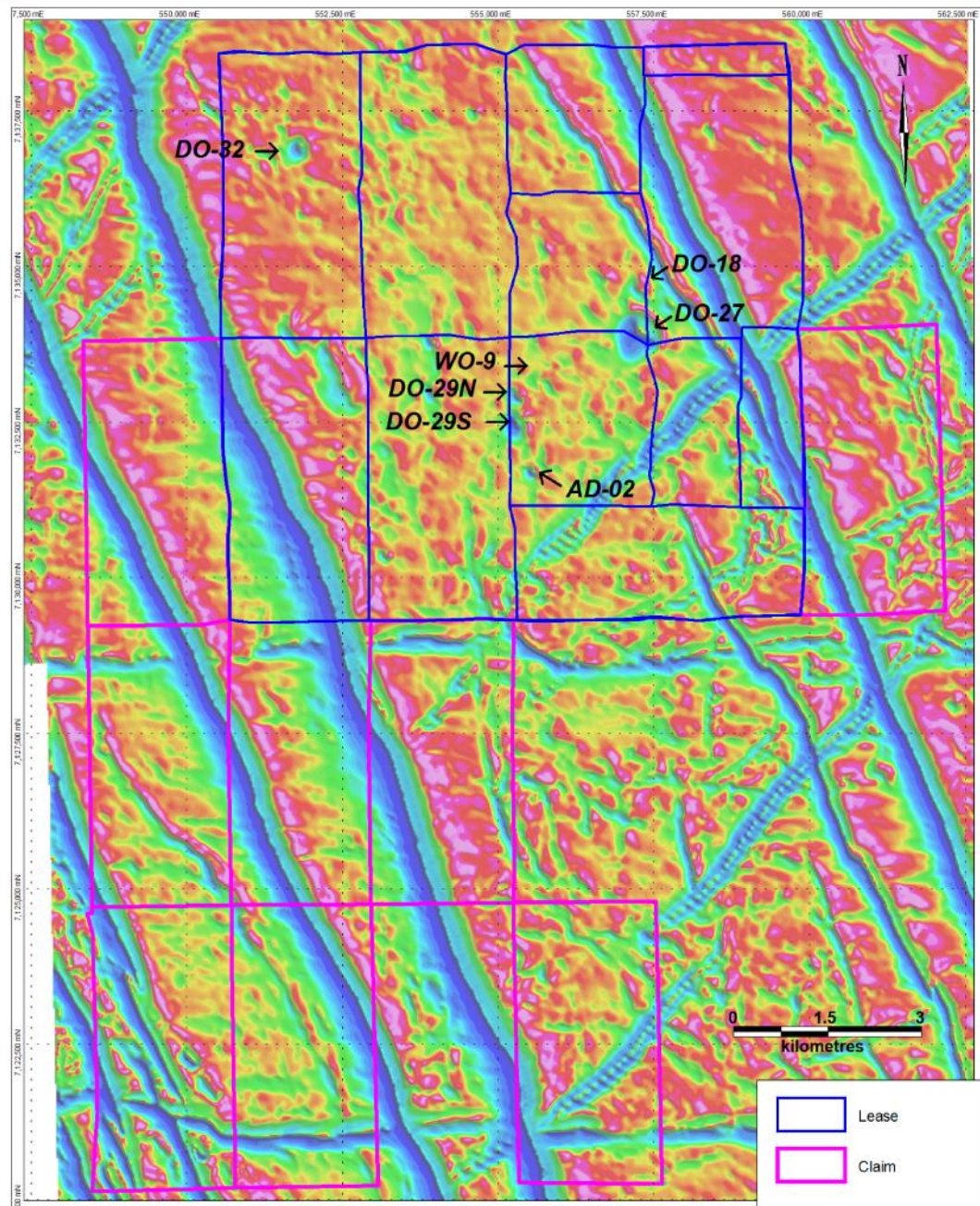
Falcon™ airborne gravity gradiometry survey was flown. Figure 6-2 shows an example of the results of a Falcon™ survey.

2004

A DIGHEM™ magnetometer/EM survey was flown over the OKI 1, OKI 2, and OKI 3 claims by Thelon.



Figure 6-2: Example of 2001 Falcon™ Results with Kimberlites Discovered (courtesy of Peregrine, 2014)



6.2.4 Kimberlite Discovery

Five kimberlites, AD-02, DO-18, DO-27, DO-29 and DO-32 were discovered in 1993 by exploration drill testing of geophysical anomalies. In 1998, further drilling at DO-29 proved it to be two bodies (DO-29N and DO-29S), bringing the total number of kimberlites in the Project area to six. Drilling of a FalconTM airborne gravity anomaly in 2002 intersected kimberlite the seventh kimberlite in the Project area, WO-09.

6.2.5 Underground Exploration

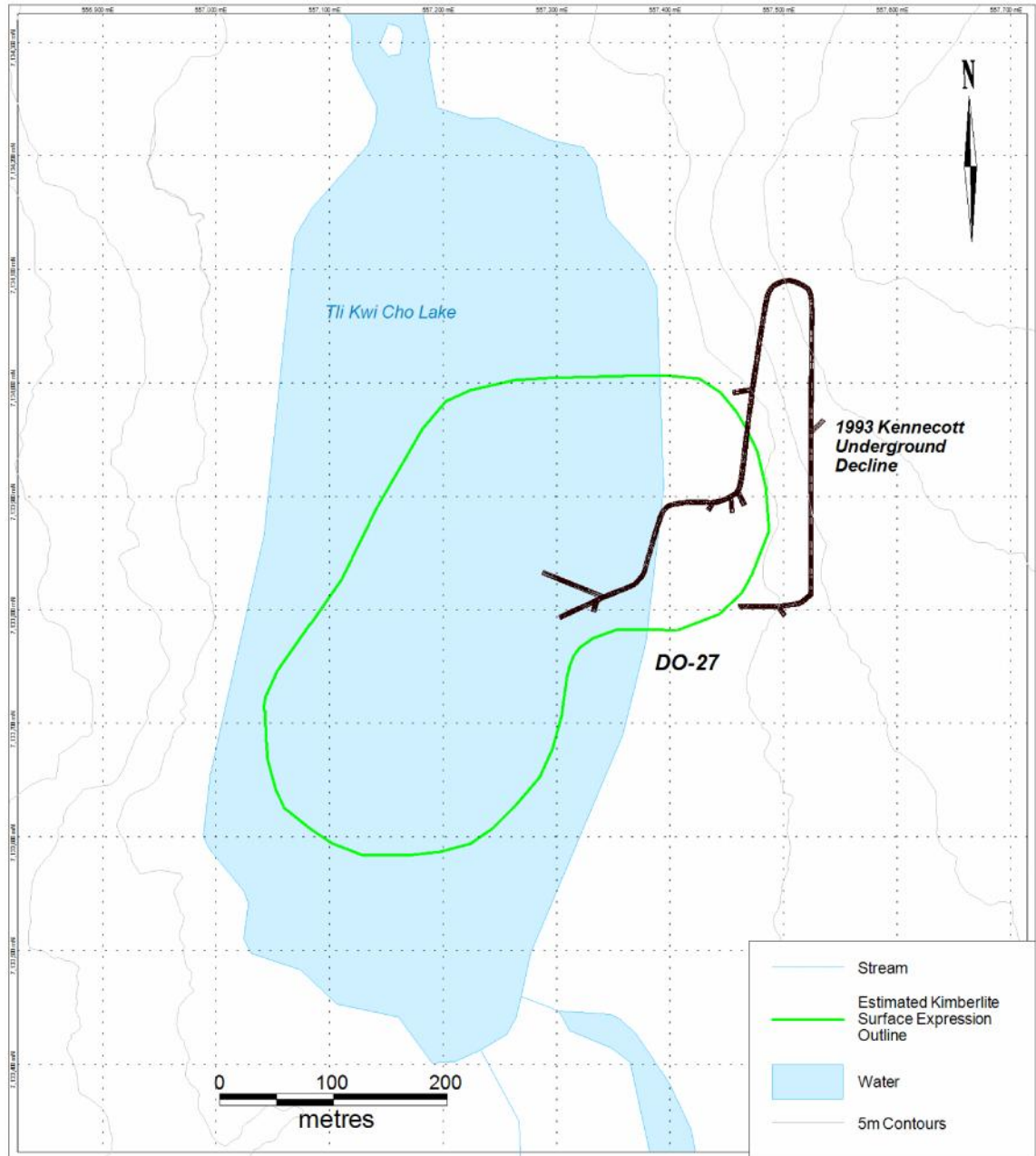
In October 1993, work commenced on construction of a decline to extract a 5,000 t bulk sample from DO-27. That work was completed in April 1994. Geotechnical problems prevented intersection of the main pipe. Figure 6-3 shows the location of the decline.

6.2.6 Petrology, Mineralogy, and Research Studies

Scientific studies completed on various aspects of DO-27 and DO-18, include:

- A study of the geology and petrology of DO-18 and DO-27 (Scott-Smith, 1995)
- An infrared study of diamonds from the DO-27 kimberlite pipe was completed in 1999 (Kaminsky and Khachatryan-Blinova, 1999)
- A study of the diamonds from DO-27 (Davies, et al., 1999, 2003)
- A study of xenoliths from DO-27 and DO-18 (Pearson et al., 1999)
- A study of the geology and emplacement history of DO-27 & DO-18 (Doyle et al., 1999)

Figure 6-3: 1993 Kennecott Exploration Decline (courtesy of Peregrine, 2014)



7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

7.1.1 Regional Bedrock Geology

The Project lies within the Slave Structural Province of the Northwest Territories, northern Canada, which is an Archean segment of the North American Craton that covers 213,000 km². It is composed of granites, gneisses, and supracrustal rocks. The Slave Province is a classical setting for diamondiferous kimberlites: a stable Archean craton with, as suggested by seismic tomography, a cool mantle root (Anderson et al., 1992).

Sialic basement remnants are well documented in the western part of the Slave Province and include some of the oldest known rocks in the world, the Acasta gneisses, which have been dated at 4.0 Ga (Bowring and Housch, 1995). Metasedimentary and subordinate metavolcanic rocks of the Yellowknife Supergroup, deposited mainly between 2.71 and 2.61 Ga, dominate the supracrustal sequences. Syn- to post-volcanic granitoid plutons cover approximately 65% of the Slave (Padgham and Fyson, 1992). Three main intrusive suites have been recognized: a synvolcanic suite consisting of 2.7 to 2.65 Ga trondhjemites and diorites; syndeformational (2.62 to 2.59 Ga) trondhjemites and hornblende-biotite monzodiorites through to granodiorites; and post-deformational (2.59 to 2.58 Ga) two-mica granites and biotite granites.

The Slave Province is subdivided isotopically into an eastern and a western domain. Lead isotopic compositions for galena from volcanogenic massive sulphides, syn-volcanic veins, and breccias are characterized by high ²⁰⁷Pb/²⁰⁴Pb ratios in the western part of the Slave Province and by low ²⁰⁷Pb/²⁰⁴Pb ratios in the eastern Slave. The high ²⁰⁷Pb/²⁰⁴Pb ratios west of the boundary are interpreted to reflect derivation of a significant component of lead from an ancient upper crustal source, whereas the low ²⁰⁷Pb/²⁰⁴Pb ratios east of the boundary suggests derivation from a mantle or juvenile crustal source (Thorpe et al., 1992). Neodymium isotopic studies of supracrustal and granitoid rocks in the Slave Province support this interpretation.

The isotopic subdivision of the Slave Province is supported by the observation that Mesoarchean granitic and gneissic rocks with zircon U-Pb dates older than the Yellowknife Supergroup sequences have only been identified in the western part of the province (Bleeker and Davis, 1999) and that quartz arenites of circa 2.8 Ga and other supracrustal rocks older than the Yellowknife Supergroup occur only in the western domain. Additional support for a distinct difference between the eastern and western

Slave Province comes from magnetotelluric studies in the Slave, which indicate, among other things, that the lithosphere beneath the western Slave Province is laterally homogeneous, thicker and more resistive than lithosphere to the east (Jones and Ferguson, 1997; Jones et al., 1997). As well, the western Slave Province shows no conducting lower crust, which is in contrast to all other Archean cratons, such as the Superior, Kaapvaal and Siberian cratons (Jones and Ferguson, 1997).

Kusky (1989) first suggested that the eastern and western parts of the Slave Province represented separate cratons that were accreted during the Archean along an east dipping subduction zone. Kusky (1989) termed the older, western part of the Slave the Anton Terrane and the eastern Slave Province, the Contwoyto Terrane and Hackett River Arc. Current workers (e.g. Bleeker and Davis, 1999) support these general subdivisions but use the terms Central and Northwestern Slave Basement Complex for the western Slave Province instead of Anton Complex, and Eastern Slave Province for the Contwoyto and Hackett terranes. Recent lithoprobe studies support the accretion concept and suggest that, near surface, the main suture is west-dipping with the western Slave Province (Central Slave Basement Complex) thrust over the Eastern Slave Province. In the lower crust and upper mantle, east-dipping reflectors delineate a coeval subduction zone and an accretionary wedge with the Eastern Slave Province forming an indentation into the western Slave Province (van der Velden and Cook, 2002).

Four swarms of Proterozoic diabase dykes cut the older units: the dominant north-northwest trending (330°) Mackenzie swarm (1.27 Ga); the northerly trending (010°) Lac de Gras swarm (2.02 Ga); the east trending MacKay dykes (2.21 Ga); and the northeast trending Malley dykes (2.23 Ga) (LeCheminant and van Breeman, 1994).

During the Late Proterozoic, terrestrial sediments were deposited unconformably on top of the craton in the Kilohigok Basin in the northern part of the Slave Province. This basin is thought to have formed in response to late Proterozoic compression. From the Late Proterozoic until the Cretaceous, the craton appears to have been relatively quiescent.

During the Paleozoic the Slave Province must have been inundated by marine conditions and Paleozoic carbonates were deposited at least in the south-western Slave and the north central Slave Province. In the Cretaceous, the area was covered by an inland sea that deposited shales and other fine grained marine sediments into temperate waters (Doyle et al., 1999).

Kimberlites intrude granites, supracrustal rocks and, in some cases, diabase dykes (Pell, 1995, 1997) in both the eastern and western domains of the Slave Province. A

number of differing ages of emplacement have been determined for the kimberlites in the Slave Craton. In the central part of the central Slave Craton around Lac de Gras kimberlites range from 45 to 75 Ma; however, the ages are not uniformly distributed within this range and four episodic periods of emplacement can be identified at ~47 Ma, ~51-55 Ma, ~58-61 Ma and ~71-75 Ma. In the southern part of the Central Slave Craton, kimberlite ages of 522 to 542 Ma have been determined. In the northern part of the Central Slave Craton (and on Victoria Island), Jurassic (circa 173 Ma) and Permian (256 to 286 Ma) aged kimberlites have been found. In the Western Slave Craton, kimberlites of circa 440 Ma (ranging from 435 to 462 Ma) are present (Creaser et al., 2003; Heaman et al., 2003).

To date, all economic and near economic kimberlites, including those at Ekati, Diavik, Gahcho Kué, and Jericho are located in the eastern Slave Province. The Snap Lake kimberlite is located near the boundary of the two terranes, but east of the Thorpe et al. (1992) Pb line.

7.1.2 Regional Surficial Geology

Subsequent to kimberlite emplacement, the area was covered by the Laurentide ice sheet during the Late Wisconsinan glaciation, which climaxed about 20,000 years before present (B.P.) and is believed to have retreated about 9,000 years ago. Local and regional ice flow patterns show considerable variation and in some areas there appear to have been at least three ice movement directions (Ward et al., 1996; Dredge et al., 1994).

Till is the most prominent surficial sediment type in the Slave Geological Province. At a regional scale, till can be divided into thin veneers, blanket deposits as thick as 10 m that include drumlins, and hummocky till as much as 30 m thick (Dredge et al., 1999). Dredge et al. (1994) recognized only one till sheet formed by several glacial advances. Three dominant directions were identified, which from oldest to youngest are: southwest, west, and west to northwest.

Glaciofluvial deposits, eskers, and outwash plains, are also present in the Slave Province. In the Lac de Gras area, eskers are mainly west and northwest trending (Dredge et al., 1994; 1999).

7.2 Project Geology

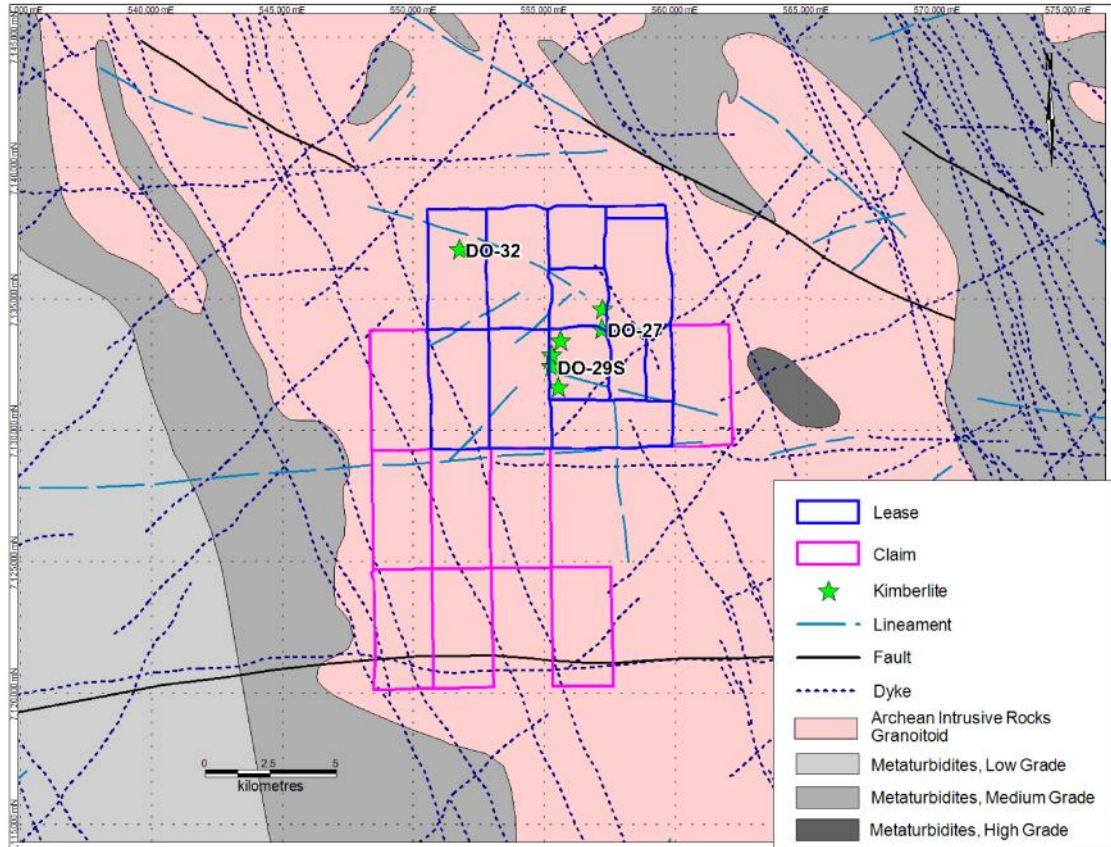
There is one major rock type on the property (Figure 7-1), two-mica post-deformational granite. All of the kimberlites discovered on the property, including DO-27 and DO-18

intrude these granite bodies (Doyle et al., 1994). Medium and high-grade Archean metaturbidites occur both to the east and west of the Project area (Stubley, 2005).

On the Project, glacial features including crescentic and lunate fractures, striae, and grooves indicate that the most recent ice direction was 290 to 295°. Locally, in the northern part of the area, an older ice direction of 230° was noted, and appeared to be crosscut by the younger 290° glaciation (Doyle et al., 1994). Glacial tills, with characteristic polygonal mudboils and frost heave granitic sub-crop dominate the area around DO-27 and DO-18. A number of eskers are present in the area and can be traced for approximately 30 km until they join a major east-west trending trunk esker.

DO-27 does not outcrop; it is overlain by 23 to 50 m of till consisting of angular granitic boulders, gravel, sand, silt, and clay, and is mostly covered by Tli Kwi Cho Lake with an average depth of approximately 4 m and is approximately 1 km² in size. Till thickness at DO-18 is between five and 20 metres.

Figure 7-1: Geology of the Lac de Gras Project (after Stubley, 2005)



7.2.1 Geology of DO-27

Core holes drilled into DO-27 in 2005 through 2007 were logged in detail by Harder (Harder, 2006a, b, 2007a, b, 2008b). The content presented in this section is based on the work of Harder (2006a, b, 2007a, b, 2008a, b) and Harder et al., (2006, 2008).

The geology of DO-27 comprises four main rock types and variations thereof: KIMB-1, KIMB-2, KIMB-3, and KIMB-P which are described below.

KIMB-1 is pyroclastic kimberlite (PK) that is the dominant infill of the DO-27 pipe (KIMB-1, 1b, 1c, Figure 7-2) and is commonly light to medium green in colour. It is extremely altered and the upper 100 m generally displays extremely poor mineral and textural preservation. This lack of preservation is most notable towards the centre of the pipe, with preservation improving towards the margins. Within the poorly-

preserved kimberlite, less altered material is commonly preserved as irregular layers or lenses and as rims around granite xenoliths. Alteration of olivine grains is also variable; olivine grains in the centre of the pipe are highly serpentinized, but become increasingly fresh towards the pipe margin and with depth. KIMB-1 is clast-supported, moderately well-packed, and is dominated by single olivine grains over juvenile lapilli, comprising approximately 60-70% olivine. It is very homogeneous in grain size, consisting of fine to medium-size grains (0.5-5 mm), with some intervals containing up to approximately 5% coarse grains (5-10 mm). No distinct bedding is evident and only very subtle grain size variations are observed, suggesting that pyroclastic air fall is the dominant deposition process involved in infilling of the DO-27 pipe. Juvenile lapilli comprise <10% and are generally highly altered and mineralogy is very difficult to distinguish. These lapilli typically contain approximately 20% olivine macrocrysts (> 0.5 mm) and 20% finer-grained olivines, some of which are clearly phenocrysts. The groundmass is extremely fine-grained, and the only minerals that can be identified are very fine-grained, scattered oxides (likely spinel), which are also frequently altered. There are no obvious variations in the types of juvenile lapilli observed. Granite xenoliths are most common towards the centre of the pipe and shale xenoliths most common towards the pipe margins, but neither comprises more than 5% of the rock.

The main DO-27 pipe is asymmetrical in shape, with a steep western margin and a shallower eastern margin in the northeastern part of the pipe. In general, KIMB-1 is the main component of both areas; however, two visually distinct, sub-units KIMB-1b and 1c (Figure 7-2) occur in the northeastern part of the pipe and comprise, respectively, PK interlayered with mud-rich PK, and PK with a slightly higher abundance of altered xenoliths giving it a spotted appearance.

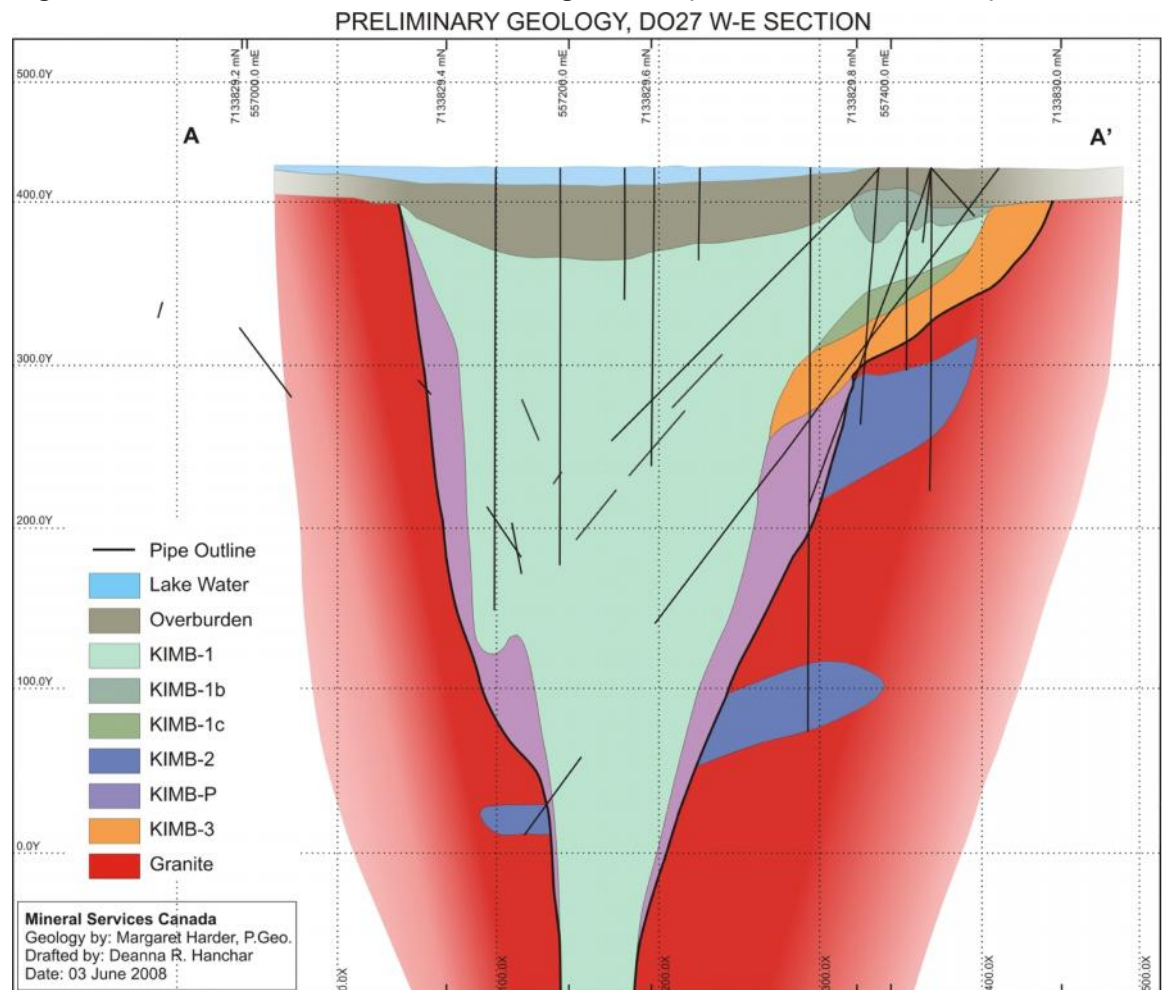
KIMB-2 is interpreted to be magmatic (coherent) in origin and to comprise a complex sequence of pre-eruptive intrusive sills, post-eruptive intrusions along pipe contacts, and possible post-eruptive intrusions into crater material. It contains variable amounts of country rock dilution, generally >15% white to light green altered granitic clasts, and is variably altered. Commonly, it consists of a brownish to greenish kimberlite matrix with fresh, coarse-grained olivine macrocrysts, set in a fine-grained crystalline groundmass that is comprised predominantly of phlogopite, opaque minerals, monticellite, and carbonate. Three subdivisions have been recognized: KIMB-2a with >15% country rock xenoliths; KIMB-2b with <15% country rock xenoliths; and, KIMB-2c, a kimberlite-granite microbreccia that may be volcanoclastic in origin.

KIMB-3 is a complex unit of volcanoclastic material, likely resedimented kimberlite that contains several sub-divisions which cannot always be correlated between drill holes. It is present in low volume and is restricted in extent, being present only beneath KIMB-1 in the northeast lobe of DO-27, at the crater margin. It is variable in colour

from green to black, and highly variable in grain size, sorting, and xenolith content, with some units containing large granite blocks up to 2 m in size. Bedding can be common and locally, very well bedded layers are present. KIMB-3 is generally fresher than KIMB-1 and is considered to be a remnant of early pipe infill cut by the later KIMB-1-forming eruption.

KIMB-P is volcanoclastic, possibly resedimented, kimberlite infilling the DO-27 pipe which cannot be further subdivided into KIMB-1 or KIMB-3. It is present in low volumes at the pipe margins in many areas of the kimberlite. It contains variable amounts of dilution, and can have 15% mud as xenoliths and within the matrix. It is generally fresher than KIMB-1 and often contains fresh olivine macrocrysts.

Figure 7-2: East-West Cross Section through DO-27 (from Harder et al., 2008)



7.2.2 Mineralization

Mineralization on the Project consists of kimberlite intrusions containing diamonds. Nine kimberlite bodies were discovered on the Project between 1993 and 2012; however, DO-27 and DO-18 are the most significantly mineralized and best explored.

7.3 Comments on Section 7

The geology of the region and DO-27 is sufficiently well understood to support exploration in the Project and resource estimation and any future mine planning at DO-27.

8.0 DEPOSIT TYPES

Diamonds are the high-pressure form of carbon and are produced deep within the earth's mantle, more than 150 km beneath the surface. Diamonds occur in primary (hard rock) and secondary (alluvial and marine placer) deposits. Although diamonds can be found in rocks as varied as high-pressure metamorphic garnet-biotite gneisses and meteorites, the only economically significant primary source rocks known to date are kimberlites and olivine lamproites. Both of these rock types form as magmas deep in the mantle and rapidly ascend through the mantle and crust, physically incorporating diamonds from mantle source rocks along the way. It must be stressed that diamonds do not form in the kimberlite or lamproite; they are formed in the mantle transported to a level within the earth's crust where we can access them by these magmas.

Kimberlites are volatile-rich, potassic ultrabasic rocks that commonly exhibit a distinctive inequigranular texture resulting from the presence of macrocrysts (and sometimes megacrysts and xenoliths) set in a fine grained matrix. Megacryst and macrocryst assemblages in kimberlites include anhedral crystals of olivine, magnesian ilmenite, pyrope garnet, phlogopite, Ti-poor chromite, diopside, and enstatite. Some of these phases may be xenocrystic in origin. Matrix minerals include microphenocrysts of olivine and one or more of: monticellite, perovskite, spinel, phlogopite, apatite, and primary carbonate and serpentine (Mitchell, 1986 and Pell, 1998a). Lamproites are peralkaline and typically ultrapotassic (6 to 8% K₂O). They are characterized by the presence of one or more of the following primary phenocryst and/or groundmass constituents: forsteritic olivine; Ti-rich, Al-poor phlogopite and tetraferriphlogopite; Fe-rich leucite; Ti, K-richrichterite; diopside; and Fe-rich sanidine. Minor and accessory phases include priderite, apatite, wadeite, perovskite, spinel, ilmenite, armalcolite, shcherbakovite, and jeppeite. Glass and mantle derived xenocrysts of olivine, pyrope garnet and chromite may also be present (Mitchell and Bergman, 1991 and Pell, 1998b).

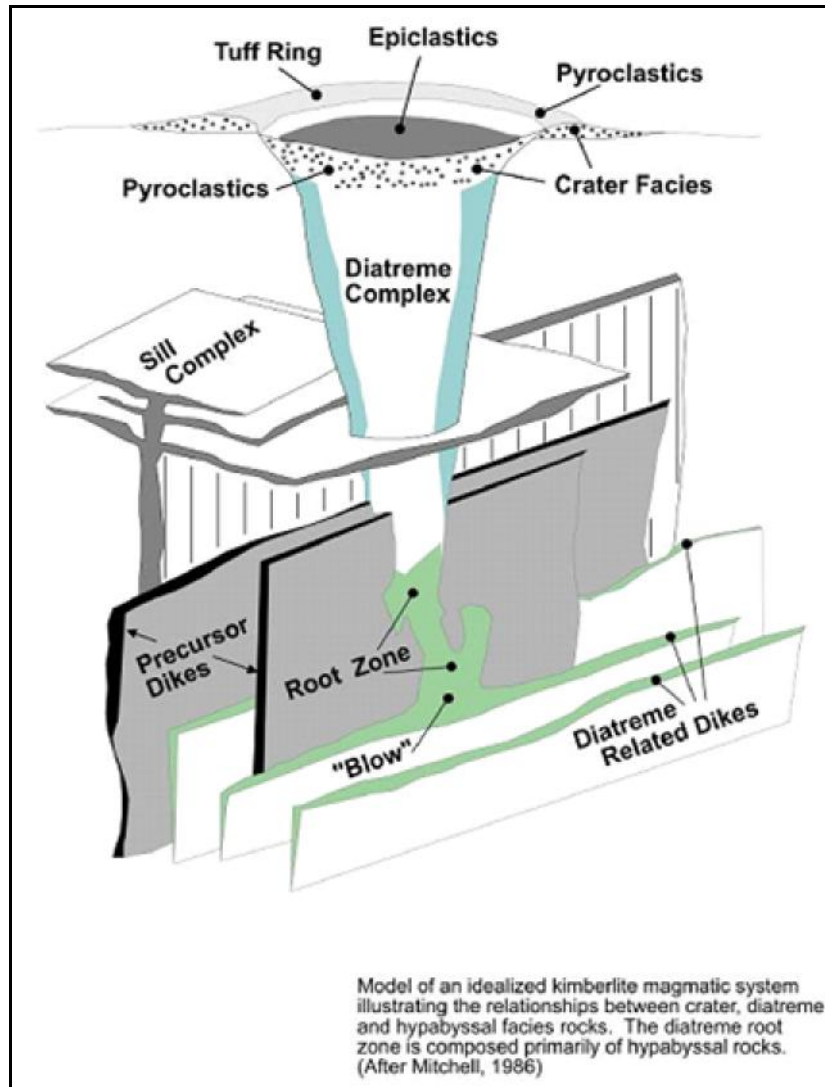
Primary economic diamond deposits are more commonly associated with kimberlites than lamproites. From measurements of kimberlite distribution, Janse (1984) observed that kimberlites occur in clusters of as many as 50 intrusions, each cluster no more than 40 km across. The distance between clusters is in the order of one hundred to several hundred kilometres. Kennedy (1964) first pointed out that diamondiferous kimberlites are restricted to cratons. Lamproites more commonly occur off craton, generally in Proterozoic mobile belts.

The idealized model for a single diamond-bearing volcanic system (Figure 8-1) includes a feeder magmatic dyke intrusion, diatreme-like breccia, an overlying crater with pyroclastic infill, epiclastic reworked sediments and a surrounding ring of

pyroclastic ejecta. The size of the crater and the depth, shape and complexity of the crater may vary considerably, and multiple intrusions typically occur. Diamond-bearing magmas are believed to rise along zones of structural weakness.



Figure 8-1: Idealized model of a kimberlite pipe (after Mitchell, 1986)



8.1 Comments on Section 8

The proposed deposit model accurately describes the DO-27 deposit.

9.0 EXPLORATION

Exploration on the Project by Peregrine began in 2004 and is summarized below (Table 9-1). Additional information can be found in Coopersmith, 2005, Coopersmith and Pell (2007), Eggleston and Brisebois, 2008, Pell (2004), Pell and Coopersmith (2006), Pell and Tam (2006), and Pell et al. (2006, 2007, and 2008).

Table 9-1: Summary of Peregrine Exploration

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
# of till samples	3	88	108	133	0	0	0	0	0	0
# of till samples w/KIMs	0	34	32	43	0	0	0	0	0	0
Airborne Mag/EM (km ²)	10.5	0	125	0	0	0	0	0	0	0
Airborne Gravity (km ²)	0	0	52	0	0	0	0	0	0	0
Ground Magnetics (line-km)	0	0	204.9	110.4	554.5	0	0	93.7	118.1	0
Ground HLEM (line-km)	0	0	18.4	35.2	2.4	0	0	0	0	0
Ground OHM Mapper (line-km)	0	0	0	0	0	0	0	0	27.4	0

9.1 Grids and Surveys

All surveying was done in UTM NAD 83, Zone 12, coordinates.

9.2 Till Sampling

Till sampling by Peregrine was designed to confirm the results obtained by previous operators and to better define existing indicator mineral trains in the Project area.

Samples collected by Peregrine typically consisted of 15-20 kg of glacial till collected using D-handled spades and placed into 18 x 24 inch polypropylene woven bags (rice bags) lined with 18 x 24 plastic sample bags. The outer bags were labelled on both sides with their respective sample numbers; a metal tag with the sample number placed inside and the opening was secured using two plastic non-removable cable ties. Samples were collected in the helicopter and ferried to a central cache at camp for transport to Yellowknife. When samples were cached, bags were checked for damage and wear. Samples were placed in order and a sample list was compiled for shipping. In Yellowknife samples were placed in shipping containers and shipped by truck to Vancouver Indicator Processors in Burnaby, B.C.

The laboratory process is briefly described below and outlined in Figure 9-1. Samples received at Vancouver Indicator Processors (VIP) are weighed upon receipt and then deslimed and disaggregated in a concrete mixer, then wet screened using 2.0 mm,

0.86 and 0.25 mm screens. The +2.00 mm and -0.25 mm fractions are weighed and discarded.

Wet screening is carried out on two single-deck, 30 inch, vibrating, self-cleaning screens manufactured by Kason Corporation and operated in tandem, with the underflow from the coarser screen cascading onto the finer screen. The -0.86+0.25 fraction is dried and a magnetic concentrate made from it. Material coarser than 0.86mm is stored in case processing of the -2.00+0.86 fraction is needed. The magnet used is a permanent type magnetic separator operating at about 2.1 Tesla and manufactured by Outokumpu Technology Inc. The weak and strong magnetic (ferromagnetic and paramagnetic) fractions are combined and the heavy minerals further concentrated by heavy liquids.

Heavy liquid processing, typically on material up to 1 kg, was performed at the Global Discovery Laboratories of Teck Cominco Ltd., using a two-stage process in which the heavy sink from tetrabromoethane (2.96 SG) is further separated in methylene iodide to produce a concentrate heavier than SG 3.32. Heavy concentrates were sent to KIM Dynamics of North Vancouver, BC, for grain analysis.

Peregrine till sample sampling programs were as follows:

2004-2005

Ninety-one till samples were collected, 34 of which contained kimberlite indicator minerals (KIMs).

2006

In 2006, 108 till samples were collected, 32 of which contained KIMs.

2007

In 2007, 133 till samples were collected, 43 of which contained KIMs.

Comment

Figure 9-2 shows the results of this work.

Previous sampling was confirmed and no new indicator trains were found in the Project area.



Figure 9-1: Till Sample Processing Flow Chart (courtesy of Peregrine, 2014)

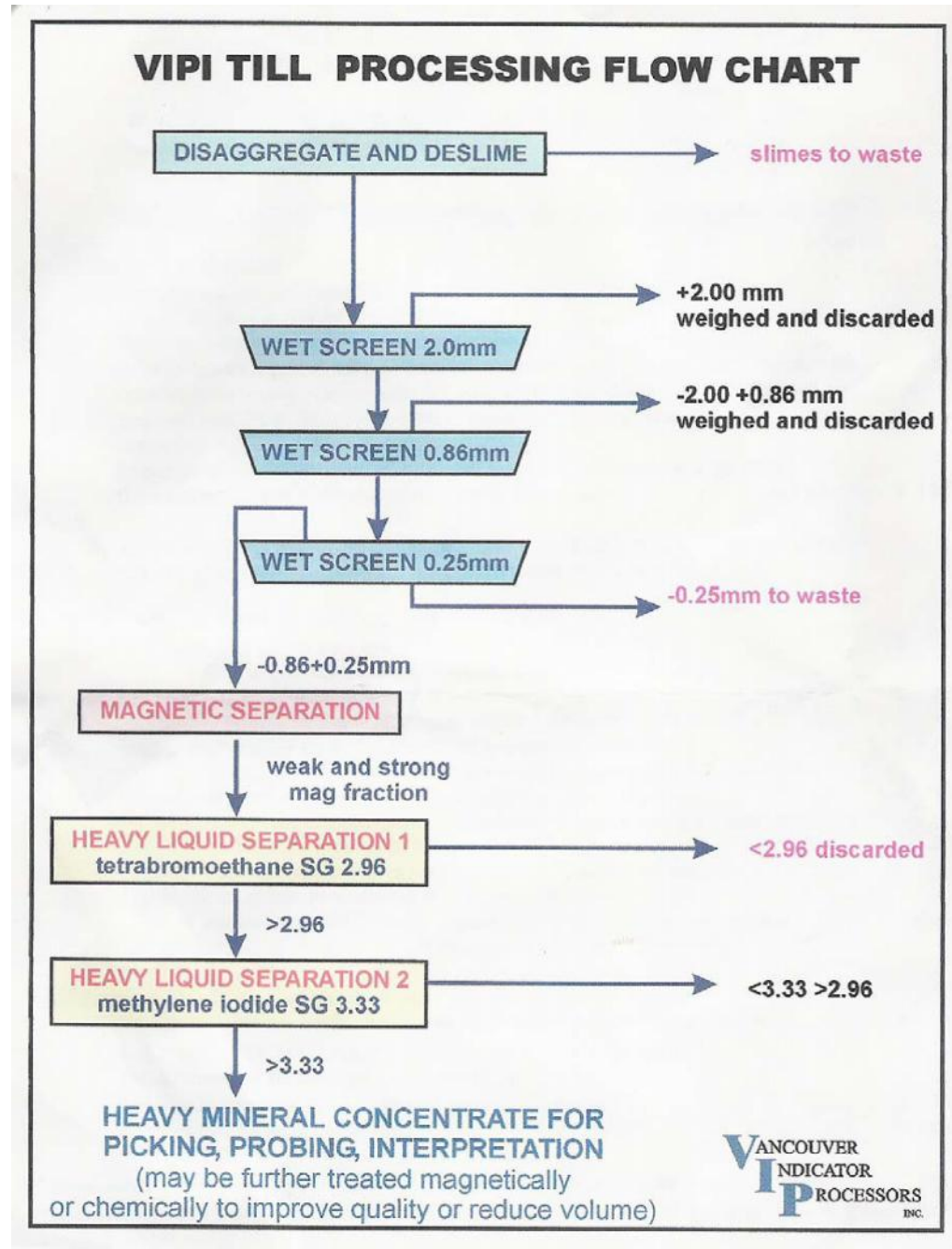
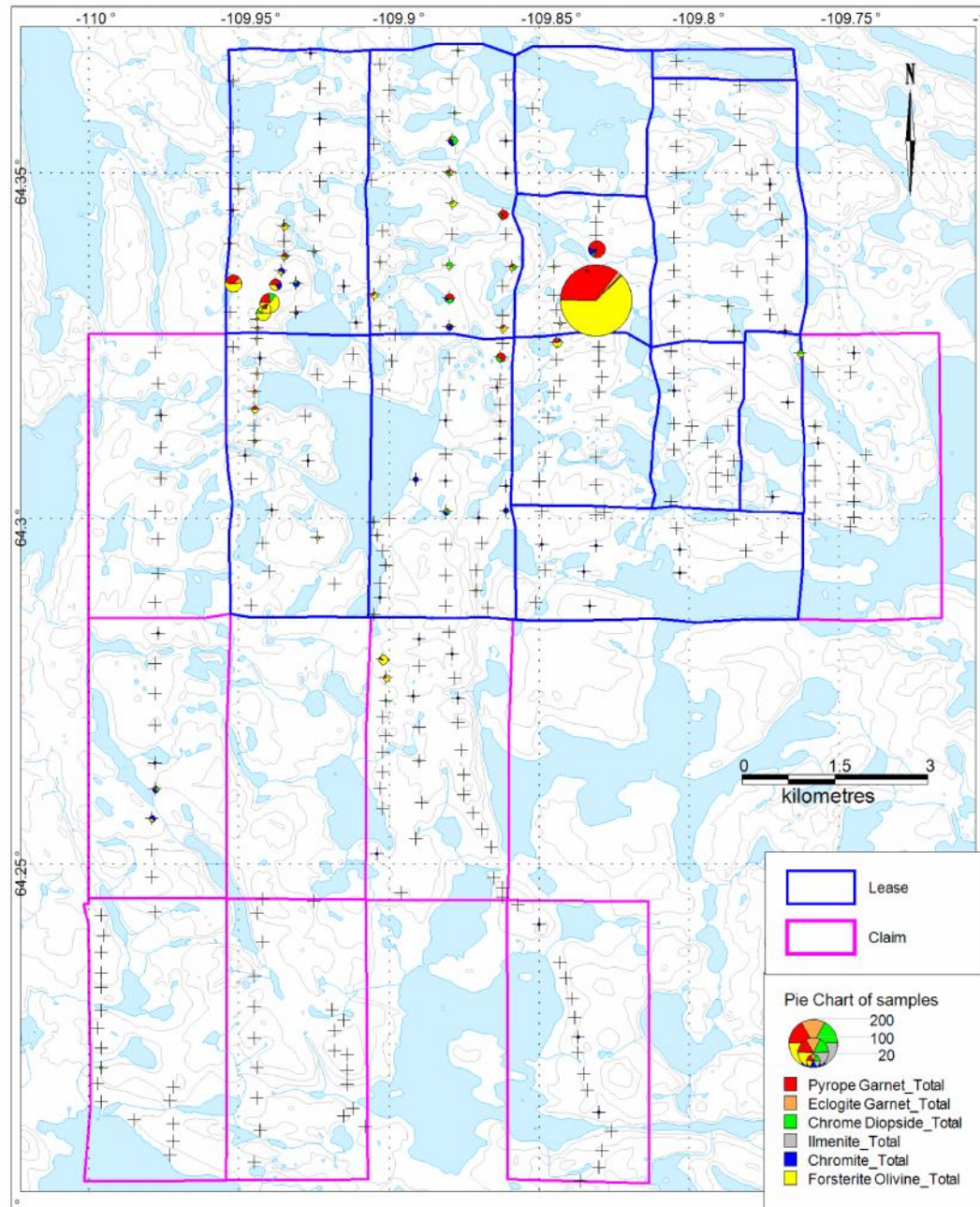




Figure 9-2: Peregrine Till Sample Results (courtesy of Peregrine, 2014)



9.3 Geophysics

Geophysical surveys by Peregrine were designed to augment work by previous operators and to provide digital data where the previous operator's data were not available.

2004-2005

A small part of the Project area was covered by an airborne DIGHEM™ magnetic/electromagnetic survey (Pell, 2004).

2006

Ground magnetic surveys were completed covering the north end of DO-27 and DO-18; as well, ground magnetic and electromagnetic surveys were completed over other geophysical anomalies elsewhere on the WO Property.

One horizontal loop electromagnetic ground geophysical survey in the vicinity of DO-27. Airborne Falcon™ MAG/FDEM/AGG and ground horizontal loop electromagnetic (HLEM) surveys were completed in the vicinity of DO-27 and DO-18.

2007

Ground magnetic surveys and ground horizontal loop electromagnetic (HLEM) surveys were completed by Peregrine.

2008

Peregrine performed ground magnetic surveys and HLEM surveys.

2011

In 2011, ground magnetic surveys were completed on six grids (Figure 9-3). Drill testing in 2012 of anomalies on two of these grids led to the discovery of two new kimberlites, LD-2 and LD-3.

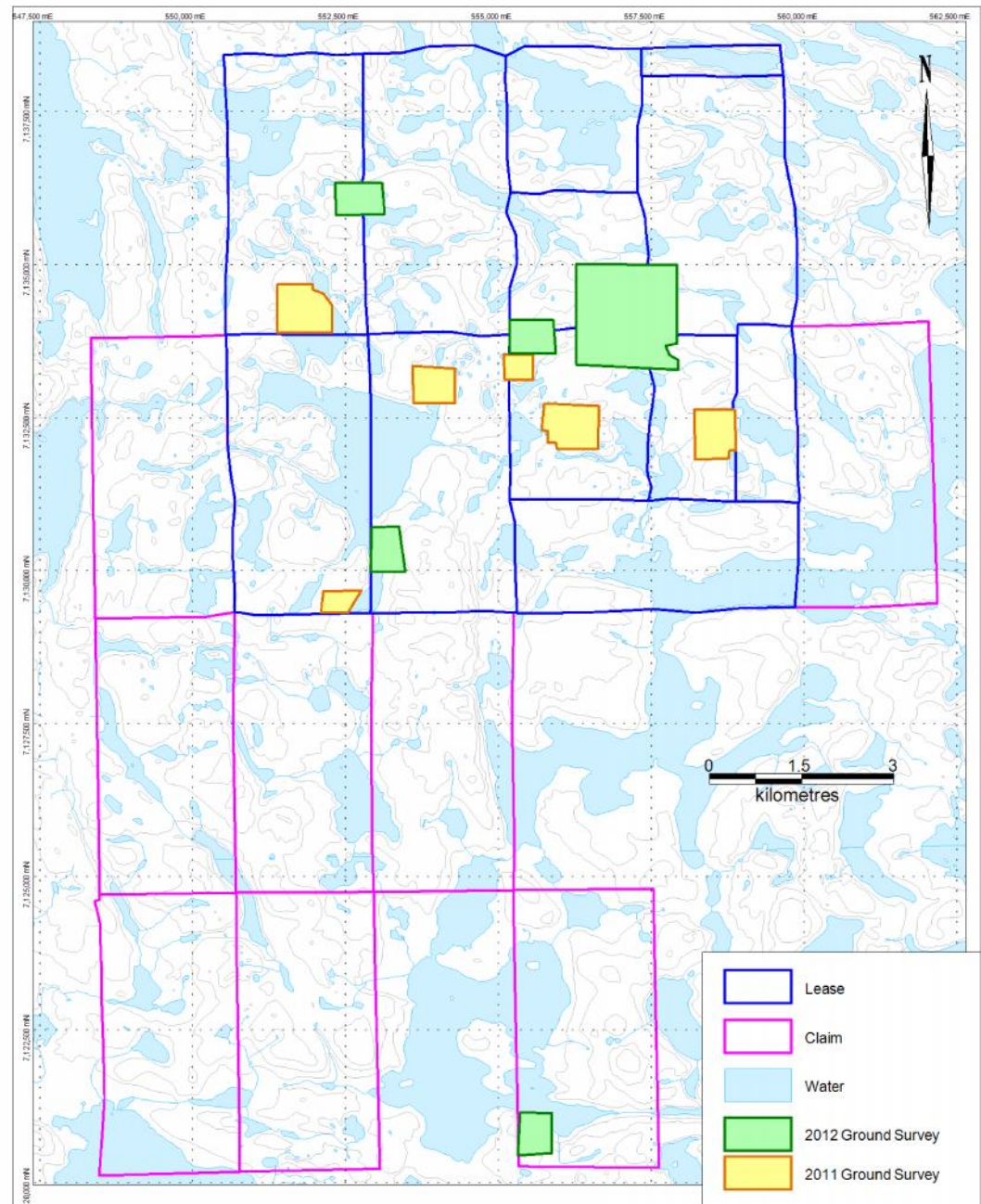
2012

In 2012, Peregrine completed ground magnetic surveys on five grids (Figure 9-3) and capacitively coupled resistivity (OhmMapper) surveys over five targets.

Additional interpretation of the geophysical data is ongoing.



Figure 9-3: Location of 2011-2012 Ground Geophysical Surveys (courtesy of Peregrine, 2014)



9.4 Petrology, Mineralogy, and Research Studies

A study of mantle derived xenoliths and xenocrysts from DO-27 was completed by Sciortino (2007).

Mineral Services (2007) reported on the characteristics of indicator minerals at DO-27,

9.5 Geotechnical and Hydrological Studies

Ten geotechnical holes were drilled as part of the exploration work in 2006. Two of those holes were instrumented with thermistors. These holes were carefully logged for geotechnical information.

9.6 Exploration Potential

Seven relatively unexplored kimberlites occur on the Project; two of which were discovered in 2012. Many are diamondiferous and require additional exploration to determine if they contain potentially economic diamond grades and quality. AMEC considers it likely that additional kimberlites will be discovered on the Project; however, potential for economic extraction is a matter of conjecture at this point and may not be realized.

9.7 Comments on Section 9

Exploration to date has been consistent with industry-standard practices and has successfully identified at least nine kimberlite pipes on the property. Of those, DO-27 was sufficiently explored to allow estimation of an Indicated Mineral Resource. The remaining kimberlites require additional exploration.

10.0 DRILLING

10.1 Summary

Drilling is summarized, by year, in this section. Figure 10-1 shows the location of all exploration drill holes on the Project. Table 10-1 summarizes drill hole locations.

1993

Five exploration holes were drilled in March 1993, proving the anomaly (DO-27) to be kimberlite. A diamond with an approximate diameter of 3 mm was seen in the drill core. DO-18 was also drilled and proved to be a kimberlite.

In April 1993, exploration drilling discovered two other kimberlites on the property: DO-29 and DO-32.

In May 1993, delineation drilling commenced to outline the extent of both DO-27 (Figure 10-2) and DO-18 (Figure 10-5). The delineation drill program (39 holes) at DO-27 was completed in September 1993.

Exploration drilling discovered kimberlite AD-02.

In the 1993 exploration season a total of 68 diamond drill holes (8,806 m) were completed; 14 of these were exploration holes (1,183.4 m), 44 holes (5,937 m) were completed in and around DO-27 and 10 holes (1,686 m) were drilled at DO-18. A total of five additional kimberlites were discovered.

1994

One exploration target was drilled in 1994 (BH-2, 167 m); however, no kimberlite was found. In addition, one delineation and one RC pilot hole were completed at DO-18 (217.1 m); two delineation holes were drilled at DO-28 (210 m) and one delineation hole was drilled at DO-32 (70 m). A total of 664.1 m was drilled in 1994.

1996

One vertical large diameter core hole was completed at DO-18 (203.3 m). Little information is available on this hole.

1998

Additional work on DO-29 proved it to be two kimberlite bodies (DO-29N and DO-29S). One vertical drill hole was completed on DO29N (107 m). Twelve diamonds (one macrodiamond and 11 microdiamonds) were recovered from 82.7 kg of core from DO-29N.

2002

Drilling of a Falcon™ airborne gravity anomaly intersected kimberlite WO-09. Three other anomalies were drilled, but no other kimberlite was intersected.

2003

Three additional holes were reportedly drilled on WO-09 in 2003 by Archon Minerals; however no information (hole co-ordinates or logs) are available for this drilling. The drill, core in boxes and samples in polyurethane bags were observed by Dr. Pell in 2004 sitting beside the lake that overlies part of WO-9.

2005-2007

Between 2005 and the end of 2007, Peregrine completed 17,561.82 m of core drilling in 66 holes at DO-27 (Figure 10-3; Table 10-1) using Boyles BBS25A drills. Connors Drilling/Foraco Canada Ltd. of Kamloops was the drill contractor. Core holes were drilled exclusively to determine the limits of the kimberlite body. Kimberlite was intersected in all but five of the holes (DO27-GT06-02, 03, 04, 08 and 10) which were drilled to gather geotechnical information and were not intended to intersect kimberlite. The deepest intersection of kimberlite was in drill hole DO27-05-02, which intersected kimberlite from beneath the overburden contact to the end of hole (459.5 metres). Additional details on the drill programs are presented in Coopersmith (2005), Pell and Coopersmith (2006) and Coopersmith and Pell (2007).

In 2005, Peregrine undertook a large diameter reverse circulation drill (LDD) program designed to test the central portion of the DO-27 kimberlite for macrodiamonds. Midnight Sun Drilling Ltd. (Midnight Sun) from Whitehorse, Yukon, was contracted to complete the drilling. For this drill program, Midnight Sun used the a 2001 T-685 Schramm drill mounted on a 2001 International truck and 34.925 cm diameter drill bits (tri-cone and wing bits).

During the winter/spring of 2006, Peregrine contracted Encore Coring and Drilling Inc. (Encore) of Calgary, Alberta to provide two reverse circulation (RC) drill rigs (Rig #423 – a modified Ingersoll-Rand TH-100 and Rig #412 – a Schramm 685WS) using a

Symmetrix casing setting system, to collect additional kimberlite. The RC rigs drilled holes with bits of varying diameters from 34.925 to 60.96 cm using the reverse-flood, air-assist method to minimize the potential for diamond breakage.

From December 2006 to early May 2007, Peregrine again contracted Encore to provide two RC drill rigs and one additional dual rotary drill rig to collect another bulk sample of the DO-27 kimberlite. The two RC rigs were the same ones used in the 2006 program. The dual rotary rig was a Foremost Barber DR40 (Rig 440). The Barber rig was used exclusively for setting casing while the 2 RC rigs were dedicated to production drilling of the kimberlite. As with the previous year, an air assisted, reverse-flood, closed circulation system was used for production drilling to minimize diamond breakage. The Barber rig set 60.96 to 71.12 cm casing and the production RC rigs used 43.18 to 66.04 cm diameter bits.

In total, 8,843.47 m of drilling was completed in 46 LDD holes during the three programs (Figure 10-4; Table 10-2). Kimberlite was intersected in all but one hole (DO27L-06-11) which was lost in overburden. The deepest RC hole was DO27L-06-02 that intersected kimberlite from beneath the overburden contact to the end of hole (403 m). Additional details on the drill programs are presented in Coopersmith (2005), Pell and Coopersmith (2006) and Coopersmith and Pell (2007).

Figure 10-5 shows the location of pre-Peregrine holes drilled at DO-18 and Figure 10-6 shows the locations of Peregrine core holes drilled at DO-18.

2012

In 2012, Peregrine drilled four NQ core holes for a total of 478.33 m (Figure 10-1) to test three geophysical anomalies. Two kimberlites, LD-2 and LD-3 were discovered.

The LD-2 kimberlite was intersected by two inclined drill holes, LDGE-007-12-DD01 and DD02 (Figure 10-7). One main kimberlite unit was intersected, a dark grey kimberlitic mudstone that contained small scattered country rock gneiss xenoliths and xenocrysts, some sedimentary mudstone xenoliths, and some kimberlite indicator minerals including olivine, chrome diopside and pyrope garnet. In one drill hole, mudstone layers up to 7 m thick were intersected.

The LD-3 kimberlite was intersected in an inclined drill hole LDGE-015-12-DD01 (Figure 10-8). It comprised intermixed volcanoclastic or resedimented volcanoclastic kimberlite, and intermixed sediments. The kimberlite horizons have variable country rock gneiss and sedimentary rock xenolith contents, but never exceed 15% combined. They also contain magmaclasts, 15 – 35% recognizable olivine up to 15 mm size and

kimberlite indicator minerals including garnet and chrome diopside. The sedimentary horizons varied from black to medium grey to light brownish grey mudstones, light to medium grey siltstone to light to medium grey, gritty fine sandstone/siltstone with abundant mud chips and small country rock gneiss xenoliths.

The fourth drill hole, LDGE-001-12-DD01 did not intersect kimberlite. It intersected altered and rust stained country rock gneisses.

Samples from LD-2 and LD-3 were submitted to the SRC ISO/IEC 17025:2005 accredited diamond facility for caustic fusion diamond extraction. Results are summarized in Table 10-2. Both are diamondiferous.

Table 10-1: Drill Hole Locations on the Lac de Gras Project (coordinates in UTM NAD83 Zone 12)

Hole_ID	Year	Easting (m)	Northing (m)	Elevation (m)	Azimuth	Dip	LENGTH (m)	Type	Kimberlite
AD02-1	1993	555590	7131440	NA	0	-90	95.00	Core	AD-02
AD02-2	1993	555635	7131505	NA	0	-90	80.00	Core	AD-02
AD08-1	1993	556750	7134175	NA	0	-90	94.00	Core	None
BH-1	1993	559000	7131500	NA	0	-90	72.20	Core	None
DO18-93-01	1993	557237	7134673	432	0	-90	276.00	Core	DO-18
DO18-93-02	1993	557237	7134673	432	0	-90	167.00	Core	DO-18
DO18-93-03	1993	557055	7134338	426	90	-50	163.80	Core	DO-18
DO18-93-04	1993	557079	7134493	426	20	-50	179.00	Core	DO-18
DO18-93-05	1993	557754	7134588	438	0	-90	101.10	Core	DO-18
DO18-93-06	1993	557224	7134726	431	360	-50	200.00	Core	DO-18
DO18-93-07	1993	557225	7134621	431	180	-50	125.00	Core	DO-18
DO18-93-08	1993	557242	7134649	432	90	-50	196.00	Core	DO-18
DO18-93-10	1993	557176	7134353	426	0	-90	77.00	Core	DO-18
DO18-93-11	1993	557286	7134620	425	180	-50	201.00	Core	DO-18
DO27-93-01	1993	557213	7133977	418	0	-90	71.00	Core	DO-27
DO27-93-02	1993	557287	7133965	418	0	-90	89.00	Core	DO-27
DO27-93-03	1993	557415	7133862	420	0	-90	112.00	Core	DO-27
DO27-93-04	1993	557174	7134050	418	0	-90	59.00	Core	DO-27
DO27-93-05	1993	557208	7133853	418	0	-90	143.00	Core	DO-27
DO27-93-06	1993	557094	7133839	418	0	-90	54.50	Core	DO-27
DO27-93-07	1993	557209	7133744	418	0	-90	200.00	Core	DO-27
DO27-93-08	1993	557209	7133744	418	270	-50	67.00	Core	DO-27
DO27-93-09	1993	557222	7133653	418	0	-90	140.00	Core	DO-27
DO27-93-10	1993	557121	7133640	418	0	-90	125.00	Core	DO-27
DO27-93-11	1993	557136	7133541	418	0	-90	29.00	Core	DO-27
DO27-93-12	1993	557020	7133626	418	0	-90	44.00	Core	DO-27
DO27-93-13	1993	557235	7133555	418	0	-90	36.00	Core	DO-27
DO27-93-14	1993	557270	7133661	418	0	-90	77.00	Core	DO-27
DO27-93-15	1993	557307	7133769	418	0	-90	146.00	Core	DO-27
DO27-93-16	1993	557133	7133742	418	0	-90	215.00	Core	DO-27
DO27-93-17	1993	557187	7133902	418	0	-90	122.00	Core	DO-27
DO27-93-18	1993	557262	7133913	418	0	-90	110.00	Core	DO-27
DO27-93-19	1993	557320	7133870	418	0	-90	155.00	Core	DO-27
DO27-93-20	1993	557164	7133697	418	0	-90	161.50	Core	DO-27
DO27-93-21	1993	557082	7133736	418	0	-90	110.00	Core	DO-27
DO27-93-22	1993	557138	7133957	418	110	-60	198.00	Core	DO-27
DO27-93-23	1993	557434	7133938	420	0	-90	85.00	Core	DO-27
DO27-93-24	1993	557434	7133938	420	0	-80	181.00	Core	DO-27
DO27-93-25	1993	557434	7133938	420	0	-50	182.00	Core	DO-27

Hole_ID	Year	Easting (m)	Northing (m)	Elevation (m)	Azimuth	Dip	LENGTH (m)	Type	Kimberlite
DO27-93-26	1993	557434	7133938	420	300	-50	308.00	Core	DO-27
DO27-93-27	1993	557436	7133937	420	180	-50	239.00	Core	DO-27
DO27-93-28	1993	557436	7133939	420	90	-50	158.00	Core	DO-27
DO27-93-29	1993	557289	7134270	419	0	-90	122.00	Core	DO-27
DO27-93-30	1993	557286	7134270	419	270	-50	101.00	Core	DO-27
DO27-93-31	1993	557357	7134139	418	220	-50	273.00	Core	DO-27
DO27-93-32	1993	557404	7133805	420	0	-90	132.50	Core	DO-27
DO27-93-33	1993	557357	7134140	418	270	-50	71.00	Core	DO-27
DO27-93-34	1993	557404	7133805	420	180	-50	113.00	Core	DO-27
DO27-93-35	1993	557190	7134256	418	0	-90	93.50	Core	DO-27
DO27-93-36	1993	557357	7134140	418	262	-60	203.00	Core	DO-27
DO27-93-37	1993	557357	7134140	418	0	-90	106.50	Core	DO-27
DO27-93-38	1993	557357	7134140	418	320	-50	32.50	Core	DO-27
DO27-93-39	1993	557357	7134140	418	320	-50	198.00	Core	DO-27
DO27-93-40	1993	557407	7133986	419	90	-68	170.00	Core	DO-27
DO27-93-41	1993	557406	7133986	419	0	-90	182.00	Core	DO-27
DO27-93-42	1993	557404	7133984	419	270	-50	200.00	Core	DO-27
DO27-93-43	1993	557105	7134187	418	160	-50	167.00	Core	DO-27
DO27-93-44	1993	557416	7133935	419	270	-70	155.00	Core	DO-27
DO28-1	1993	559875	7134300	NA	0	-90	38.00	Core	DO-28
DO29-1	1993	555367	7132050	NA	0	-90	59.00	Core	DO-29
DO29-2	1993	555367	7131980	NA	0	-90	125.00	Core	DO-29
DO29N-3	1993	555387	7132625	NA	0	-90	47.00	Core	DO-29
DO29N-5	1993	555425	7132600	NA	0	-90	98.00	Core	DO-29
DO29S-4	1993	555387	7132140	NA	0	-90	80.00	Core	DO-29
DO30-1	1993	552650	7132775	NA	0	-90	105.20	Core	DO-30
DO32-1	1993	551880	7136790	NA	0	-90	125.00	Core	DO-32
DO32-2	1993	551825	7136730	NA	0	-90	110.00	Core	DO-32
DO64-1	1993	556230	7131760	NA	0	-90	55.00	Core	DO-64
BH-2	1994	558880	7131500	NA	65	-50	167.00	Core	None
DO18-94-12	1994	557258	7134492	425	0	-50	36.40	Core	DO-18
DO18-94-13	1994	557260	7134584	NA	0	-90	180.70	Core	DO-18
DO28-2	1994	559825	7134610	NA	176	-50	176.00	Core	DO-28
DO28-3	1994	559815	7134570	NA	34	-50	34.00	Core	DO-28
DO32-3	1994	551750	7136625	NA	0	-90	70.00	Core	DO-32
DO18-96-LD1	1996	557241	7134668	432	0	-90	203.30	LD Core	DO-18
DO29N-6	1998	555387	7132625	NA	0	-90	107.00	Core	DO-29
WO11-1	2002	553888	7132968	NA	91	-70	85.00	Core	None
WO12-1	2002	553920	7133765	NA	38	-75	32.60	Core	None
WO34-1	2002	552692	7132940	NA	193	-45	134.70	Core	None
WO9-1	2002	555245	7132964	NA	15	-47	86.56	Core	WO-9
DO18-05-01	2005	557243	7134702	426	270	-45	181.00	Core	DO-18
DO18-05-02	2005	557243	7134702	426	350.5	-45	151.00	Core	DO-18
DO18-05-03	2005	557243	7134702	426	90	-45	117.00	Core	DO-18
DO18-05-04	2005	557235	7134600	424	157	-45	167.00	Core	DO-18
DO18-05-05	2005	557235	7134600	424	270	-50	112.00	Core	DO-18
DO18-05-06	2005	557219	7134666	424	0	-90	206.00	Core	DO-18
DO18-05-07	2005	557219	7134666	424	135	-45	240.00	Core	DO-18
DO18-05-08	2005	557087	7134464	419	220	-45	179.00	Core	DO-18
DO27-05-01	2005	557187	7133758	418	0	-90	58.52	Core	DO-27
DO27-05-02	2005	557191	7133755	418	0	-90	459.50	Core	DO-27
DO27-05-03	2005	557165	7133682	418	0	-90	230.00	Core	DO-27
DO27-05-04	2005	557425	7133835	420	180	-70	112.50	Core	DO-27
DO27-05-05	2005	557425	7133835	420	200	-47	99.80	Core	DO-27
DO27-05-06	2005	557425	7133835	420	80	-45	101.00	Core	DO-27
DO27-05-07	2005	557425	7133835	420	273	-70	218.00	Core	DO-27
DO27-05-08	2005	557392	7133834	419	265	-45	290.00	Core	DO-27
DO27-05-09	2005	557392	7133834	419	265	-86	155.00	Core	DO-27
DO27-05-10	2005	557392	7133834	419	348	-45	140.00	Core	DO-27

Hole_ID	Year	Easting (m)	Northing (m)	Elevation (m)	Azimuth	Dip	LENGTH (m)	Type	Kimberlite
DO27-05-11	2005	557400	7133913	419	240	-45	374.00	Core	DO-27
DO27-05-12	2005	557345	7134210	419	230	-45	65.00	Core	DO-27
DO27-05-RC01	2005	557200	7133795	418	0	-90	209.00	LDD	DO-27
DO27-05-RC02	2005	557180	7133745	418	0	-90	124.00	LDD	DO-27
DO27-05-RC03	2005	557160	7133700	418	0	-90	190.00	LDD	DO-27
DO27-05-RC04	2005	557235	7133755	418	0	-90	93.00	LDD	DO-27
DO27-05-RC05	2005	557235	7133795	418	0	-90	83.00	LDD	DO-27
DO27-05-RC06	2005	557235	7133835	418	0	-90	77.00	LDD	DO-27
G031-05-01	2005	557776	7133078	430	270	-45	150.00	Core	GO-31
W014-05-01	2005	553206	7130348	420	0	-90	30.00	Core	WO-14
DO18-06-09	2006	557188	7134613	423	0	-90	301.50	Core	DO-18
DO18-06-10	2006	557290	7134560	426	0	-90	291.20	Core	DO-18
DO18-06-11	2006	557237	7134556	419	0	-90	286.00	Core	DO-18
DO18-06-12A	2006	557261	7134739	428	0	-90	6.00	Core	DO-18
DO18-06-12B	2006	557261	7134740	428	0	-90	299.00	Core	DO-18
DO18-06-13	2006	557281	7134669	426	0	-90	295.00	Core	DO-18
DO18-06-14	2006	557300	7134615	427	0	-90	299.00	Core	DO-18
DO27-06-13	2006	557340	7133895	418	0	-90	140.00	Core	DO-27
DO27-06-14	2006	557340	7133850	418	0	-90	178.60	Core	DO-27
DO27-06-15	2006	557305	7133855	418	0	-90	212.13	Core	DO-27
DO27-06-16	2006	557235	7133785	418	0	-90	305.00	Core	DO-27
DO27-06-17	2006	557270	7133855	418	0	-90	203.00	Core	DO-27
DO27-06-18	2006	557200	7133707	418	0	-90	250.00	Core	DO-27
DO27-06-19	2006	557235	7133739	418	0	-90	251.00	Core	DO-27
DO27-06-20	2006	557164	7133714	418	0	-90	308.00	Core	DO-27
DO27-06-21	2006	557202	7133666	418	0	-90	258.50	Core	DO-27
DO27-06-22	2006	557155	7133830	418	0	-90	269.00	Core	DO-27
DO27-06-23	2006	557098	7133751	418	0	-90	298.40	Core	DO-27
DO27-06-24	2006	557100	7133700	418	0	-90	299.80	Core	DO-27
DO27-06-25	2006	557347	7134150	418	0	-90	34.40	Core	DO-27
DO27-06-26	2006	557392	7133883	418	0	-90	215.10	Core	DO-27
DO27-06-27	2006	557390	7133810	419	0	-90	196.60	Core	DO-27
DO27-06-28	2006	557425	7133835	420	0	-90	197.00	Core	DO-27
DO27-06-29	2006	557426	7133808	420	0	-90	176.00	Core	DO-27
DO27-06-30	2006	557410	7133825	420	0	-90	194.00	Core	DO-27
DO27-06-31	2006	557467	7133835	422	270	-53	355.00	Core	DO-27
DO27-06-32	2006	557350	7133823	418	0	-90	343.60	Core	DO-27
DO27-06-MZ01	2006	557366	7134147	419	270	-45	158.80	Core	DO-27
DO27-06-MZ02	2006	557176	7134404	420	90	-45	145.00	Core	DO-27
DO27-06-MZ03	2006	557401	7134101	423	270	-45	163.00	Core	DO-27
DO27-06-MZ04	2006	557422	7134051	423	270	-45	219.00	Core	DO-27
DO27-GT06-01	2006	556915	7133890	428	122	-48	484.00	Geotech	DO-27
DO27-GT06-02	2006	556833	7133673	435	120	-46	349.20	Geotech	DO-27
DO27-GT06-03	2006	557060	7133386	421	360	-50	502.00	Geotech	DO-27
DO27-GT06-04	2006	557274	7133436	418	300	-50	352.00	Geotech	DO-27
DO27-GT06-05	2006	557474	7133667	421	300	-50	550.20	Geotech	DO-27
DO27-GT06-06	2006	557013	7134004	420	120	-50	427.00	Geotech	DO-27
DO27-GT06-07	2006	557403	7134026	418	228	-50	329.00	Geotech	DO-27
DO27-GT06-08	2006	557350	7133665	418	0	-90	149.10	Geotech	DO-27
DO27-GT06-09	2006	557400	7133848	419	0	-90	120.60	Geotech	DO-27
DO27-GT06-10	2006	556972	7133805	425	300	-72	100.80	Geotech	DO-27
DO27L-06-01	2006	557340	7133900	418	0	-90	84.75	LDD	DO-27
DO27L-06-02	2006	557185	7133785	418	0	-90	403.00	LDD	DO-27
DO27L-06-03	2006	557271	7133869	418	0	-90	228.00	LDD	DO-27
DO27L-06-04	2006	557327	7133844	418	0	-90	245.50	LDD	DO-27
DO27L-06-05	2006	557281	7133824	418	0	-90	53.00	LDD	DO-27
DO27L-06-06	2006	557253	7133824	418	0	-90	180.13	LDD	DO-27
DO27L-06-07	2006	557205	7133746	418	0	-90	314.00	LDD	DO-27
DO27L-06-08	2006	557195	7133830	418	0	-90	240.59	LDD	DO-27

Hole_ID	Year	Easting (m)	Northing (m)	Elevation (m)	Azimuth	Dip	LENGTH (m)	Type	Kimberlite
DO27L-06-09	2006	557200	7133680	418	0	-90	383.00	LDD	DO-27
DO27L-06-10	2006	557150	7133787	418	0	-90	145.00	LDD	DO-27
DO27L-06-11	2006	557150	7133750	418	0	-90	38.00	LDD	DO-27
DO27L-06-12	2006	557162	7133716	418	0	-90	109.00	LDD	DO-27
DO27L-NE01	2006	557411	7133825	420	0	-90	98.31	LDD	DO-27
DO27L-NE02	2006	557405	7133802	420	0	-90	119.45	LDD	DO-27
DO27-07-33	2007	557170	7133800	417	0	-90	275.00	Core	DO-27
DO27-07-34	2007	557150	7133725	417	0	-90	276.00	Core	DO-27
DO27-07-36	2007	557300	7133990	417	180	-45	199.00	Core	DO-27
DO27-07-37	2007	557267	7133563	417	340	-46	142.00	Core	DO-27
DO27-07-38	2007	557030	7133585	417	50	-45	208.00	Core	DO-27
DO27-07-39	2007	557012	7133675	417	70	-50	215.20	Core	DO-27
DO27-07-40	2007	557236	7133990	417	195	-50	250.00	Core	DO-27
DO27-07-41	2007	557012	7133675	417	70	-65	248.00	Core	DO-27
DO27-07-42	2007	557152	7133536	417	10	-61	287.00	Core	DO-27
DO27-07-43	2007	557117	7133944	417	155	-50	241.70	Core	DO-27
DO27-07-44	2007	557152	7133536	417	10	-47	286.00	Core	DO-27
DO27-07-45	2007	557117	7133944	417	155	-61	280.00	Core	DO-27
DO27-07-46	2007	557394	7133755	418	300	-45	265.00	Core	DO-27
DO27-07-47	2007	557395	7133754	418	300	-60	233.00	Core	DO-27
DO27-07-48	2007	557384	7133700	418	300	-55	240.00	Core	DO-27
DO27-07-49	2007	557384	7133701	419	300	-45	381.00	Core	DO-27
DO27-07-50	2007	557002	7133963	420	125	-48	496.00	Core	DO-27
DO27-07-51	2007	556981	7133765	423	90	-60	374.00	Core	DO-27
DO27-07-52	2007	556986	7133875	419	110	-45	451.00	Core	DO-27
DO27-07-53	2007	556982	7133765	422	90	-45	419.00	Core	DO-27
DO27-07-54	2007	557375	7133665	419	285	-45	464.60	Core	DO-27
DO27-07-55	2007	557353	7133500	418	328	-50	545.00	Core	DO-27
DO27-07-56	2007	557375	7133665	418	285	-55	271.00	Core	DO-27
DO27-07-57	2007	557428	7133772	420	300	-62	160.00	Core	DO-27
DO27L-07-01	2007	557200	7133774	419	0	-90	256.01	LDD	DO-27
DO27L-07-02	2007	557225	7133824	417	0	-90	258.50	LDD	DO-27
DO27L-07-03	2007	557164	7133750	417	0	-90	127.83	LDD	DO-27
DO27L-07-04	2007	557300	7133875	417	0	-90	163.14	LDD	DO-27
DO27L-07-05	2007	557300	7133825	417	0	-90	280.83	LDD	DO-27
DO27L-07-06	2007	557275	7133850	417	0	-90	150.69	LDD	DO-27
DO27L-07-08	2007	557250	7133800	417	0	-90	192.80	LDD	DO-27
DO27L-07-09	2007	557225	7133850	417	0	-90	175.01	LDD	DO-27
DO27L-07-10	2007	557225	7133800	417	0	-90	275.22	LDD	DO-27
DO27L-07-11	2007	557225	7133775	417	0	-90	275.30	LDD	DO-27
DO27L-07-12	2007	557225	7133725	417	0	-90	160.06	LDD	DO-27
DO27L-07-13	2007	557227	7133698	417	0	-90	158.76	LDD	DO-27
DO27L-07-14	2007	557200	7133724	417	0	-90	185.97	LDD	DO-27
DO27L-07-16	2007	557175	7133800	417	0	-90	216.39	LDD	DO-27
DO27L-07-17	2007	557175	7133775	417	0	-90	266.57	LDD	DO-27
DO27L-07-18	2007	557176	7133723	417	0	-90	277.12	LDD	DO-27
DO27L-07-19	2007	557175	7133700	417	0	-90	295.05	LDD	DO-27
DO27L-07-20	2007	557175	7133650	417	0	-90	136.59	LDD	DO-27
DO27L-07-22	2007	557150	7133675	417	0	-90	277.01	LDD	DO-27
DO27L-07-23	2007	557178	7133824	417	0	-90	256.45	LDD	DO-27
DO27L-07-24	2007	557125	7133751	417	0	-90	284.04	LDD	DO-27
DO27L-07-25	2007	557125	7133700	417	0	-90	275.71	LDD	DO-27
DO27L-NE03	2007	557390	7133843	420	0	-90	104.59	LDD	DO-27
DO27L-NE04	2007	557391	7133826	419	0	-90	118.25	LDD	DO-27
DO27L-NE05	2007	557394	7133811	420	0	-90	160.44	LDD	DO-27
DO27L-NE06	2007	557370	7133805	419	0	-90	102.13	LDD	DO-27
LDGE-001-12-DD01	2012	558621	7132422	423	234	-47	108.33	Core	None
LDGE-007-12-DD01	2012	555277	7133294	457	59	-45	123.00	Core	LD-2
LDGE-007-12-DD02	2012	555277	7133294	457	59	-60	134.00	Core	LD-2

Hole_ID	Year	Easting (m)	Northing (m)	Elevation (m)	Azimuth	Dip	LENGTH (m)	Type	Kimberlite
LDGE-015-12-DD01	2012	552481	7129335	425	330	-45	113.00	Core	LD-3

Table 10-2: 2012 Caustic Fusion Microdiamond Results

Numbers of Diamonds According to Sieve Size Fraction (mm)												
Kimberlite	Sample Weight (kg)	+0.106 -0.150	+0.150 -0.212	+0.212 -0.300	+0.300 -0.450	+0.425 -0.600	+0.600 -0.850	+0.850 -1.180	+1.180 -1.700	+1.700 -2.360	Total Diamonds	Carats (+0.850 mm size)
LD-2	187.1	8	7	3	1	2	0	1	0	0	22	0.014
LD-3	48.2	7	6	6	4	0	1	0	0	0	24	0



Figure 10-1: Exploration Drilling on the WO Property by Year (courtesy of Peregrine, 2014)

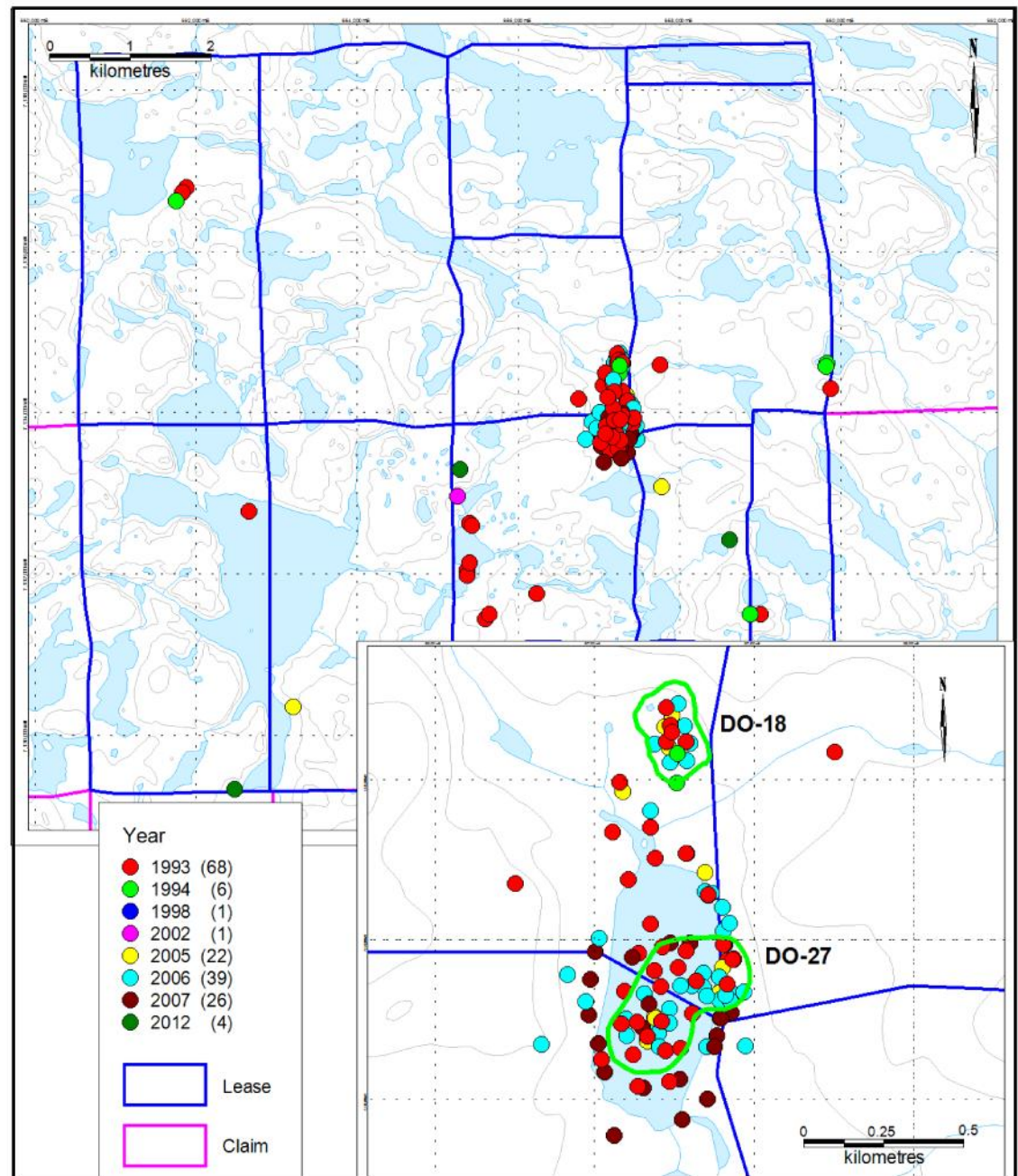
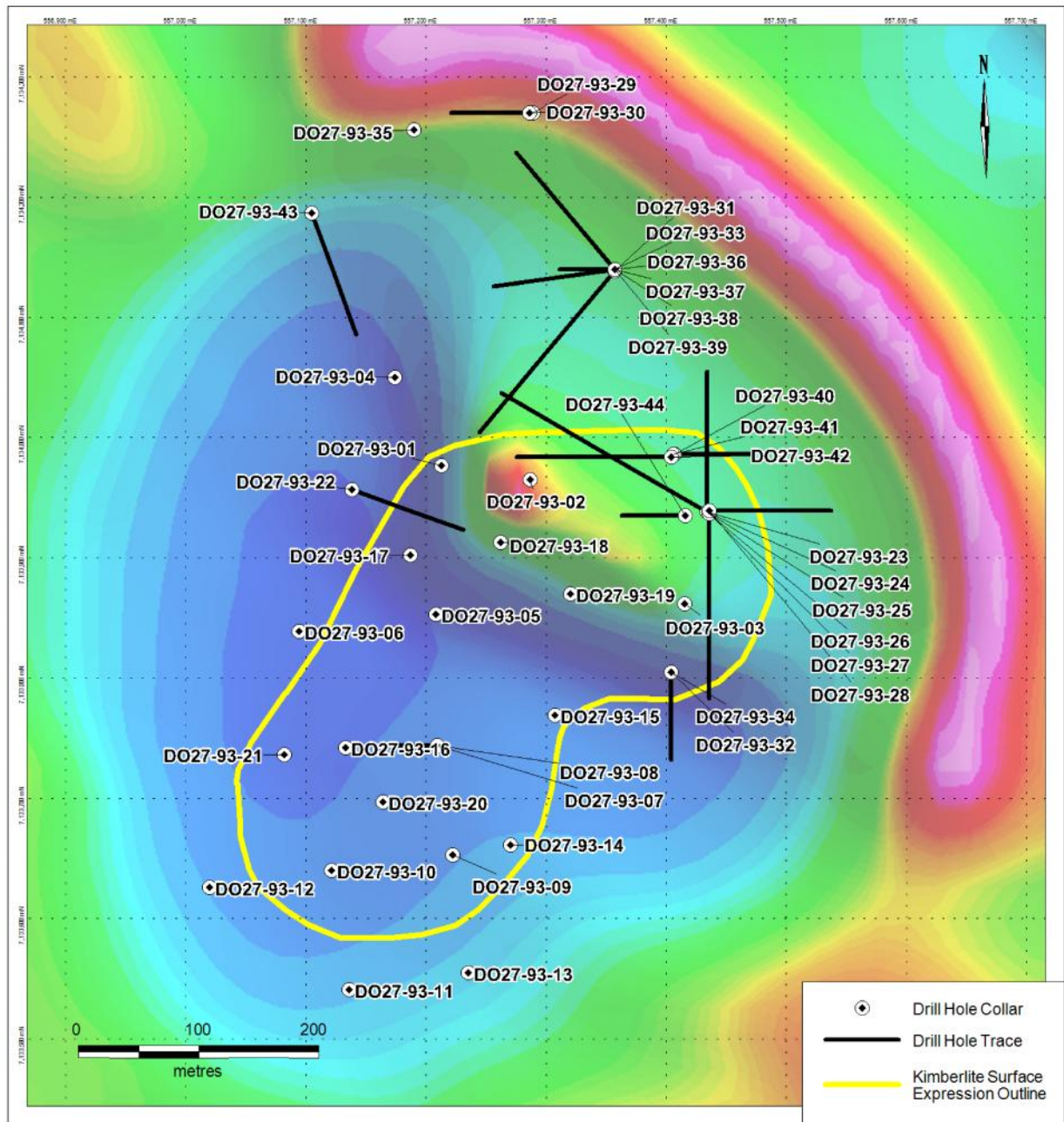




Figure 10-2: DO-27 Pre-Peregrine Drill Hole Location Map (on 2001 Falcon™ Airborne TMI base; courtesy of Peregrine, 2014)



The map displays the DO27 area with various drill holes and geological features. The legend indicates:

- Drill Hole Collar (represented by a circle with a dot)
- Kimberlite Surface Expression Outline (represented by a yellow line)
- Drill Hole Trace (represented by a black line)

The map includes a coordinate grid with UTM coordinates (Easting and Northing) and a north arrow. The elevation contours are color-coded, ranging from green (lower elevations) to red (higher elevations). The drill holes are labeled with codes such as DO27-GT06-01, DO27-GT06-02, DO27-GT06-03, DO27-GT06-04, DO27-GT06-05, DO27-GT06-06, DO27-GT06-07, DO27-GT06-08, DO27-GT06-09, DO27-GT06-10, DO27-GT06-11, DO27-GT06-12, DO27-GT06-13, DO27-GT06-14, DO27-GT06-15, DO27-GT06-16, DO27-GT06-17, DO27-GT06-18, DO27-GT06-19, DO27-GT06-20, DO27-GT06-21, DO27-GT06-22, DO27-GT06-23, DO27-GT06-24, DO27-GT06-25, DO27-GT06-26, DO27-GT06-27, DO27-GT06-28, DO27-GT06-29, DO27-GT06-30, DO27-GT06-31, DO27-GT06-32, DO27-GT06-33, DO27-GT06-34, DO27-GT06-35, DO27-GT06-36, DO27-GT06-37, DO27-GT06-38, DO27-GT06-39, DO27-GT06-40, DO27-GT06-41, DO27-GT06-42, DO27-GT06-43, DO27-GT06-44, DO27-GT06-45, DO27-GT06-46, DO27-GT06-47, DO27-GT06-48, DO27-GT06-49, DO27-GT06-50, DO27-GT06-51, DO27-GT06-52, DO27-GT06-53, DO27-GT06-54, DO27-GT06-55, DO27-GT06-56, DO27-GT06-57, DO27-GT06-58, DO27-GT06-59, DO27-GT06-60, DO27-GT06-61, DO27-GT06-62, DO27-GT06-63, DO27-GT06-64, DO27-GT06-65, DO27-GT06-66, DO27-GT06-67, DO27-GT06-68, DO27-GT06-69, DO27-GT06-70, DO27-GT06-71, DO27-GT06-72, DO27-GT06-73, DO27-GT06-74, DO27-GT06-75, DO27-GT06-76, DO27-GT06-77, DO27-GT06-78, DO27-GT06-79, DO27-GT06-80, DO27-GT06-81, DO27-GT06-82, DO27-GT06-83, DO27-GT06-84, DO27-GT06-85, DO27-GT06-86, DO27-GT06-87, DO27-GT06-88, DO27-GT06-89, DO27-GT06-90, DO27-GT06-91, DO27-GT06-92, DO27-GT06-93, DO27-GT06-94, DO27-GT06-95, DO27-GT06-96, DO27-GT06-97, DO27-GT06-98, DO27-GT06-99, DO27-GT06-100.

[illegible]

Figure 10-5: Drill Hole Location Map for DO-18 – Pre-Peregrine (on 2001 Falcon™ Airborne TMI base; courtesy of Peregrine, 2014)

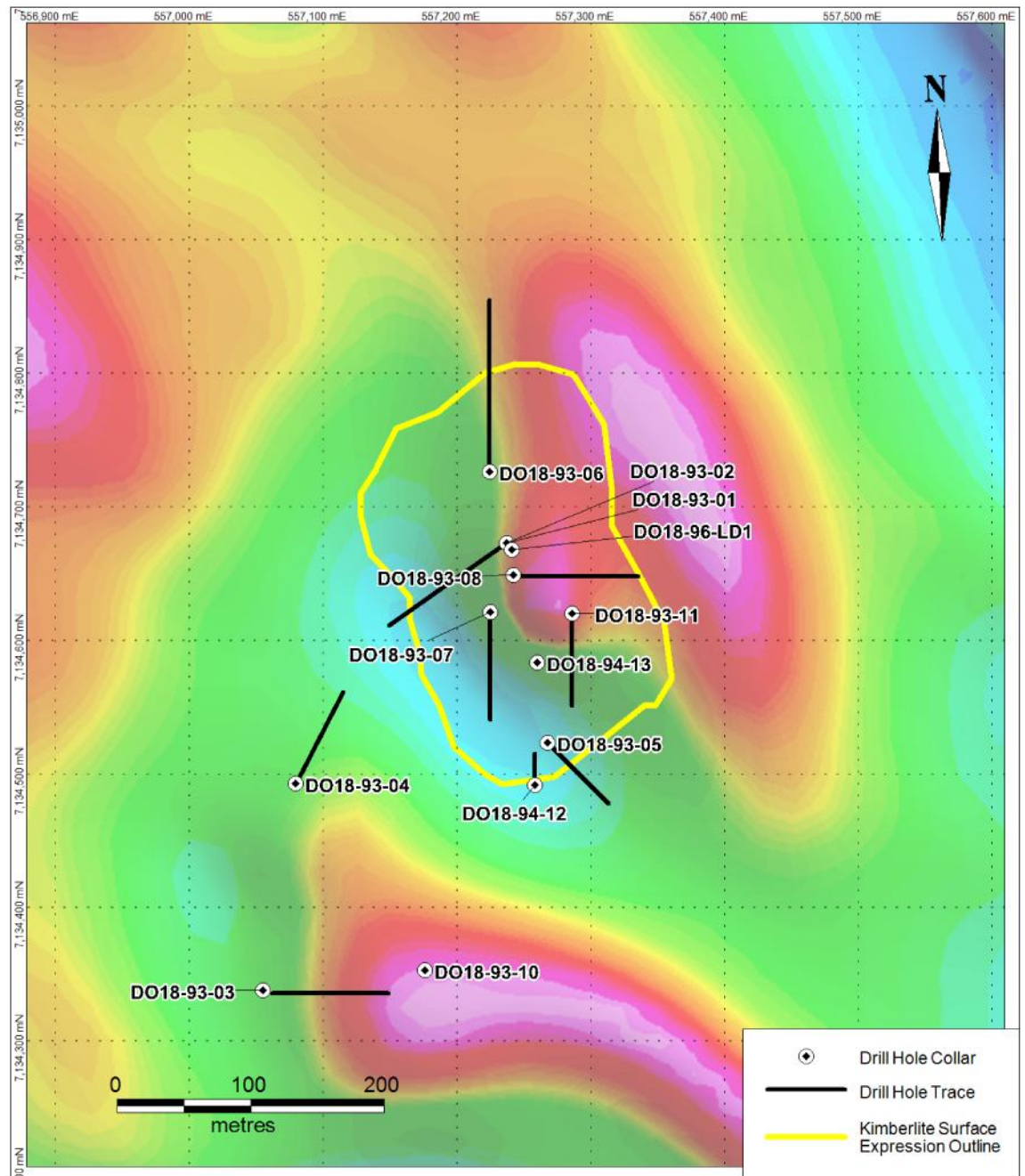


Figure 10-6: Drill Hole Location Map for DO-18 (on 2001 Falcon™ Airborne TMI base; courtesy of Peregrine, 2014)

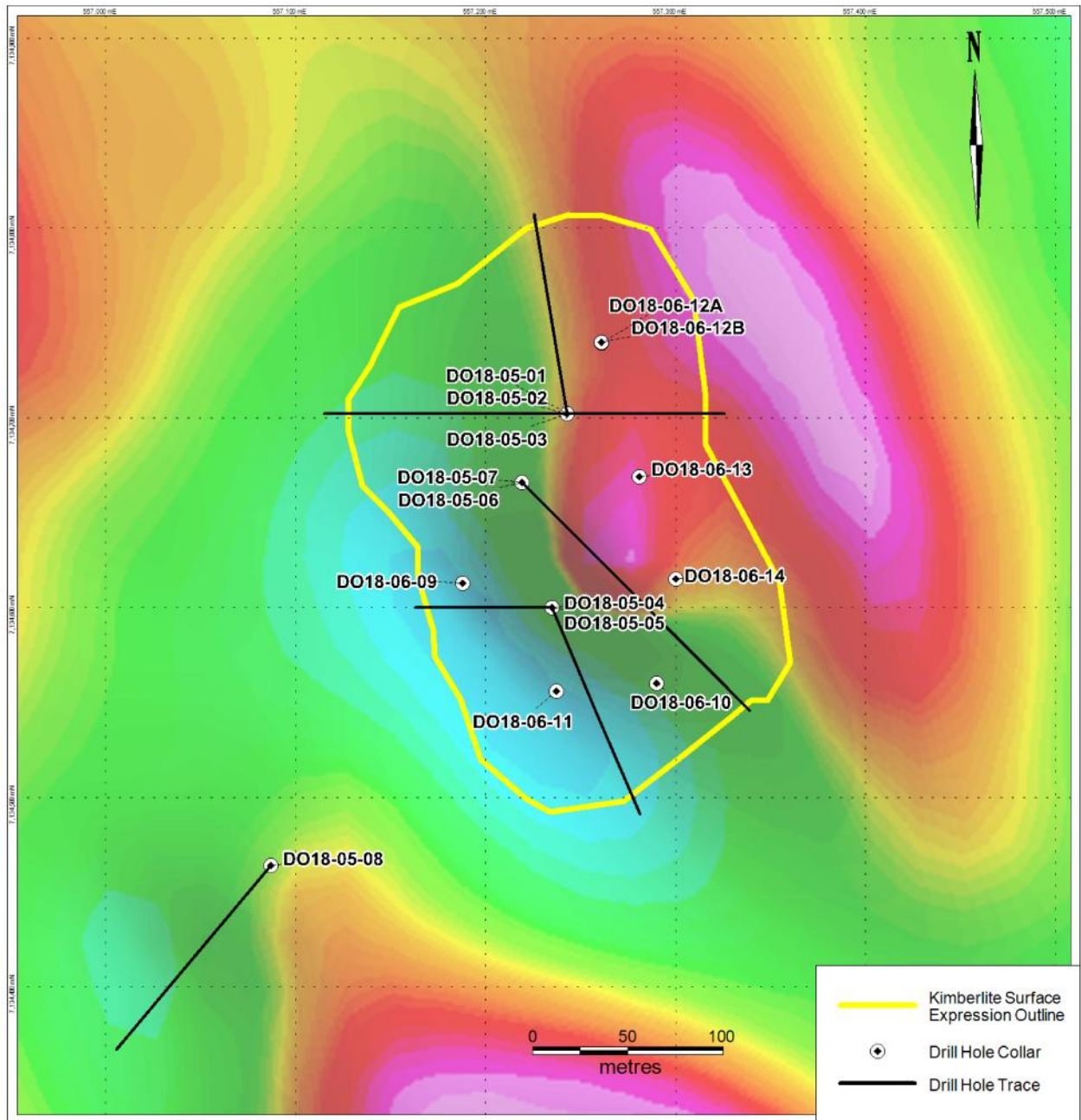


Figure 10-7: Drill Hole Location Map for the LD-2 Kimberlite (courtesy of Peregrine, 2014)

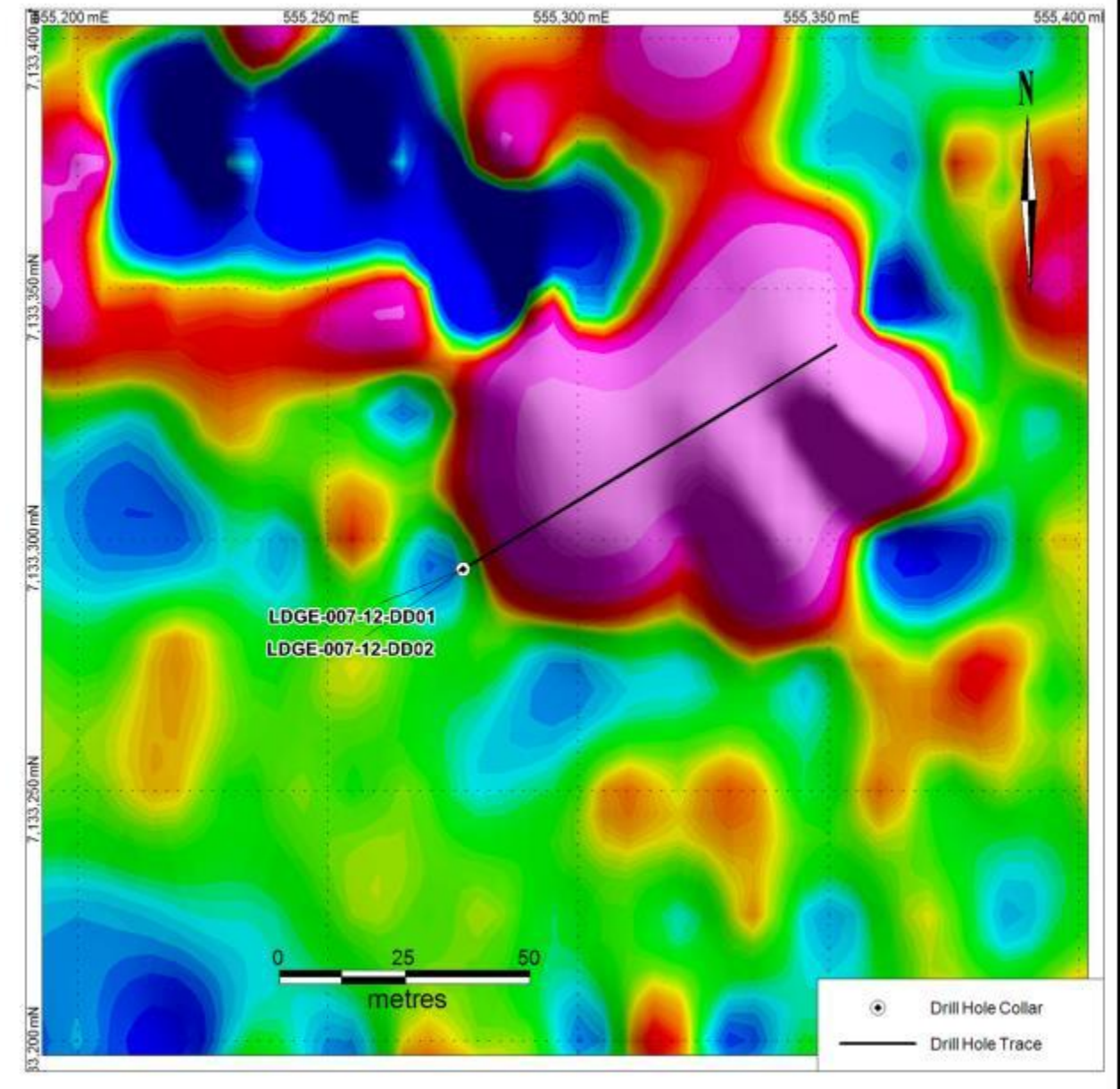
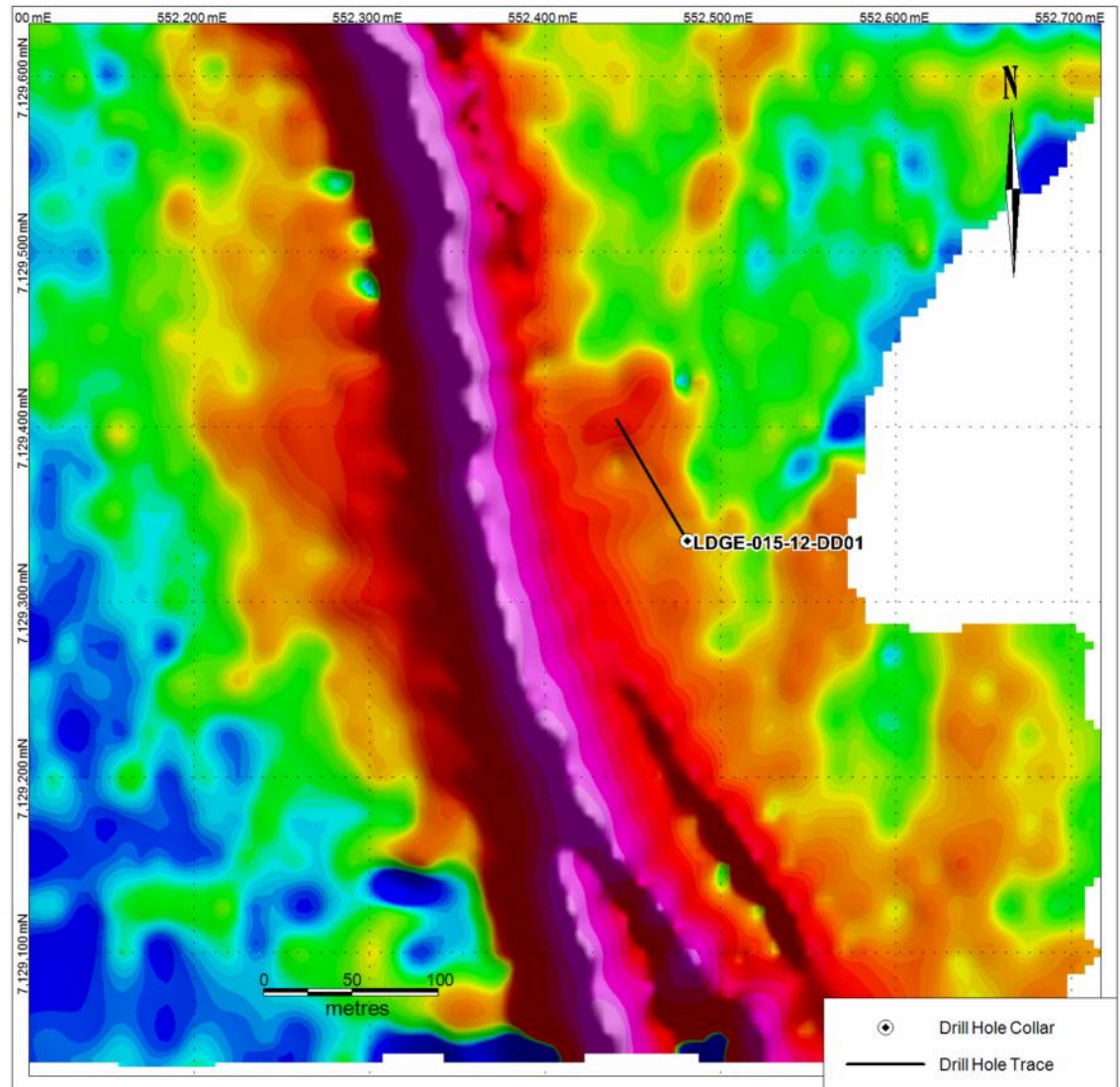


Figure 10-8: Drill Hole Location Map for the LD-3 Kimberlite (courtesy of Peregrine, 2014)



10.2 Drill Methods

10.2.1 Core Drilling

Core drilling procedures are discussed in Peregrine (2007a). Core drilling was accomplished using wireline tools. Holes were cased through overburden or water and into bedrock. H- and N-sized tools (63.5 and 47.6 mm respectively) were used for most of the drilling. AMEC observed core drilling procedures and found that those procedures were consistent with industry best practices.

10.2.2 Reverse Circulation (RC) Drilling

The RC rigs drilled holes with tricone and wing bits of varying diameters from 34.925 cm to 60.96 cm using an air assisted, reverse-flood, closed circulation system to minimize the potential for diamond breakage. Procedures are discussed in Peregrine (2007c). Holes were cased through overburden or, when drilled on ice on the lake, cased from the collar to at least 5 m into bedrock.

In all of the LDD drill programs, kimberlite was separated from the air-mud mixture in a screening plant located beside the drill. The sample passed through a cyclone to separate the air from the liquid and solid mixture. The liquid and solid mixture was then passed over 1.0 mm screens to separate the liquid from the solid kimberlite. The drilling mud was then passed through cyclones to remove the fine particulate material and recycled through the drill stem. Solid kimberlite was then securely bagged and stored onsite until it was transferred to Ekati for processing.

AMEC observed RC drilling procedures and found that those procedures were consistent with industry best practices.

10.3 Geological Logging

10.3.1 Core Logging

Detailed core handling, logging, and sampling procedures are presented in and in Peregrine (2007b), Harder (2007a, c) and Coopersmith and Pell (2007). These procedures are summarized as follows:

The drill core was sealed in core boxes at the drill site once it was “quick-logged” by a project geologist to determine if it was kimberlite. The core was then transported directly to the secure onsite core logging facility where geotechnical logs were completed.

All holes containing kimberlite were then securely boxed and shipped via wheel or float plane to Peregrine's core logging facility in Yellowknife for detailed examination. Prior to logging, a complete photographic record of each core hole was taken. After the macroscopic log was completed, representative samples for petrography were selected from each core hole such that geology of each hole could be reconstructed from these samples.

10.3.2 RC Sample Logging

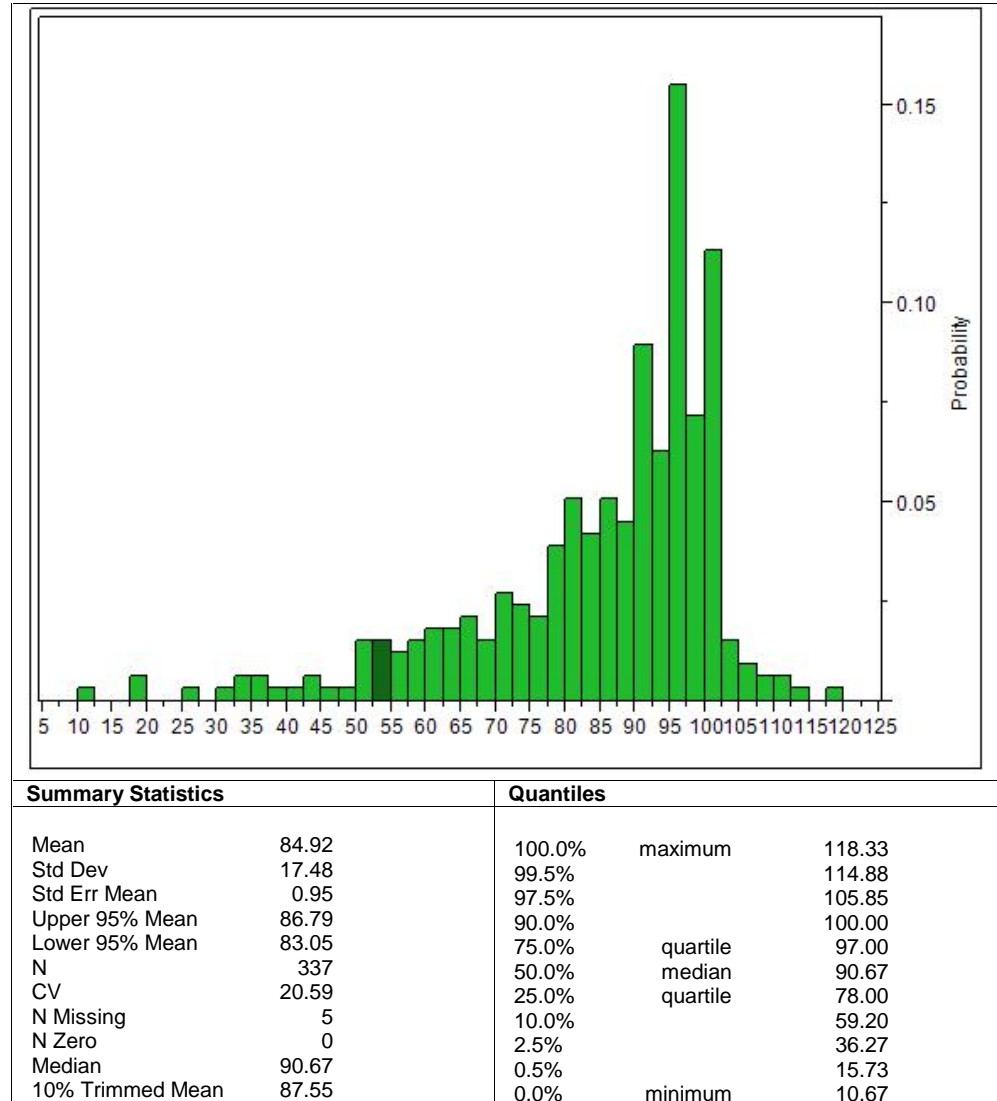
Representative samples of the RC cuttings were collected at 1-3 m intervals, depending on the rate of drilling. Procedures are discussed in Peregrine (2007c). Material collected was placed in plastic containers be logged at a later date. Logging consisted of lithological identification and alteration logging.

10.4 Recovery

Core recovery was measured for each run of core and, at DO-27, averages about 85% overall (Figure 10-9). AMEC considers this to be adequate because core is used primarily to control the geological model. No grade information is based on core.



Figure 10-9: Summary Histogram of Core Recovery at DO-27



RC recovery was not estimated. Samples are screened at the collar and all -1 mm material is removed so there is no realistic way to estimate recovery.

10.5 Collar Surveys

Collars for 2005-2006 holes were located primarily with a differential global positioning system (DGPS) instrument. Some holes were located with hand-held GPS units. Most

surveys for 2007 collars were performed by Subarctic Surveys using DGPS equipment. Four 2007 collars were surveyed by Peregrine using DGPS.

10.6 Downhole Surveys

In 2005, core holes were surveyed down hole using a Sperry Sun single-shot magnetic down hole tool every 50 m to 100 m. In 2006, drill holes were primarily vertical and not surveyed down hole. Few inclined holes were completed. In 2007, drill holes were surveyed with a FlexIT™ magnetic single-shot instrument. The 2007 LDD holes were not surveyed. In 2012, all drill holes were surveyed with a Reflex EZ-Shot magnetic single-shot instrument. Both the FlexIT™ and the Reflex EZ-Shot instruments are widely used in the mineral industry and provide reliable results.

10.7 Geotechnical and Hydrological Drilling

Ten geotechnical holes were drilled at DO-27 in 2006-2007. Those holes were logged for recovery, rock quality designation (RQD), fracture density, joint conditions, rock strength, weathering, and faults. These data provide adequate data for preliminary mine planning. Additional data may be required for detailed mine planning. The geotechnical data were used to assign zone codes to each of the material types in the block model.

10.8 Metallurgical Drilling

Two holes, DO27-07-33 and DO27-07-34 were drilled at DO-27 for metallurgical test work and as pilots for LDD holes.

10.9 Sample Length/True Thickness

Core was used only to constrain the geological model at DO-27 and the location of contacts in the core is adequately known to allow construction of the geological model.

RC holes were used to estimate grade at DO-27. These were all vertical holes so the thickness indicated is the true thickness of the kimberlite intercept.

10.10 Summary of Drill Intercepts

Table 10-3 summarizes the kimberlite intercepts at DO-27.

Table 10-3: Summary of Kimberlite Intercepts at DO-27

Hole_Id	From	To	Interval	Lithology	Type
DO27-05-01	56.5	58.52	2.02	Kimb-1	Core
DO27-05-02	56	459.5	403.5	Kimb-1	Core
DO27-05-03	59	230	171	Kimb-1	Core
DO27-05-04	19	63.4	44.4	Kimb-1	Core
DO27-05-04	63.4	112.5	49.1	Kimb-3	Core
DO27-05-05	21.8	85.8	64	Kimb-1	Core
DO27-05-06	37	49.5	12.5	Kimb-1	Core
DO27-05-06	49.5	82.9	33.4	Kimb-3	Core
DO27-05-07	20.5	104.5	84	Kimb-1	Core
DO27-05-07	104.5	131	26.5	Kimb-3	Core
DO27-05-07	138.7	218	79.3	Kimb-2	Core
DO27-05-08	20.8	290	269.2	Kimb-1	Core
DO27-05-09	9	95.8	86.8	Kimb-1	Core
DO27-05-09	95.8	117	21.2	Kimb-3	Core
DO27-05-09	125.4	155	29.6	Kimb-2	Core
DO27-05-10	17	100.3	83.3	Kimb-1	Core
DO27-05-10	100.3	123	22.7	Kimb-3	Core
DO27-05-11	44.5	223.5	179	Kimb-1	Core
DO27-05-12	36	36.7	0.7	Kimb-2	Core
DO27-05-RC1	59	209	150	Kimb-1	LDD
DO27-05-RC2	56.5	60	3.5	Kimb-1	LDD
DO27-05-RC2	60	124	64	Kimb-1	LDD
DO27-05-RC3	60	190	130	Kimb-1	LDD
DO27-05-RC4	57	62	5	Kimb-1	LDD
DO27-05-RC4	62	93	31	Kimb-1	LDD
DO27-05-RC5	60	61	1	Kimb-1	LDD
DO27-05-RC5	61	83	22	Kimb-1	LDD
DO27-05-RC6	54	77	23	Kimb-1	LDD
DO27-06-13	35.4	86.3	50.9	Kimb-1	Core
DO27-06-13	86.3	135.4	49.1	Kimb-3	Core
DO27-06-13	135.4	140	4.6	Kimb-1	Core
DO27-06-14	35.4	122.6	87.2	Kimb-1	Core
DO27-06-14	122.6	145.1	22.5	Kimb-3	Core
DO27-06-14	145.1	178.6	33.5	Kimb-2	Core
DO27-06-15	45.5	171.8	126.3	Kimb-1	Core
DO27-06-15	171.8	203.5	31.7	Kimb-2	Core
DO27-06-15	203.5	212.1	8.6	Kimb-1	Core
DO27-06-16	56	305	249	Kimb-1	Core
DO27-06-17	47.5	174.3	126.8	Kimb-1	Core
DO27-06-17	174.3	203	28.7	Kimb-2	Core
DO27-06-18	54.1	250	195.9	Kimb-1	Core
DO27-06-19	55.9	251	195.1	Kimb-1	Core
DO27-06-20	54.7	308	253.3	Kimb-1	Core
DO27-06-21	46.6	258.5	211.9	Kimb-1	Core
DO27-06-22	47	269	222	Kimb-1	Core
DO27-06-23	57	298.4	241.4	Kimb-1	Core
DO27-06-24	53.2	299.8	246.6	Kimb-1	Core
DO27-06-25	13.7	34.4	20.7	Kimb-1	Core
DO27-06-26	34	72.7	38.7	Kimb-1	Core
DO27-06-26	72.7	86.2	13.5	Kimb-1	Core
DO27-06-26	121	138.7	17.7	Kimb-2	Core
DO27-06-26	174.6	178.3	3.7	Kimb-2	Core

Hole_Id	From	To	Interval	Lithology	Type
DO27-06-27	32.5	100	67.5	Kimb-1	Core
DO27-06-27	100	135.3	35.3	Kimb-3	Core
DO27-06-27	135.3	187.3	52	Kimb-2	Core
DO27-06-28	28	75.3	47.3	Kimb-1	Core
DO27-06-28	75.3	90	14.7	Kimb-3	Core
DO27-06-28	119.5	165	45.5	Kimb-2	Core
DO27-06-29	16.7	66	49.3	Kimb-1	Core
DO27-06-29	66	91.8	25.8	Kimb-3	Core
DO27-06-29	115.5	164.6	49.1	Kimb-2	Core
DO27-06-30	10	78.5	68.5	Kimb-1	Core
DO27-06-30	78.5	108	29.5	Kimb-3	Core
DO27-06-30	128.2	175.3	47.1	Kimb-2	Core
DO27-06-31	31	126.9	95.9	Kimb-1	Core
DO27-06-31	126.9	214.1	87.2	Kimb-3	Core
DO27-06-31	214.1	236.5	22.4	Kimb-2	Core
DO27-06-31	247	352	105	Kimb-1	Core
DO27-06-32	31.6	97.4	65.8	Kimb-1	Core
DO27-06-32	97.4	146.3	48.9	Kimb-3	Core
DO27-06-32	146.3	204.7	58.4	Kimb-2	Core
DO27-06-32	204.7	256.4	51.7	Kimb-1	Core
DO27-06-32	302.1	343.6	41.5	Kimb-2	Core
DO27-07-33	61.5	88.5	27	Kimb-1	Core
DO27-07-33	88.5	275	186.5	Kimb-1	Core
DO27-07-34	56.3	276	219.7	Kimb-1	Core
DO27-07-36	66.4	92.4	26	Kimb-1	Core
DO27-07-36	171.1	195.3	24.2	Kimb-1	Core
DO27-07-36	195.3	199	3.7	Kimb-1	Core
DO27-07-37	119.5	142	22.5	Kimb-1	Core
DO27-07-38	148	208	60	Kimb-1	Core
DO27-07-39	89	112.9	23.9	Kimb-1	Core
DO27-07-39	112.9	215.2	102.3	Kimb-1	Core
DO27-07-40	60.2	85.2	25	Kimb-1	Core
DO27-07-40	199	212.4	13.4	Kimb-2	Core
DO27-07-40	212.4	232	19.6	Kimb-1	Core
DO27-07-40	232	250	18	Kimb-1	Core
DO27-07-41	166.4	248	81.6	Kimb-1	Core
DO27-07-42	228.7	287	58.3	Kimb-1	Core
DO27-07-43	179.6	220.8	41.2	Kimb-1	Core
DO27-07-43	220.8	241.7	20.9	Kimb-1	Core
DO27-07-44	146.1	159.3	13.2	Kimb-1	Core
DO27-07-44	159.3	286	126.7	Kimb-1	Core
DO27-07-45	237.9	265	27.1	Kimb-1	Core
DO27-07-45	265	280	15	Kimb-1	Core
DO27-07-46	53.5	66	12.5	Kimb-1	Core
DO27-07-46	66	257.9	191.9	Kimb-1	Core
DO27-07-46	257.9	265	7.1	Kimb-1	Core
DO27-07-47	123.6	199	75.4	Kimb-1	Core
DO27-07-47	199	233	34	Kimb-1	Core
DO27-07-48	223.6	240	16.4	Kimb-1	Core
DO27-07-49	155.6	342.3	186.7	Kimb-1	Core
DO27-07-50	276.5	476.6	200.1	Kimb-1	Core
DO27-07-51	295	374	79	Kimb-1	Core
DO27-07-52	187	425.5	238.5	Kimb-1	Core
DO27-07-53	171	385.2	214.2	Kimb-1	Core

Hole_Id	From	To	Interval	Lithology	Type
DO27-07-54	167	440	273	Kimb-1	Core
DO27-07-55	419	545	126	Kimb-1	Core
DO27-07-56	239	271	32	Kimb-1	Core
DO27-07-57	24	160	136	Kimb-1	Core
DO27-93-01	41	53	12	Kimb-1	Core
DO27-93-02	49	56.5	7.5	Kimb-1	Core
DO27-93-03	26.4	80	53.6	Kimb-1	Core
DO27-93-05	53	61.7	8.7	KIMB-1	Core
DO27-93-05	62.2	138	75.8	Kimb-1	Core
DO27-93-05	139.9	143	3.1	KIMB-2	Core
DO27-93-07	58.8	200	141.2	Kimb-1	Core
DO27-93-09	42	110.4	68.4	Kimb-1	Core
DO27-93-10	44	101.5	57.5	Kimb-1	Core
DO27-93-12	26.1	26.3	0.2	KIMB-2	Core
DO27-93-14	37.2	41.6	4.4	KIMB-1	Core
DO27-93-15	47	52.7	5.7	Kimb-1	Core
DO27-93-15	85.8	86	0.2	KIMB-2	Core
DO27-93-16	56	215	159	Kimb-1	Core
DO27-93-17	53	84.5	31.5	Kimb-1	Core
DO27-93-18	48	77.9	29.9	Kimb-1	Core
DO27-93-19	49	145	96	Kimb-1	Core
DO27-93-19	145	153	8	KIMB-1	Core
DO27-93-19	153	155	2	KIMB-2	Core
DO27-93-20	56	73.2	17.2	Kimb-1	Core
DO27-93-20	73.2	161.5	88.3	Kimb-1	Core
DO27-93-21	53	78	25	Kimb-1	Core
DO27-93-22	95.5	100.3	4.8	KIMB-2	Core
DO27-93-22	100.7	111.8	11.1	KIMB-2	Core
DO27-93-22	139.1	142.2	3.1	KIMB-2	Core
DO27-93-22	147	161.35	14.35	KIMB-2	Core
DO27-93-22	170.7	184.6	13.9	KIMB-2	Core
DO27-93-23	42.5	51.3	8.8	Kimb-1	Core
DO27-93-23	51.3	52	0.7	Kimb-1	Core
DO27-93-23	52	55.3	3.3	KIMB-2	Core
DO27-93-23	77.4	85	7.6	KIMB-2	Core
DO27-93-24	33.5	52.8	19.3	Kimb-1	Core
DO27-93-24	77.1	78.2	1.1	KIMB-2	Core
DO27-93-24	78.2	104.1	25.9	KIMB-2	Core
DO27-93-24	119.9	142.7	22.8	KIMB-2	Core
DO27-93-25	35	58	23	Kimb-1	Core
DO27-93-25	99.2	130.8	31.6	KIMB-2	Core
DO27-93-25	140.3	164	23.7	KIMB-2	Core
DO27-93-26	45.7	57.2	11.5	Kimb-1	Core
DO27-93-26	57.2	60	2.8	Kimb-1	Core
DO27-93-26	60	71	11	Kimb-1	Core
DO27-93-26	71.4	81.7	10.3	KIMB-1	Core
DO27-93-26	83.7	90	6.3	KIMB-1	Core
DO27-93-26	135.1	136.3	1.2	KIMB-2	Core
DO27-93-26	160.6	166.1	5.5	KIMB-1	Core
DO27-93-26	166.1	166.9	0.8	KIMB-1	Core
DO27-93-26	178	186.1	8.1	KIMB-1	Core
DO27-93-26	186.1	189.1	3	KIMB-1	Core
DO27-93-26	189.1	192.2	3.1	KIMB-1	Core
DO27-93-26	192.2	194	1.8	KIMB-1	Core

Hole_Id	From	To	Interval	Lithology	Type
DO27-93-26	194	194.9	0.9	KIMB-1	Core
DO27-93-27	49.7	78.7	29	KIMB-1	Core
DO27-93-27	141.9	207.8	65.9	KIMB-2	Core
DO27-93-28	32	54.8	22.8	KIMB-1	Core
DO27-93-28	83.6	114.6	31	KIMB-2	Core
DO27-93-29	92.3	92.6	0.3	KIMB-2	Core
DO27-93-30	43.8	76.6	32.8	KIMB-1	Core
DO27-93-31	15.6	45.2	29.6	KIMB-1	Core
DO27-93-31	85	97.7	12.7	KIMB-1	Core
DO27-93-31	119.5	127.8	8.3	KIMB-2	Core
DO27-93-31	128.2	145	16.8	KIMB-2	Core
DO27-93-31	145	175	30	KIMB-2	Core
DO27-93-31	178.1	184.6	6.5	KIMB-2	Core
DO27-93-32	29	32	3	KIMB-1	Core
DO27-93-32	32	38.2	6.2	KIMB-1	Core
DO27-93-32	38.2	102.6	64.4	Kimb-1	Core
DO27-93-32	102.6	121.7	19.1	KIMB-1	Core
DO27-93-32	121.7	132.5	10.8	KIMB-1	Core
DO27-93-33	16.1	71	54.9	KIMB-1	Core
DO27-93-34	35	56.6	21.6	KIMB-2	Core
DO27-93-35	33.9	44.1	10.2	KIMB-1	Core
DO27-93-35	44.9	48.2	3.3	KIMB-1	Core
DO27-93-35	48.2	61.4	13.2	KIMB-1	Core
DO27-93-35	61.4	71.2	9.8	KIMB-1	Core
DO27-93-36	15.8	97.4	81.6	KIMB-1	Core
DO27-93-36	97.4	103.8	6.4	KIMB-1	Core
DO27-93-36	106.6	121.4	14.8	KIMB-2	Core
DO27-93-37	8.7	20.4	11.7	KIMB-1	Core
DO27-93-37	20.4	23.5	3.1	KIMB-1	Core
DO27-93-37	23.5	43.5	20	KIMB-1	Core
DO27-93-37	82.8	84.3	1.5	KIMB-2	Core
DO27-93-37	90.6	92.6	2	KIMB-2	Core
DO27-93-38	17.4	32.5	15.1	KIMB-1	Core
DO27-93-39	17.4	44.1	26.7	KIMB-1	Core
DO27-93-39	44.1	49.2	5.1	KIMB-1	Core
DO27-93-39	49.2	51.4	2.2	KIMB-1	Core
DO27-93-39	70.7	88.4	17.7	KIMB-1	Core
DO27-93-39	103.1	108.2	5.1	KIMB-1	Core
DO27-93-39	113.9	114.7	0.8	KIMB-2	Core
DO27-93-40	9.1	46.2	37.1	Kimb-1	Core
DO27-93-40	81.4	100.5	19.1	KIMB-2	Core
DO27-93-40	100.5	103.3	2.8	KIMB-2	Core
DO27-93-40	114.2	118.7	4.5	KIMB-2	Core
DO27-93-40	119.2	126.7	7.5	KIMB-2	Core
DO27-93-41	23	49.9	26.9	Kimb-1	Core
DO27-93-41	76.5	97.8	21.3	KIMB-2	Core
DO27-93-41	122.2	142	19.8	KIMB-2	Core
DO27-93-41	144.8	150.6	5.8	KIMB-2	Core
DO27-93-42	37.7	67.3	29.6	KIMB-1	Core
DO27-93-42	67.3	73.7	6.4	KIMB-1	Core
DO27-93-42	114	114.8	0.8	KIMB-2	Core
DO27-93-42	148.7	177	28.3	KIMB-2	Core
DO27-93-42	197	200	3	KIMB-2	Core
DO27-93-44	41.2	68	26.8	Kimb-1	Core

Hole_Id	From	To	Interval	Lithology	Type
DO27-93-44	68	77.1	9.1	KIMB-1	Core
DO27-93-44	77.9	78.6	0.7	KIMB-1	Core
DO27-93-44	79.8	81.8	2	KIMB-1	Core
DO27-93-44	81.8	89.3	7.5	KIMB-2	Core
DO27-93-44	115.2	126.7	11.5	KIMB-2	Core
DO27-93-44	127.2	143.8	16.6	KIMB-2	Core
DO27-93-44	146.1	148.2	2.1	KIMB-2	Core
DO27L-06-01	40.2	63	22.8	Kimb-1	LDD
DO27L-06-01	63	84.75	21.75	Kimb-1	LDD
DO27L-06-02	52	200	148	Kimb-1	LDD
DO27L-06-02	200	310	110	Kimb-1	LDD
DO27L-06-02	310	403	93	Kimb-1	LDD
DO27L-06-03	42	127	85	Kimb-1	LDD
DO27L-06-03	127	150	23	Kimb-1	LDD
DO27L-06-03	150	228	78	Kimb-2	LDD
DO27L-06-04	39	152	113	Kimb-1	LDD
DO27L-06-04	152	207	55	Kimb-2	LDD
DO27L-06-04	207	234	27	Kimb-1	LDD
DO27L-06-04	234	245.5	11.5	Kimb-1	LDD
DO27L-06-05	42	53	11	Kimb-1	LDD
DO27L-06-06	48	180.1	132.1	Kimb-1	LDD
DO27L-06-07	55.5	210	154.5	Kimb-1	LDD
DO27L-06-07	210	314	104	Kimb-1	LDD
DO27L-06-08	51	170	119	Kimb-1	LDD
DO27L-06-08	170	240.59	71	Kimb-1	LDD
DO27L-06-09	50	235	185	Kimb-1	LDD
DO27L-06-09	235	383	148	Kimb-1	LDD
DO27L-06-10	57	110	53	Kimb-1	LDD
DO27L-06-10	110	145	35	Kimb-1	LDD
DO27L-06-12	56	63	7	Kimb-1	LDD
DO27L-06-12	63	109	46	Kimb-1	LDD
DO27L-07-01	56.5	90	33.5	Kimb-1	LDD
DO27L-07-01	90	106	16	Kimb-1	LDD
DO27L-07-01	106	137	31	Kimb-1	LDD
DO27L-07-01	137	138	1	Kimb-1	LDD
DO27L-07-01	138	141	3	Kimb-1	LDD
DO27L-07-01	141	142	1	Kimb-1	LDD
DO27L-07-01	142	177	35	Kimb-1	LDD
DO27L-07-01	177	180	3	Kimb-1	LDD
DO27L-07-01	180	256.01	76	Kimb-1	LDD
DO27L-07-02	53.4	57	3.6	Kimb-1	LDD
DO27L-07-02	57	61	4	Kimb-1	LDD
DO27L-07-02	61	158	97	Kimb-1	LDD
DO27L-07-02	158	159	1	Kimb-1	LDD
DO27L-07-02	159	258.5	99.5	Kimb-1	LDD
DO27L-07-03	55	56	1	Kimb-1	LDD
DO27L-07-03	56	127.83	71.8	Kimb-1	LDD
DO27L-07-04	44.5	94	49.5	Kimb-1	LDD
DO27L-07-04	95	98.8	3.8	Kimb-1	LDD
DO27L-07-04	98.8	102	3.2	Kimb-1	LDD
DO27L-07-04	102	125	23	Kimb-1	LDD
DO27L-07-04	125	126	1	Kimb-1	LDD
DO27L-07-04	126	130	4	Kimb-1	LDD
DO27L-07-04	130	145	15	Kimb-3	LDD

Hole_Id	From	To	Interval	Lithology	Type
DO27L-07-04	145	148	3	Kimb-3	LDD
DO27L-07-04	148	150	2	Kimb-3	LDD
DO27L-07-04	150	162	12	Kimb-3	LDD
DO27L-07-04	162	163.14	1.1	Kimb-3	LDD
DO27L-07-05	51	170	119	Kimb-1	LDD
DO27L-07-05	170	171	1	Kimb-3	LDD
DO27L-07-05	171	176	5	Kimb-3	LDD
DO27L-07-05	176	180	4	Kimb-3	LDD
DO27L-07-05	180	192	12	Kimb-3	LDD
DO27L-07-05	192	199	7	Kimb-3	LDD
DO27L-07-05	199	205	6	Kimb-3	LDD
DO27L-07-05	205	244	39	Kimb-3	LDD
DO27L-07-05	244	255	11	Kimb-3	LDD
DO27L-07-05	255	269	14	Kimb-3	LDD
DO27L-07-05	269	275	6	Kimb-3	LDD
DO27L-07-05	275	280.83	5.8	Kimb-3	LDD
DO27L-07-06	36.9	150.69	113.8	Kimb-1	LDD
DO27L-07-08	39.9	48	8.1	Kimb-1	LDD
DO27L-07-08	48	125	77	Kimb-1	LDD
DO27L-07-08	125	129	4	Kimb-1	LDD
DO27L-07-08	129	192.8	63.8	Kimb-1	LDD
DO27L-07-09	54	152	98	Kimb-1	LDD
DO27L-07-09	152	166	14	Kimb-1	LDD
DO27L-07-09	166	169	3	Kimb-3	LDD
DO27L-07-09	169	175.01	6	Kimb-1	LDD
DO27L-07-10	53.7	275.22	221.5	Kimb-1	LDD
DO27L-07-11	57	275.3	218.3	Kimb-1	LDD
DO27L-07-12	48	160.06	112.1	Kimb-1	LDD
DO27L-07-13	35	42	7	Kimb-1	LDD
DO27L-07-13	43	51	8	Kimb-1	LDD
DO27L-07-13	51	158.78	107.8	Kimb-1	LDD
DO27L-07-14	60	63.5	3.5	Kimb-1	LDD
DO27L-07-14	63.5	123	59.5	Kimb-1	LDD
DO27L-07-14	123	132	9	Kimb-1	LDD
DO27L-07-14	132	144	12	Kimb-1	LDD
DO27L-07-14	144	157	13	Kimb-1	LDD
DO27L-07-14	157	185.97	28.97	Kimb-1	LDD
DO27L-07-16	58	141	83	Kimb-1	LDD
DO27L-07-16	141	145	4	Kimb-1	LDD
DO27L-07-16	145	157	12	Kimb-1	LDD
DO27L-07-16	157	165	8	Kimb-1	LDD
DO27L-07-16	165	198	33	Kimb-1	LDD
DO27L-07-16	198	201	3	Kimb-1	LDD
DO27L-07-16	201	216.39	15.39	Kimb-1	LDD
DO27L-07-17	55.8	57	1.2	Kimb-1	LDD
DO27L-07-17	57	266.57	209.57	Kimb-1	LDD
DO27L-07-18	58	277.12	219.12	Kimb-1	LDD
DO27L-07-19	54.5	214	159.5	Kimb-1	LDD
DO27L-07-19	214	216	2	Kimb-1	LDD
DO27L-07-19	216	220	4	Kimb-1	LDD
DO27L-07-19	220	232	12	Kimb-1	LDD
DO27L-07-19	232	286	54	Kimb-1	LDD
DO27L-07-19	286	295.05	9.05	Kimb-1	LDD
DO27L-07-20	46.5	50	3.5	Kimb-1	LDD

Hole_Id	From	To	Interval	Lithology	Type
DO27L-07-20	50	52	2	Kimb-1	LDD
DO27L-07-20	52	119	67	Kimb-1	LDD
DO27L-07-20	119	136.59	17.67	Kimb-2	LDD
DO27L-07-22	55.5	277.01	221.5	Kimb-1	LDD
DO27L-07-23	54.5	77	22.5	Kimb-1	LDD
DO27L-07-23	77	87	10	Kimb-1	LDD
DO27L-07-23	87	256.45	169.45	Kimb-1	LDD
DO27L-07-24	54.6	284.04	229.4	Kimb-1	LDD
DO27L-07-25	54.6	275.71	221.1	Kimb-1	LDD
DO27L-NE-01	14	22	8	Kimb-1	LDD
DO27L-NE-01	22	61	39	Kimb-1	LDD
DO27L-NE-01	61	63	2	Kimb-2	LDD
DO27L-NE-01	63	79	16	Kimb-1	LDD
DO27L-NE-01	79	82	3	Kimb-2	LDD
DO27L-NE-01	82	95	13	Kimb-3	LDD
DO27L-NE-01	95	96	1	Kimb-3	LDD
DO27L-NE-01	96	98	2	Kimb-3	LDD
DO27L-NE-01	98	98.31	0.3	Kimb-3	LDD
DO27L-NE-02	31	41	10	Kimb-1	LDD
DO27L-NE-02	41	80	39	Kimb-1	LDD
DO27L-NE-02	80	86	6	Kimb-1	LDD
DO27L-NE-02	86	119.45	33.5	Kimb-3	LDD
DO27L-NE-03	4	14	10	Kimb-1	LDD
DO27L-NE-03	14	25	11	Kimb-1	LDD
DO27L-NE-03	25	95	70	Kimb-1	LDD
DO27L-NE-03	95	104.59	9.6	Kimb-3	LDD
DO27L-NE-04	7.7	38	30.3	Kimb-1	LDD
DO27L-NE-04	38	96	58	Kimb-1	LDD
DO27L-NE-04	96	97	1	Kimb-3	LDD
DO27L-NE-04	97	118.3	21.3	Kimb-3	LDD
DO27L-NE-05	28.6	32.6	4	Kimb-1	LDD
DO27L-NE-05	32.6	35	2.4	Kimb-1	LDD
DO27L-NE-05	35	98.44	63.44	Kimb-1	LDD
DO27L-NE-05	98.4	111	12.6	Kimb-1	LDD
DO27L-NE-05	111	131	20	Kimb-3	LDD
DO27L-NE-05	131	160.44	29.44	Kimb-2	LDD
DO27L-NE-06	27.8	40	12.2	Kimb-1	LDD
DO27L-NE-06	40	97	57	Kimb-1	LDD
DO27L-NE-06	97	102.13	5.13	Kimb-3	LDD
DO27-GT06-01	332	484	152	Kimb-1	Geotech
DO27-GT06-05	303.7	331.2	27.5	Kimb-2	Geotech
DO27-GT06-05	347	361.2	14.2	Kimb-1	Geotech
DO27-GT06-05	361.2	506.4	145.2	Kimb-1	Geotech
DO27-GT06-05	512.7	535.4	22.7	Kimb-2	Geotech
DO27-GT06-06	295	378.7	83.7	Kimb-2	Geotech
DO27-GT06-06	378.7	427	48.3	Kimb-1	Geotech
DO27-GT06-07	33	301.8	268.8	Kimb-2	Geotech
DO27-GT06-09	17.1	92.1	75	Kimb-1	Geotech
DO27-GT06-09	92.1	98.1	6	Kimb-3	Geotech

10.11 Comments on Section 10

AMEC reviewed drilling procedures and visited the drills during operation. AMEC is of the opinion that the drill equipment and procedures were appropriate for the intended tasks and that drilling was performed to industry standards.

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Sampling Methods

11.1.1 Core Drill Sampling

Core was sampled for macro- and microdiamonds and submitted for caustic fusion analysis as deemed necessary. Sampling of DO-27 and DO-18 core was done to industry standards by, or under the supervision of, Margaret Harder of Mineral Services Canada. Sampling of the 2012 discoveries, LD-2 and LD-3 was done by Dr. Pell. All sampling was completed in Yellowknife. The sampling strategy was based on the geologic units identified by the detailed core logs. Whole pieces of core were selected and submitted for analysis with representative material from each interval left in the box.

Drill core samples were collected in 8 kg aliquots, with the sample depths recorded, in Peregrine's secure logging facility in Yellowknife. They were placed in doubled plastic bags and both the inner and outer bags were sealed with plastic cable ties. The outer bag was also sealed with a metal security tag. The sample number was written on the bag. Each bag was then placed in a plastic bucket with a tamper-evident lid and sealed. The samples were assigned individual, generic sample numbers that do not indicate their source.

The samples were placed on pallets, shrink-wrapped, strapped, and sent by truck to the SRC for caustic fusion analysis. All sampling was performed according to industry standards. Security seals were checked upon receipt by SRC and any damage noted. SRC reported that all samples arrived at the laboratory intact and that there were no discrepancies noted.

All chain of custody information was kept in a table, which was sent to Peregrine's Vancouver office together with geological and sample location information. Representative hand samples of the kimberlite were collected. If there was more than one kimberlite type encountered or more than one locality of the one kimberlite, a sample from every type/area was collected and referenced to the microdiamond sample.

Mineral chemistry samples were also collected from DO-27. The samples were selected to test lithologies of uncertain affinity in DO-27. A total of approximately 10 kg per sample were collected over 20 to 50 m intervals with the intent of providing a representative sample over a large distance to avoid preferential sampling of individual

beds or units. Each sample consisted of greater than 25 pieces of core, each piece less than 10 cm long.

Samples were placed in plastic bags and then in plastic pails labelled with the drill hole and depth interval corresponding to the sample; a metal tag with the same identification information was placed inside each plastic bag. The samples were then shipped to Mineral Services Canada, who performed the mineral chemical analyses.

11.1.2 Reverse Circulation Drill Sampling

Samples were collected by Peregrine by large diameter reverse circulation drilling as described in Section 10.2.2. Protocols for this work were developed by Peregrine and its consultants, and are described in detail in Coopersmith and Pell (2007). These protocols and implementation were continuously monitored on site by a QP, the Project Geologist, the drilling foreman, and/or supervised geological technicians. This work was performed in a similar manner to the 2005 and 2006 programs (Coopersmith, 2005; Pell and Coopersmith, 2006). The 2005 program was reviewed and monitored by AMEC (AMEC Americas, 2005). It is believed that drilling and sampling procedures were adequate to ensure sample integrity.

Bulk sampling procedures outlined in Section 13.2 were undertaken with two Peregrine employees present at all times. Access to the sampling area was restricted to the Project Geologist, two Peregrine samplers, Encore staff, and escorted visitors with permission from the QP or Project Geologist/Manager.

Bulk samples comprised continuous kimberlite sample produced by the RC drill over the entire length of intercept. Each drill hole was divided into sample processing units (see Section 13.2). Sample recovery represents the complete volume of the kimberlite as excavated by the large diameter RC drill. Sample quality is considered excellent and representative of the drill hole. No sample integrity or bias issues were noted.

Representative samples were collected at one to three metre intervals, depending on the rate of drilling. Material collected was placed in plastic containers be logged at a later date.

At irregular intervals the Q.P. and/or Project Geologist/Manager conducted random visits to ensure all the sampling and security protocols were being followed.

At logical breaks during the drilling and immediately after the RC hole was completed, Century Wireline Services (Century) of Tulsa, Oklahoma performed a three-arm caliper survey to aid with the volume-extracted calculations. Those surveys started from the

end of the hole and continued up to the bottom of the casing. These measurements were used to calculate the volume of material extracted. Sample results are given in Section 13.4 Grade and Tonnage Calculations.

At logical breaks during the drilling and immediately after the RC hole was completed, a three-arm caliper survey of the hole was completed to allow the volume of extracted kimberlite to be calculated. In 2005 and 2007, Century provided those surveys. In 2006, DGI Geosciences Inc. of Toronto, Ontario performed the caliper measurements. Wherever possible, these logical breaks defined sample breaks.

Bulk samples were collected using 1,300 L capacity double-layer bags with a 35" (0.89 m) x 35" (0.89 m) square bottom and 41" (1.04 m) high panels on each side. Each bag was labelled on two sides with a felt marker. Individual samples were prepared at the drill by treatment over a vibrating screen to remove the minus 1mm (square mesh) undersize material. This undersize material is waste and does not contain diamonds of commercial value. Drill cuttings that passed over a vibrating dewatering/de-sliming screen were collected in the sample bags, which were placed at the end of this screen. In 2005, +0.85mm material was collected and in 2006-2007, +1mm material was collected and sent for processing. The undersized material, which is waste and does not contain diamonds of commercial value, went into a mud tank and was then taken to the onsite sump.

When a bag was filled it was sealed with a tamper-evident security seal. Each sealed bag was inspected by the Project Geologist/Manager to verify sample integrity. Once the bag was sealed it was transported by forklift to a secure holding area to await shipping to the processing facility. All the pertinent information was recorded on sample shipping sheets, which included bag number, security seal number, date sealed, and who checked the sealed the bag, date shipped and who checked the bag for shipment. Data from individual log sheets were compiled in a master spread sheet for tracking. Shipments were made near the end of the sampling program. Shipping protocols were as follows:

- Once the ore samples went from the drill the Project Geologist checked the sample number and security tag number against the sample shipping sheet and signed in the "move to storage" column.
- When the samples were ready to be shipped to the processing facility, the Project Geologist inspected the sample bags and signed the "samples sent by" column in the sample shipping sheet.
- The transport driver inspected the sample bags and signed the "samples shipped by" line at the bottom of the Sample Shipping Sheet.

- When received at the processing facility the bags were inspected and the receiver signed the “samples received by” line at the bottom of the Sample Shipping Sheet. The processing facility then faxed the form to the Peregrine Project Geologist for filling.

After arrival at Ekati samples were securely stored outside and then moved into a secure structure at the sample plant to wait processing. Bag receipt logs, indicating bag integrity, were checked at the Ekati sample plant. In addition to careful logging of numbers, inspections were made for any evidence of tampering. This ensured sample integrity. Only minor torn bags and difficult to discern numbers were noted. Sample integrity is considered to be good.

Bulk sampling was performed with two Peregrine employees present at all times. Access to the sampling area was restricted to only the Project Geologist/Manager, two Peregrine samplers, Encore drilling staff, as required, and escorted visitors with permission from the QP or Project Geologist/Manager.

AMEC believes that sampling and preparation was properly executed with sufficient security and that sample integrity was maintained.

11.2 Density Determinations

Density measurements were taken from pilot core samples of DO-27 and a 3D density model was created by AMEC in conjunction with Peregrine and used along with the measured volume to calculate the tonnage extracted during the DO-27 bulk sampling programs (Section 14.2.5). Density procedures are described in Peregrine (2007b). Teck Cominco's Global Discovery Laboratories (Vancouver) performed the density measurements. Density measurement procedures are as follows:

- Samples were selected for density determinations at the drill and carefully wrapped with plastic cling wrap and aluminum foil. The samples were placed in coolers in the drill shack to protect them from freezing. Samples were then stored in a heated room in camp until they were shipped to the laboratory for analysis.
- At the laboratory, samples were unwrapped from foil and cling wrap then weighed wet. Samples were then dried at ~40° C for 48 hours then reweighed to give dry weight and moisture content.
- This moisture content was not an absolute figure as drying at 110° C was not done as the samples were deemed too fragile to remain competent if dried at this higher temperature.
- Samples were kept at ~ 30° C to keep from absorbing moisture.

Samples were removed from oven and reweighed and then spray coated with Krylon. (The Krylon added ~ 2.5-3.5 grams to the weight but this was not used in the calculation of the S.G.) After the Krylon was dry the samples were then reweighed in water to get a weight for the SG calculation.

11.3 Analytical and Test Laboratories

11.3.1 Macrodiamond Processing

Bulk samples from DO-27 were processed at the Ekati sample plant is a small-scale diamond recovery plant that was used to process the bulk samples. It is a secure facility with dedicated security staff, security procedures, and multiple layers of physical security measures in place. The Ekati plant is not certified. It is independent of Peregrine in that it is operated by Ekati personnel with Peregrine personnel as observers.

11.3.2 Microdiamond Processing

Microdiamonds were recovered by a caustic fusion process that completely consumes the sample and releases the diamond, undamaged. All samples for caustic fusion microdiamond analysis were sent to the SRC laboratory, an ISO/IEC 17025 accredited laboratory.

The procedure for processing core samples for microdiamonds > 75 µm, is as follows (Figure 11-1):

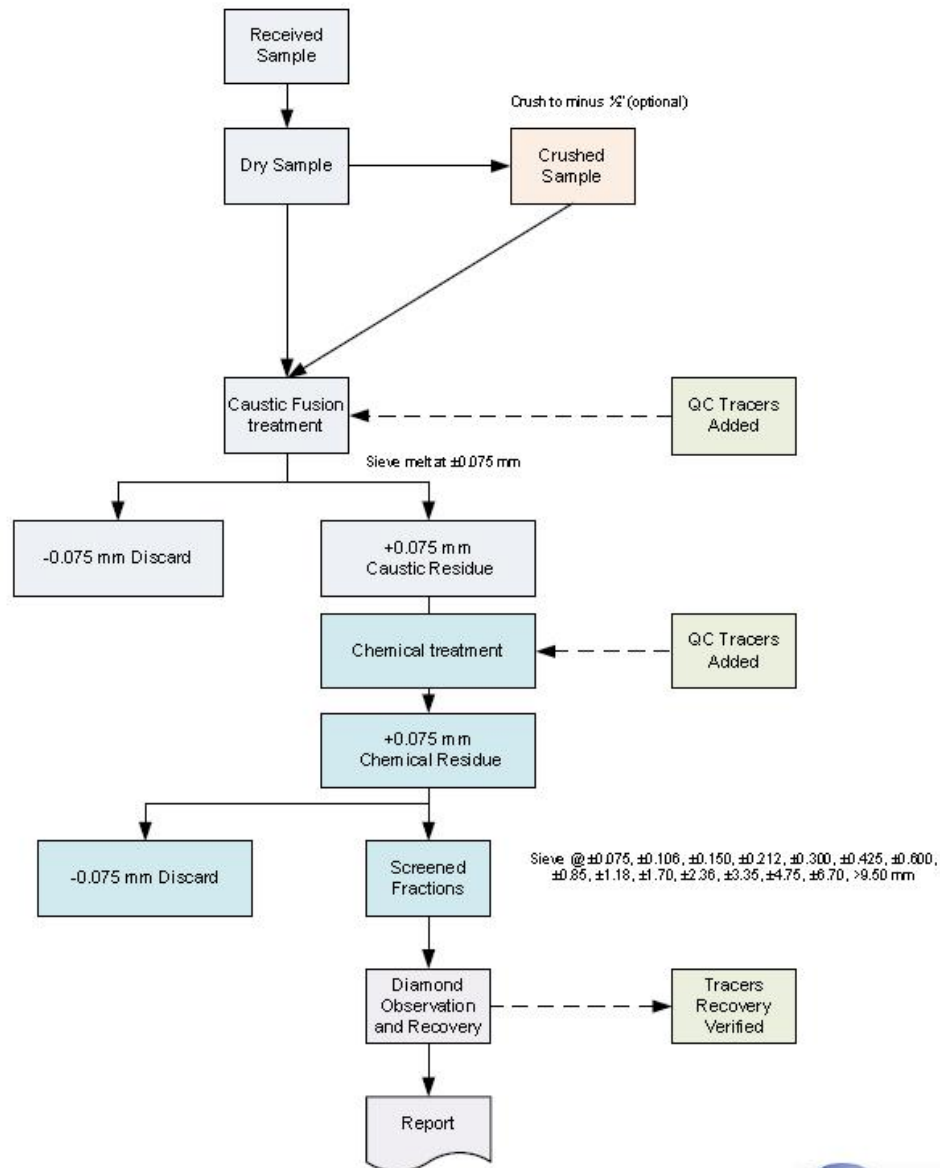
- Samples were weighed upon arrival at the laboratory and dried
- Samples were crushed in a crusher with a 0.5 in (1.27 cm) gap
- Tracers were added to the sample to evaluate process efficiency
- Samples were fused with sodium hydroxide (NaOH)
- Samples were screened on a 75 µm screen and the residue was discarded
- Additional tracers were added that the +75 µm material was by chemical treatment
- The cleaned material was again screened and the -75 µm fraction was discarded.
- The cleaned, +75 µm fraction was sieved at 0.075, 0.106, 0.150, 0.212, 0.300, 0.425, 0.600, 0.850, 1.18, 1.70, 2.36, 3.35, 4.75, 6.7, and 9.5 mm
- Microscopes were used to observe the screened material and to recover microdiamonds and tracers

- Recovered microdiamonds and added tracers were documented

Each sample was checked twice to ensure that the all the diamonds have been recovered. Fusion residues and recovered diamonds were shipped to Peregrine for storage and reference. In 2012, sample spiking for quality control of Peregrine samples returned 388 of the 389 spikes placed in the samples for a recovery rate of 99.7%. This efficiency is high and the results are therefore considered to be reliable.

Figure 11-1: Caustic Fusion Flow Chart (courtesy of Peregrine, 2014)

Caustic Fusion Method for Diamonds 75 μ m



SRC Geoanalytical Laboratories
Flow chart: 6.0
Effective: 26 May 2008
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11.4 Sample Preparation and Analysis

11.4.1 Core Drilling

Core samples of DO-27 and DO-18 from diamond drilling were prepared, analyzed and secured to best industry practices and supervised by Peregrine QP's Coopersmith and Dr. Pell. (Mr. Coopersmith is consulting geologist with extensive experience in diamond exploration and processing in the NWT, Colorado, USA, South Africa, and Russia.) Detailed discussions have been presented in previous Technical Reports (Coopersmith and Pell, 2007, Pell and Coopersmith, 2006, and Coopersmith, 2005). Core samples from LD-2 and LD-3 were collected by Dr. Pell and prepared, analyzed and secured to best industry-leading practices.

11.4.2 Reverse Circulation Drilling

Large diameter reverse circulation drilling at DO-27 was used to collect bulk samples as described in Section 11.1.2. Detailed discussions of each year's drilling procedures have been presented in previous Technical Reports (Coopersmith and Pell, 2007, Pell and Coopersmith, 2006, and Coopersmith, 2005).

Potentially diamond-bearing samples are not "assayed" in the conventional sense. Each sample must undergo processing similar to that found in diamond extraction plants to recover any diamonds that are present in the samples. That process includes crushing, screening, and dense media separation which produces a concentrate consisting of heavy minerals and diamonds. Diamonds are then extracted from the concentrate by a combination of X-ray sorting, grease tables, and hand-sorting of the residua. The entire sample is consumed during processing.

Processing of LDD samples was performed under contract by the BHP Billiton Ekati mine sample plant under the supervision of Peregrine QP's Coopersmith and Pell. Detailed discussions of each year's sample processing procedures have been presented in previous Technical Reports (Coopersmith and Pell, 2007, Pell and Coopersmith, 2006, and Coopersmith, 2005).

No tampering or suspicious circumstances were noted during the handling of the Peregrine bulk samples and products at any point. Security procedures and documentation were observed and monitored. No metallurgical or mineralogical anomalies were noted that might indicate loss of sample integrity. It is believed that Peregrine DO-27 bulk samples diamond results are true and accurate and have not been affected in any way that would minimize their integrity.

Mineral processing and data verification of the 2005, 2006, and 2007 bulk samples are discussed in detail in sections 14.2 and 13.2. It is the Peregrine's opinion, based upon their work and the reports noted above, that mineral processing and security was adequately designed and executed, and that integrity of the sample and result is adequate.

11.5 Quality Assurance and Quality Control

Three independent methods were used as an internal check of plant efficiency during the DO-27 bulk sampling programs:

- Tracers were placed in the sample bags at the drill site and recovered in the plant.
- Plant tails and concentrates from select samples were re-processed at the Ekati sample plant
- An independent audit of select recovery tails was performed

Detailed discussions of each year's audit and data verification procedures are presented in previous Technical Reports (Coopersmith and Pell, 2007, Pell and Coopersmith, 2006, and Coopersmith, 2005). In general, the results were satisfactory and demonstrated a sufficient degree of confidence in the result.

The goal of tracer spiking was to put at least one synthetic tracer in every bag and at least one natural tracer in every 24 m sample interval to monitor process efficiency. Tracer addition procedures were as follows (Peregrine, 2007c):

- Each sample bag had at least one synthetic tracer added to it. Synthetic tracers added should vary in size from one bag to the next.
- At least one natural diamond tracer was added to one of the sample bags that comprise each 24 m sample interval. The natural stones were added in addition to the synthetic tracers, not in place of synthetics.
- Spikes were added to sample bags at random times during the filling of the bags. Natural diamond tracers were removed from their bags carefully, immediately before adding to the sample.
- Once a natural tracer was added to a sample the empty bag was returned to the Project Manager. These bags were provided to the diamond sorters for re-use once the spikes were recovered from the sample.
- Tracer(s) placed in the sample bags were correctly documented on the bulk sample collection sheet. These data were carefully transcribed into a computer database and were periodically checked by the Project Manager for correctness.

- Any problems, discrepancies, etc., noted during spiking were immediately reported to the Project Manager.

11.6 Databases

Databases are maintained in Access™. AMEC assisted with construction of the DO-27 database and individually checked most entries.

11.7 Sample Security

Sample security of potentially diamond-bearing samples is a significant concern and very strict security and chain-of-custody procedures were in place during core and LDD drilling operations.

11.7.1 Core Security

Core security is outlined in Peregrine (2007a) and summarized below. These procedures also applied to the 2012 core drilling programs.

Drilling and Core Storage Security Procedures

- Drill core boxes were labelled and metre markers placed as appropriate.
- Care was taken to ensure all core pieces and loose material were placed into the core box.
- When a core box was full (approximately 15 feet or 4.5 m of NQ core), a wooden lid was securely fastened to the core box by the driller, except when requested by the site geologist to be left open for inspection.
- All core boxes were loaded onto pick-up trucks or helicopter as the season allowed and were transported directly to Peregrine's field core shack, located within the Project site area.
- All of the core boxes entering the core shack facility were unloaded and stacked according to drill hole number and box number.
- Core boxes were examined for any tampering or damage once off-loaded from the pickup truck (or helicopter).
- Core boxes remained sealed prior to core logging.

Field Core Logging Procedures

- Core boxes were laid out sequentially onto core logging tables or on the floor of the logging facility and lids were removed.
- Once the preliminary geological and geotechnical core logging and photography work was completed the core box lids were re-fastened to the core boxes.
- Core boxes were then stacked sequentially and strapped down for transport to the Peregrine Yellowknife core facility

Core Shack and Yellowknife Facility Security Protocols

- Access into the core shack and Yellowknife facility was restricted to the following personnel:
 - Peregrine personnel (geologists, labourers)
 - Contract geologists, QPs
 - Invited persons under the supervision of the above
- The names and times of the authorized persons entering and exiting the core shack/facility were recorded in a Core Shack Log Book
- Core boxes were kept sealed unless currently being viewed

A chain of custody sheet and details of any core processing were kept and utilized for core shipped out to a laboratory or other facility. Core shipped for microdiamond analyses were in polyurethane sample bags placed into 5 gallon white plastic pails with locking lids. Security seals were placed on the pails or on the bags within the pails and properly documented and recorded in data files. Upon arrival at the laboratory, the security seals were recorded and noted for any breakage, tampering etc. Samples sent out for other purposes (density measurements, mineral chemistry, petrographic analysis or other scientific study) were properly documented and shipped in an appropriate manner (as determined by the geologist logging the core or selecting the samples). Security seals were not required for those samples.

In the event that a diamond was discovered in core:

- The Peregrine Project Manager/QP was to be notified immediately
- The from-to (in metres) of the section of core containing the diamond was to be measured and documented onto the core logging sheet
- If possible, a photograph of the diamond-bearing core was taken (with the diamond highlighted)

- The piece of diamond-bearing core was to be carefully wrapped in bubble wrap, placed into a secure box, and escorted and transported to the Peregrine office by the Project Manager/QP for safe storage.
- Core movement was documented on a Chain of Custody sheet.
- Diamonds were not to be discussed with anyone other than Peregrine Project Management/QP and corporate management.

11.7.2 RC Sample Security

Once a bulk sample bag was filled at the drill, the sample was removed from the drill area and replaced. The following procedures were implemented:

- The neck of the bag was tied with the tie attached to the bag.
- The bag was sealed with a security seal. The security seal punctured the bag in a few areas, to ensure that the tag could not be slipped off the bag.
- The security seal was then closed by threading the security seal wire through the hole at the numbered end and pulled tight around the bag.
- The metal peg at the numbered end was then turned clockwise until it snaps off.
- With this the seal was locked and could not be reopened.
- Bag numbers were double checked with the security tag number.
- All security tag numbers were documented and accounted for.

Bulk samples were stored on pallets or snow pads for the duration of the LDD programme until they were shipped to a sample processing facility. The sample storage area was restricted and only authorized personnel were allowed access. The following procedures were followed before removing samples from site:

- Bags were visually inspected for any damage prior to their transfer onto the trucks for transport.
- Security numbers and their bag numbers were recorded on shipment sheets plus any comments regarding damage to the bag along with time and date of transport.
- Any inconsistencies in tag number vs. bag number were noted, flagged and reconciled prior to shipping.
- Damage on bags was spray painted for handlers at the laboratory to see. Bags that require gentle handling could easily be identified at the laboratory.

- One shipment sheet was filled out for each truck load being sent off site.
- The shipment sheet accompanied the bags to the processing plant where the shipment was checked and receipted by signing the shipping sheet. A copy of this sheet was left with the laboratory and the original was returned to Peregrine.

Process Plant Sample Handling

- Sample bulk bags arrived from drill site by truck. Drivers had a copy of the sample chain of custody sheet.
- The Ekati sample plant representative received shipments of bags, confirmed bag numbers, seals and integrity, and took custody of samples.
- Peregrine representatives supervised loading of sample bags into secure storage facility which was heated and had restricted access and security monitoring features installed and operating.
- The Ekati representative signed the chain of custody List and faxed the list back to the Peregrine Project Manager.
- The Peregrine Project Manager determined the bag number groupings for sample batch processing and communicated those groupings to the Ekati representative.
- Diamond tracers, both natural, marked diamonds and synthetic (blue cube) density/X-ray tracers were introduced to the sample by Peregrine personnel. They were not removed by Ekati personnel.

Sample Security in the Sample Plant

- Designated sample batches were received from storage, checked off chain of custody sheet and introduced one at a time to plant sample feed.
- The following data were collected on all samples (as per Ekati standard operations and standard sample log sheets, example attached):
 - Sample weight (bags weights and corresponding weightometer readings) and moisture content (one per sample) for each sample
 - Heavy mineral separation (HMS) concentrate weight, moisture and gradation.
 - Date of processing and the start and stop time of the sample processing (excluding cleaning time).
- Wet X-ray concentrates reported to locked and sealed cans, and were delivered to Peregrine personnel or securely stored for Peregrine personnel.
- Degreased concentrate was bagged wet and delivered to, or securely stored for, Peregrine personnel.

- Storage and transportation of recovery concentrates was performed to standard and usual Ekati security procedures.
- An Ekati representative transferred sealed and properly labeled and documented concentrate containers only to Peregrine representatives as requested by the Peregrine QP and/or Project Manager.

The sample plant was equipped with closed circuit security cameras. Access was restricted and no person is allowed to handle concentrate alone, i.e., two people were required to access concentrates. All personnel leaving the plant were subject to search.

In the event that a diamond was discovered at the RC drill:

Discovery of a diamond(s) on the shaker table or in drill samples

- If a diamond(s) was identified on the shaker table, the following security procedures were implemented:
 - Attention was not drawn to the situation. The shaker table continued normal operation.
 - The Peregrine Project Manager / QP was notified immediately.
 - The hole number, approximate meterage going over the table when the diamond was seen was noted and the bag the diamond went into was noted.
 - The information was given to the Peregrine Project Manager and to the QP.
 - The diamonds were not discussed with anyone other than Peregrine Project management/QP and corporate management.
- If a diamond(s) was identified in samples of drill cuttings, the following security procedures were implemented:
 - The Peregrine Project Manager/QP was notified immediately.
 - The from-to (in metres) of the section containing the diamond was measured and documented onto the chip logging sheet.
 - If necessary, a photograph of the diamond-bearing section of chips was taken.
 - The diamond was carefully removed from the chips, placed in a small zip lock bag (~2x3cm) or small mineral vial, placed into a secure box, and then escorted and transported to the Peregrine Office by the Project Manager / QP for safe storage.
 - The diamond movement was documented on a chain of custody sheet.
 - The diamonds were not discussed with anyone other than Peregrine Project management/QP and corporate management.

11.7.3 SRC Security

The sample processing facility at SRC is a locked facility. The caustic sorting room is monitored by 24 hour motion sensing video surveillance. This is operated and managed by accredited in-house security personnel, and monitored in part by an outside security agency.

11.8 Comments on Section 11

Sampling, sample preparation, and sample processing are consistent with industry leading practices.

Sample and diamond security are consistent with industry leading practices and will significantly reduce the risk that stones will go missing.

12.0 DATA VERIFICATION

12.1 Core Drilling

Core from all of Peregrine's diamond drilling campaigns is securely stored in Peregrine's Yellowknife warehouse. Core has been documented, photographed and logged. Sampling of the core for different analyses has occurred. Detailed discussions of each year's core handling procedures have been presented in previous Technical Reports (Coopersmith and Pell, 2007, Pell and Coopersmith, 2006, and Coopersmith, 2005).

Drill core and logs for DO-27 were reviewed for all drill holes by AMEC. The core documentation and logging adequately capture the required data from the drilling. The remaining core samples are available for further verification. No other independent data verification of the core drilling or analysis has been performed.

12.2 Microdiamond Analyses from Exploration Drilling in 2012

AMEC verified the microdiamond data from the 2012 exploration program against original certificates from SRC.

12.3 Reverse Circulation Drilling

It is not possible to verify the results of bulk sampling by large diameter RC drilling as the samples were entirely consumed in processing. Small representative samples were collected every one to three metres in kimberlite for logging and verification. However these samples, while adequate for geology, are not sufficient for diamond analysis. Drilling records, surveys, and drill logs are available for all of the holes. Drilling was monitored at all times by a QP, Project Geologist/Manager, and/or geological technician. No irregularities were noted and there is no reason to suspect the veracity of the large diameter RC drill sampling.

12.4 Mineral Processing

Data can be verified in mineral processing to recover diamond by conducting sample audits and checks of efficiency of the process. The 2005, 2006, and 2007 bulk samples were processed at the BHPB Ekati bulk sample plant. This is not an ISO certified facility but is in regular use for the recovery of diamonds from bulk samples. Data were verified by AMEC and Peregrine independent from the Ekati procedures.

12.5 Database

AMEC assisted with construction of the DO-27 database and checked all entries in the database that was used for estimation. AMEC considers the database to be adequate to support resource estimation.

12.6 Comments on Section 12

AMEC verified procedures and processes used to collect data and the Project database. AMEC considers the processes and procedures to be adequately verified and sufficient to support resource estimation.

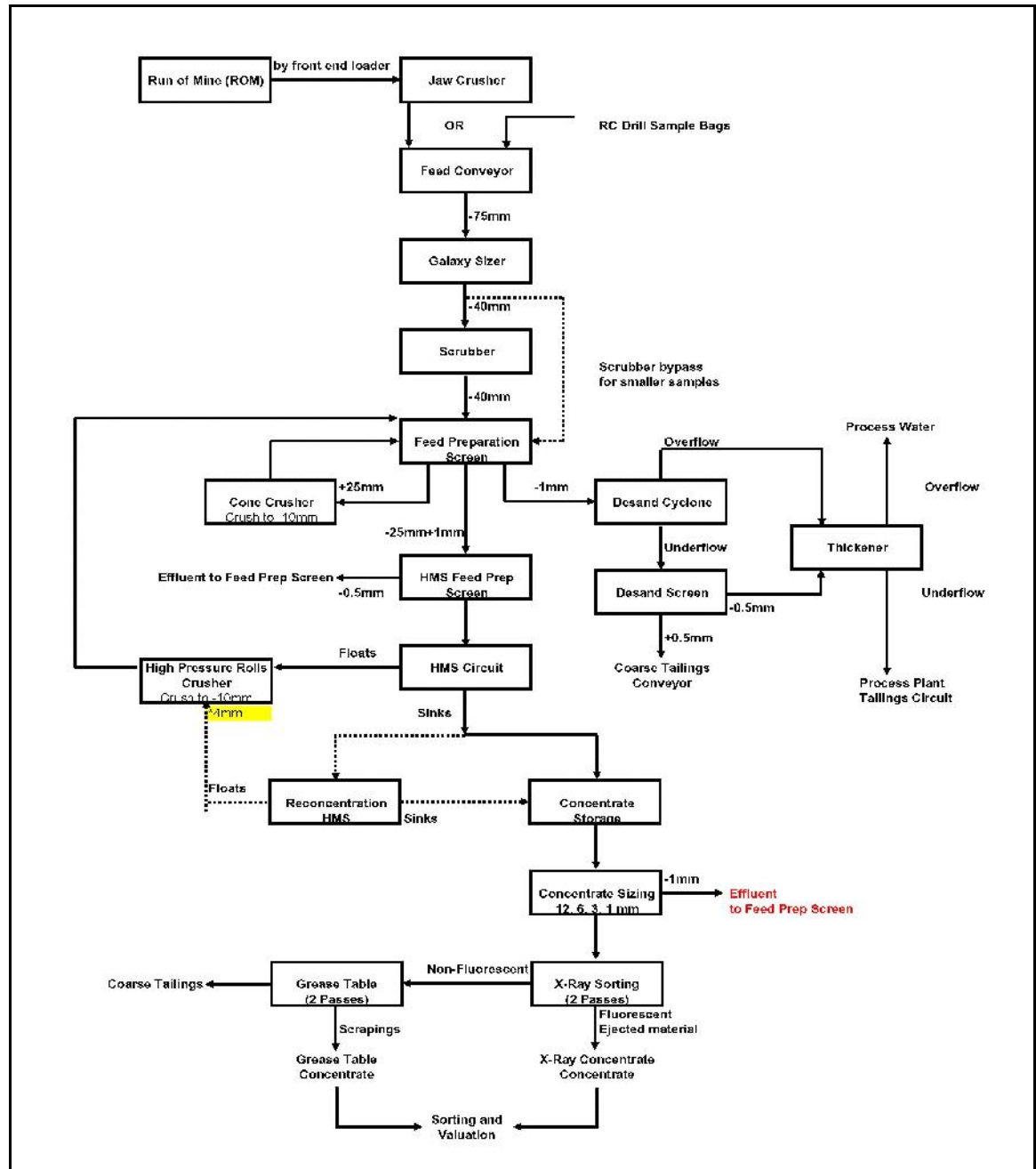
13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Bulk Sampling via Large Diameter RC Drilling

Sample processing protocols were developed specifically for Peregrine's requirements and the use of the Ekati Sample Plant (Peregrine, 2007d). The Ekati sample plant was used by Peregrine for the 2005, 2006, and 2007 sample processing. AMEC visited the sample plant in 2005 to observe operations during DO-27 sample processing, and reported on their findings and recommendations (AMEC Americas, 2005). Howard Coopersmith was present for the processing of several complete DO-27 samples and audits each year, and to assess protocol compliance, metallurgical operations, efficiency, and security. The Ekati sample plant recovered diamonds down to a minus 1.0 mm bottom cut off, using primarily 1 mm x 14 mm slotted screens. Figure 13-1 is a schematic flowsheet of the plant. Final diamond recovery operations were performed by Howard Coopersmith and assisted by Jennifer Pell and Jim Crawford of Peregrine. Ekati personnel performed all sample processing and recovery operations until the final product (X-ray diamond recovery machine and grease table products). Ekati personnel were not party to any final recovery operations or results; however all operations were conducted in view of security cameras and monitored by security personnel.

Detailed discussions of each year's processing procedures and results have been presented in previous Technical Reports (Coopersmith and Pell, 2007, Pell and Coopersmith, 2006, and Coopersmith, 2005) and in Hwang (2005).

Figure 13-1: Ekati™ Sample Plant Flow Sheet (courtesy of Peregrine, 2014)



13.2 Metallurgical Test Work

The Ekati sample plant was not designed or set up for collection of metallurgical data or mass balance data. Samples were weighed upon receipt (by bag) and upon entering the plant by belt scale. Sample weights do not correspond to bulk sample weights, as the samples were de-slimed (-1mm) at the drill site and a large amount of the fine material reported to the slimes sump and was not transported to the plant. The heavy mineral concentrate weights for the treated sample, not the raw sample weight, were recorded. These range from just under 1% to about 3%. This is within the expected range of heavy mineral concentrate. Peregrine collected the metallurgical data from the sample plant that was available. Flow rates or product weights of the various product streams were not available, but granulometry of select samples was measured. Samples of coarse tails and fine tails (thickener feed) were collected. This material was dried and sieved at the Ekati metallurgical laboratory, and the results are reported in Fortin (2007). Future bulk samples from DO-27, whether treated at Ekati or elsewhere, should collect more metallurgical and mass balance data for aid in future process plant design.

Samples of two DO-27 drill cores from 2007 were collected from four depth levels for outside metallurgical testing. SGS Lakefield Research Limited (SGS), Lakefield, ON Canada, performed scrubber, and High Pressure Grinding Roll (HPGR) test work. The objective of this program was to establish basic operating and design parameters from high pressure grinding roll (HPGR) testing, as well as determining the quantity of -1 mm material generated by the scrubbing process. Tests were also performed by Haver & Boecker of their Hydro Clean process (Krellmann, 2007) on the SGS metallurgical samples. The testing program was designed and monitored by Harry Ryans, metallurgist and Project Manager for AMEC, Vancouver, BC, and Ken Kuchling, Project Engineer for Peregrine.

Environmental testing to determine acid discharge of the kimberlite metallurgical samples was also undertaken by SGS. The analyses included:

- Acid-base accounting (ABA) using modified Sobek net neutralization potential (NP) determination, sulphur speciation, and inorganic carbon.
- Inductively coupled plasma with mass spectroscopy (ICP-MS) for metals after aqua regia digestion;
- Whole rock analysis by X-ray fluorescence (XRF)

Results indicate no problem in acid base accounting as the rock is net neutralizing.

Detailed discussions of this work have been presented in previous Technical Reports (Coopersmith and Pell, 2007, Pell and Coopersmith, 2006, and Coopersmith, 2005).

13.3 Diamond Sorting

Per Peregrine's instructions, the role of Ekati personnel in the DO-27 bulk sample ended with production of X-ray and grease table concentrates. These concentrates were sealed and stored in a secure location. Concentrates were retrieved by the Howard Coopersmith and Jennifer Pell, or Howard Coopersmith and Jim Crawford. Ekati provided a small sorting room with equipment for Peregrine's use that was equipped with video surveillance monitored by Ekati security. When not being examined, concentrates were stored in lockbox cabinets, accessible only by Coopersmith and Pell or Coopersmith and Crawford from Peregrine (two-person rule) in conjunction with Ekati security.

Recovered diamonds were counted and weighed, and then sieved using standard DTC sieve sizes and each sieve size was weighed and stones individually counted. A reconciliation was made of both counts and weights. All +0.5 carat stones were individually weighed and described. Results were tabulated by concentrate type/number and sieve fraction for size distribution analysis. Tracer diamond recovery was also documented.

Diamond parcels were securely shipped to the BHPB's Yellowknife acid washing facility (SVF). Sorted concentrate was containerized and shipped to Peregrine's Yellowknife warehouse for storage, with select samples shipped to SRC for audit. The acid washed diamond products were securely shipped to Antwerp for valuation and modelling.

Detailed discussions of diamond sorting procedures, methods, and results for each year have been presented in previous Technical Reports (Coopersmith and Pell, 2007, Pell and Coopersmith, 2006, and Coopersmith, 2005).

13.4 Grade and Sample Tonnage Calculations

As sample processing began with dewatering of the samples over a 1 mm screen at the drill site, sample weight could not be directly measured. The minus 1 mm material, comprising a major portion of the sample, was removed by screening at the drill and reported to the slimes. The +1 mm material was shipped to the Ekati sample plant for processing. Because the sample tonnage could not be established by physically weighing the material sent to the plant, it was necessary to measure the volume of kimberlite extracted and from that volume, calculate the weight. Century (2005 and

2007) and DGI Geoscience (2006) were contracted to perform downhole caliper measurements of the volume of the material excavated. A specialized, computerized, 9065 or 9074 three-arm caliper tool was lowered down each drill hole and used to measure the exact volume of material extracted.

Caliper logs and volume data were carefully scrutinized to assure that the volumes and tonnages were reliable. For various reasons, not all holes in the 2007 campaign were useable for grade calculations. A significant factor was the fact that, in some cases, hole sloughing was encouraged in order to increase material extracted and sloughing caused the hole diameter to exceed the maximum reach of the caliper tool which early in the program was 84 cm and later 120 cm. The arms were changed because the 84 cm arms were too short in some cases. The diameter of holes rarely exceeded the 120 cm arms (Table 13-1).

Diamond grades are reported as dry tonnes. Bulk sample tonnage and diamond results by geologic domain are reported as Table 13-1.

Table 13-1: 2007 LDD Holes and Tonnages by AMEC

Sample #	RC Hole #	From	To	Calculated Tonnes	Lobe	Lithology	Comments
PDL07-08	DO27L-07-01	55.0	147.0	47.1	Main Lobe	KIMB-1	
PDL07-09	DO27L-07-01	147.0	256.0	62.9	Main Lobe	KIMB-1	
PDL07-53	DO27L-07-02	42.7	91.8	18.9	Main Lobe	KIMB-1	
PDL07-54	DO27L-07-02	91.2	258.5	104.9	Main Lobe	KIMB-1	
PDL07-44	DO27L-07-03	56.5	101.1	28.3	Main Lobe	KIMB-1	
PDL07-45	DO27L-07-03	99.1	110.1	41.2	Main Lobe	KIMB-1	
PDL07-15	DO27L-07-08	39.7	79.6	17.8	Main Lobe	KIMB-1	
PDL07-16	DO27L-07-08	79.6	116.8	17.3	Main Lobe	KIMB-1	
PDL07-17	DO27L-07-08	116.8	187.9	58.7	Main Lobe	KIMB-1	
PDL07-04	DO27L-07-10	77.8	275.2	184.0	Main Lobe	KIMB-1	
PDL07-55	DO27L-07-11	38.9	119.8	34.8	Main Lobe	KIMB-1	
PDL07-56	DO27L-07-11	119.8	275.3	94.5	Main Lobe	KIMB-1	
PDL07-21	DO27L-07-12	46.0	98.3	34.0	Main Lobe	KIMB-1	
PDL07-22	DO27L-07-12	98.3	126.6	38.7	Main Lobe	KIMB-1	
PDL07-23	DO27L-07-12	126.6	160.06	23.4	Main Lobe	KIMB-1	
PDL07-46	DO27L-07-13	39.0	108.4	30.4	Main Lobe	KIMB-1	
PDL07-47	DO27L-07-13	108.4	158.76	41.4	Main Lobe	KIMB-1	
PDL07-19	DO27L-07-14	56.0	185.97	64.0	Main Lobe	KIMB-1	
PDL07-29	DO27L-07-16	54.0	216.39	84.1	Main Lobe	KIMB-1	
PDL07-01	DO27L-07-17	53.0	83.5	18.5	Main Lobe	KIMB-1	
PDL07-02	DO27L-07-17	83.5	115.3	20.5	Main Lobe	KIMB-1	
PDL07-03	DO27L-07-17	115.3	266.57	125.5	Main Lobe	KIMB-1	
PDL07-28	DO27L-07-18	60.3	277.12	117.7	Main Lobe	KIMB-1	
PDL07-26	DO27L-07-19	54.4	295.05	118.7	Main Lobe	KIMB-1	Caliper is a bit strange, use
PDL07-05	DO27L-07-24	56.0	81.7	17.5	Main Lobe	KIMB-1	
PDL07-06	DO27L-07-24	81.7	113.2	19.1	Main Lobe	KIMB-1	
PDL07-07	DO27L-07-24	113.2	284.04	94.7	Main Lobe	KIMB-1	
PDL07-27	DO27L-07-20	47.4	119.4	41.7	Main Lobe	KIMB-1	
PDL07-51	DO27L-07-20	119.4	136.59	14.7	Main Lobe	KIMB-1	
PDL07-10	DO27L-07-04	43.7	70.5	11.5	NE Lobe	KIMB-1	
PDL07-48	DO27L-07-05	48.4	81.1	22.5	NE Lobe	KIMB-1	
PDL07-49	DO27L-07-05	81.1	168.6	52.4	NE Lobe	KIMB-1	
PDL07-50	DO27L-07-06	36.5	150.69	42.2	NE Lobe	KIMB-1	
PDL07-24	DO27L-07-09	53.0	104.8	16.3	NE Lobe	KIMB-1	
PDL07-25	DO27L-07-09	104.8	171.0	24.0	NE Lobe	KIMB-1	
PDL07-31	DO27L-NE-01	14.0	44.7	19.9	NE Lobe	KIMB-1	Caliper maxed out for 3m, use anyway
PDL07-36	DO27L-NE-03	5.0	75.2	43.3	NE Lobe	KIMB-1	
PDL07-39	DO27L-NE-04	7.7	95.0	62.7	NE Lobe	KIMB-1	
PDL07-41	DO27L-NE-05	32.6	98.6	49.3	NE Lobe	KIMB-1	
PDL07-11	DO27L-07-04	70.5	101.6	13.6	NE Lobe	OTHER (MIXED)	Not KIMB-1

Sample #	RC Hole #	From	To	Calculated Tonnes	Lobe	Lithology	Comments
PDL07-12	DO27L-07-04	101.6	122.9	33.4	NE Lobe	OTHER (MIXED)	Not KIMB-1
PDL07-13	DO27L-07-04	122.9	163.14	12.5	NE Lobe	OTHER (MIXED)	Not KIMB-1
PDL07-52	DO27L-07-05	168.5	280.83	35.3	NE Lobe	OTHER (MIXED)	Not KIMB-1
PDL07-18	DO27L-07-22	55.5	277.01	99.5	Main Lobe	KIMB-1	Bad caliper data
PDL07-20	DO27L-07-23	53.8	256.45	103.7	Main Lobe	KIMB-1	Bad caliper data
PDL07-14	DO27L-07-25	54.6	275.71	110.4	Main Lobe	KIMB-1	Bad caliper data
PDL07-32	DO27L-NE-01	44.7	79.1	19.8	NE Lobe	KIMB-1	Arbitrary break with sample 32
PDL07-33	DO27L-NE-01	79.1	98.31	5.4	NE Lobe	OTHER (MIXED)	Arbitrary break with sample 31
PDL07-34	DO27L-NE-02	30.9	85.5	21.2	NE Lobe	KIMB-1	Caliper maxed out
PDL07-30	DO27L-NE-02	39.7	83.4	15.5	NE Lobe	KIMB-1	Caliper maxed out
PDL07-35	DO27L-NE-02	85.5	119.45	8.9	NE Lobe	OTHER (MIXED)	Caliper maxed out
PDL07-37	DO27L-NE-03	75.2	94.2	23.2	NE Lobe	KIMB-1	Arbitrary break with sample 38
PDL07-38	DO27L-NE-03	94.2	104.59	3.1	NE Lobe	OTHER (MIXED)	Arbitrary break with sample 37
PDL07-40	DO27L-NE-04	95.0	118.25	12.8	NE Lobe	OTHER (MIXED)	Not part of KIMB-1
PDL07-42	DO27L-NE-05	98.6	130.8	28.6	NE Lobe	OTHER (MIXED)	Caliper maxed out for 11 m
PDL07-43	DO27L-NE-05	130.8	160.44	9.8	NE Lobe	OTHER (MIXED)	Caliper maxed out for 11 m
PDL07-57	DO27L-NE-06	30.7	77.3	na	NE Lobe	KIMB-1	Not all bags shipped to plant

Grade of a kimberlite sample is determined by the product of the actual diamonds recovered from the sample and the tonnage of the sample. The actual diamonds recovered is a metallurgical factor of the processing plant and specifically the size cut offs used. Plant recovery efficiency is in the high 90% range; recovering essentially all diamonds within the size ranges presented to the plant. However the plant cannot recover diamonds in size ranges not presented for treatment. The upper size limit used by the sample plant was 25 mm, and it is unlikely that diamonds in excess of this size were excluded. The bottom size cut off is a very sensitive factor in kimberlite samples, as the majority of the diamonds and contained carat weight occur in the smallest sizes. A 1 mm cut off is standard industry practice, stones below that size having little commercial value.

During the 2005, 2006, and 2007 bulk sampling and processing a variety of bottom cut off sizes were used at DO-27. These include the bottom size screen at the RC drill rig wash screen and the various bottom size wash screens at the Ekati sample plant.

It was noted that during the 2007 processing that the diamond size distribution was showing significant loss in the lower sizes. Upon questioning, the Ekati sample plant operators confirmed that 1 mm screens (1 mm x 13 mm slots) were being used. As this under-recovery of small diamonds continued the process was questioned again. After sample processing was complete it was disclosed that some of the 1 mm screens actually had openings to 1.4 mm, and that screen undersize (tails) contained up to 83% +1-2 mm material (Nathalie Fortin e-mail, Sept. 6, 2007). This loss of small stones had a significant impact on diamonds and carats recovered, and hence grade.

The varying bottom size cutoffs used at DO-27 are shown in Table 13-2. It can be seen that the effective bottom cutoff size is related to the largest screen opening used. The drill rig wash screen was generally less efficient than the Sample Plant wash screens, and these openings exerted more influence on the actual bottom sizes. Hence far more small diamonds were recovered in 2006 than in 2007. This is also demonstrated in the average carats per stone of 0.096 for 2007 and 0.045 for 2006.

Table 13-2: Bottom cut off sizes for DO-27 Bulk Samples

YEAR	DRILL RIG CUTOFF	PLANT CUTOFF	EFFECTIVE BOTTOM CUTOFF
2007	1.00	1.40	1.40
2006	1.00	0.65	1.00
2005	0.85	1.00	1.00
1994	n/a	?	less than 1

Due to these bottom size cutoff differences by year and the loss of small stones in 2007, it was deemed necessary to normalize and model the different year's results for comparison. All grade results were normalized to a uniform datum of a 1.0 mm bottom screen size for the 2006 bulk sample results and a 1.4 mm bottom screen size for the 2007 bulk sample results, and then modelled. This procedure is in accordance with industry-standard practice when calculating diamond grades from multiple bulk samples that have different bottom screen size data sets. The 2005 bulk sample was not suitable for modelling due to its small size relative to the 2006 and 2007 bulk sample. Mr. M.M. Oosterveld, a recognized expert in the field of diamond size distribution statistics and modelling performed this exercise (M.M. Oosterveld, 2007).

Oosterveld prepared a preliminary compilation of actual, modelled, and normalized grades at DO-27 (M.M. Oosterveld, pers. comm., September 2007). This compilation resulted in a table of grades as presented in Peregrine's press release of sample results dated September 18, 2007. The preliminary modelling on the combined 2006 and 2007 results (Table 13-3) show that the Main PK (KIMB-1) which represents the main infilling of the pipe has a combined grade of 0.89 carats per tonne.

Table 13-3: Preliminary Summary of 2006 and 2007 Sample Grades

2006 AND 2007 NORMALIZED GRADES				
Year	Lithology	Tonnes	Carats	CPHT ⁽¹⁾
2006	Main Lobe PK	32.80	3,296.55	89.11
2006	NE Lobe PK	20.05	14.81	73.87
2007	Main Lobe PK	1,616.01	1,440.34	89.13
2007	NE Lobe PK	322.86	253.05	78.38
Combined	NE Lobe PK	342.91	267.86	78.11
2007	Main +NE PK	1,938.87	1,693.39	87.34
All	All combined	2,291.72	2,004.75	87.48

⁽¹⁾ CPHT equals carats per hundred dry tonnes

Table from Peregrine Diamonds Ltd, News Release, Sept. 18, 2007.

Oosterveld then compared the grade and diamond size frequency in the different lithologies by region in the pipe in detail, and made an analysis of the recovery differences between 2006 and 2007, to produce a size frequency model that was used to calculate conversion factors for 2006 and 2007 to normalize sampling grades to the grade at 1 mm cut-off. Oosterveld concludes (M.M. Oosterveld, 2007):

"In this report all the sampling results for which accurate tonne figures were available were used. The 2006 and 2007 sampling programs recovered some 2,525 tonnes¹, 22,537 stones, and 1,788 carats. The largest part of the pipe is occupied by the Main Lobe Kimb-1 and 22 holes were drilled in the Kimb-1 lithology. Three holes were drilled in the north of the pipe (designated NE/Main) and in these the NE/Main Kimb-1 and Other lithologies were encountered. The Main Kimb-1 lithology in these 3 holes has an anomalous large stone size. In the NE lobe of the pipe 7 holes were drilled and Kimb-1 and Other lithologies were encountered. A similar and relatively high grade kimberlite occupies the Main Lobe and the NE/Main section of the pipe for both lithologies encountered here. The NE Lobe is occupied by lower grade kimberlite.

¹ Actual tonnes that are accurate and useable for grade determination; as per Table 13-5, not all tonnes extracted in 2007 (and 2006) are useable for grade calculation as some tonnes are only estimates.

For individual holes the diamond size frequencies were compared with the total for the region and lithology and these were found to be very similar and few differences or irregularities were observed. A comparison between the regions and lithologies also showed very similar results with the exception of NE/Main Kimb-1 which showed a larger stone size. Because of the similarities in the size distributions the 2007 and 2006 results per year were combined and the grade per size class relationship compared between these years. A comparison of these relationships showed a near identical grade for 2006 and 2007 in the +7, +9, +11, and +13 diamond sieve size classes. Below 0.1 cts/stn in the +1, +3, and +5 sieve classes the recovery was much higher in 2006 than in 2007 because of different lower cut-off size used in the treatment plant. In 2007 the lower cut-off size was approximately 1 mm and in 2006 a smaller cut-off size was used. During 2007, the recovery in the +15 and +17 diamond sieve classes was higher than in 2006 which year shows a deficiency of larger stones.

The cumulative carat size frequency and the grade per size class relationship were modelled for the combination of 2006 and 2007 and this produced a size frequency model at 1 mm cut-off. The composite model produced a global average grade for the DO-27 of 91.45 cpht. There was a large degree of consistency during 2006 as well as 2007 in the sampling results obtained."

Oosterveld used a composite grade model (2006 & 2007 results) to prepare a composite smoothed grade model by size class as shown in Table 13-4. The results, by hole, are presented in Table 13-5. Those results represent the product of the modelling effort by Oosterveld, and suggest that, based on the composite grades, an average grade of 91.45 cpht (as outlined above) is likely to be expected for KIMB-1.

Table 13-4: Smoothed composite (sm comp) grade model for KIMB-1 (From Oosterveld, 2007)

DIAMOND SIEVE	2006+2007 composite cpht ui	2006+2007 sm comp cpht ui	2006+2007 composite cpht	2006+2007 sm comp cpht	2006+2007 sm comp % carats	2006+2007 sm comp cum cpht	2006+2007 sm comp cum % cts
+23	3.91	4.20	0.68	0.73	0.800	0.73	0.800
+21	3.22	3.30	1.09	1.12	1.219	1.85	2.019
+19	6.94	6.50	1.97	1.85	2.021	3.69	4.040
+17	10.16	10.00	1.32	1.30	1.418	4.99	5.458
+15	14.50	13.00	1.10	0.99	1.078	5.98	6.536
+13	14.66	16.00	3.38	3.69	4.031	9.66	10.567
+11	27.56	27.56	9.53	9.53	10.425	19.20	20.992
+ 9	41.64	41.64	10.34	10.34	11.302	29.53	32.294
+ 7	48.42	50.40	8.94	9.31	10.178	38.84	42.472
+ 5	60.67	59.68	22.93	22.56	24.668	61.40	67.140
+ 3	59.93	59.50	16.49	16.38	17.908	77.77	85.048
+ 1	36.60	36.60	13.67	13.67	14.952	91.45	100.000
- 1							
TOTAL			91.45	91.45	100.000		
cpht = carats per hundred metric tonnes sm = smoothed comp = composite ui = unit interval cum = cumulative							

Table 13-5: 2007 LDD Holes and Grade Determinations Used for Resource Estimation

Sample #	RC Hole #	From	To	Total Carats	Total Stones	Calculated Tonnes	cpt	Adjusted cpt	stones / tonne	Adjusted s/t	Lobe	Lithology
PDL07-08	DO27L-07-01	55.0	147.0	37.99	400	47.1	0.81	1.08	8.50	21.83	Main Lobe	KIMB-1
PDL07-09	DO27L-07-01	147.0	256.0	43.59	538	62.9	0.69	0.92	8.56	21.98	Main Lobe	KIMB-1
PDL07-53	DO27L-07-02	42.7	91.8	10.87	104	18.9	0.58	0.77	5.52	14.16	Main Lobe	KIMB-1
PDL07-54	DO27L-07-02	91.2	258.5	61.34	592	104.9	0.58	0.78	5.64	14.49	Main Lobe	KIMB-1
PDL07-44	DO27L-07-03	56.5	101.1	19.02	192	28.3	0.67	0.90	6.78	17.42	Main Lobe	KIMB-1
PDL07-45	DO27L-07-03	99.1	110.1	23.82	256	41.2	0.58	0.77	6.22	15.96	Main Lobe	KIMB-1
PDL07-15	DO27L-07-08	39.7	79.6	13.34	139	17.8	0.75	1.00	7.82	20.09	Main Lobe	KIMB-1
PDL07-16	DO27L-07-08	79.6	116.8	11.47	121	17.3	0.66	0.88	6.98	17.93	Main Lobe	KIMB-1
PDL07-17	DO27L-07-08	116.8	187.9	47.89	411	58.7	0.82	1.09	7.00	17.98	Main Lobe	KIMB-1
PDL07-04	DO27L-07-10	77.8	275.2	144.7	1,349	184.0	0.79	1.05	7.33	18.83	Main Lobe	KIMB-1
PDL07-55	DO27L-07-11	38.9	119.8	26.55	189	34.8	0.76	1.02	5.43	13.95	Main Lobe	KIMB-1
PDL07-56	DO27L-07-11	119.8	275.3	65.19	624	94.5	0.69	0.92	6.60	16.95	Main Lobe	KIMB-1
PDL07-21	DO27L-07-12	46.0	98.3	22.54	248	34.0	0.66	0.88	7.29	18.73	Main Lobe	KIMB-1
PDL07-22	DO27L-07-12	98.3	126.6	30.73	262	38.7	0.79	1.06	6.78	17.40	Main Lobe	KIMB-1
PDL07-23	DO27L-07-12	126.6	160.1	16.03	192	23.4	0.69	0.91	8.21	21.08	Main Lobe	KIMB-1
PDL07-46	DO27L-07-13	39.0	108.4	21.08	172	30.4	0.69	0.92	5.65	14.52	Main Lobe	KIMB-1
PDL07-47	DO27L-07-13	108.4	158.8	26.79	298	41.4	0.65	0.86	7.19	18.47	Main Lobe	KIMB-1
PDL07-19	DO27L-07-14	56.0	186.0	50.6	528	64.0	0.79	1.05	8.25	21.18	Main Lobe	KIMB-1
PDL07-29	DO27L-07-16	54.0	216.0	71.58	700	84.1	0.85	1.13	8.33	21.38	Main Lobe	KIMB-1
PDL07-01	DO27L-07-17	53.0	83.5	11.71	135	18.5	0.63	0.84	7.28	18.70	Main Lobe	KIMB-1
PDL07-02	DO27L-07-17	83.5	115.3	12.07	166	20.5	0.59	0.79	8.11	20.83	Main Lobe	KIMB-1
PDL07-03	DO27L-07-17	115.3	266.6	88.23	1088	125.5	0.70	0.94	8.67	22.27	Main Lobe	KIMB-1
PDL07-28	DO27L-07-18	60.3	277.1	72.07	830	117.7	0.61	0.82	7.05	18.10	Main Lobe	KIMB-1
PDL07-26	DO27L-07-19	54.4	295.0	84.72	893	118.7	0.71	0.95	7.53	19.32	Main Lobe	KIMB-1
PDL07-05	DO27L-07-24	56.0	81.7	11.36	156	17.5	0.65	0.86	8.90	22.86	Main Lobe	KIMB-1
PDL07-06	DO27L-07-24	81.7	113.2	17.49	229	19.1	0.92	1.22	12.02	30.86	Main Lobe	KIMB-1
PDL07-07	DO27L-07-24	113.2	284.0	66.14	725	94.7	0.70	0.93	7.66	19.66	Main Lobe	KIMB-1
PDL07-27	DO27L-07-20	47.4	119.4	27.38	308	41.7	0.66	0.87	7.38	18.96	Main Lobe	KIMB-1
PDL07-51	DO27L-07-20	119.4	136.6	7.44	77	14.7	0.51	0.67	5.23	13.44	Main Lobe	KIMB-1

Sample #	RC Hole #	From	To	Total Carats	Total Stones	Calculated Tonnes	cpt	Adjusted cpt	stones / tonne	Adjusted s/t	Lobe	Lithology
PDL07-10	DO27L-07-04	43.7	70.5	11.16	121	11.5	0.97	1.29	10.49	26.93	NE Lobe	KIMB-1
PDL07-48	DO27L-07-05	48.4	81.1	19.01	185	22.5	0.85	1.13	8.23	21.13	NE Lobe	KIMB-1
PDL07-49	DO27L-07-05	81.1	168.6	38.45	403	52.4	0.73	0.98	7.68	19.73	NE Lobe	KIMB-1
PDL07-50	DO27L-07-06	36.5	150.7	38.01	235	42.2	0.90	1.20	5.57	14.29	NE Lobe	KIMB-1
PDL07-24	DO27L-07-09	53.0	104.8	13.73	114	16.3	0.84	1.12	7.00	17.98	NE Lobe	KIMB-1
PDL07-25	DO27L-07-09	104.8	171.0	14.61	185	24.0	0.61	0.81	7.70	19.78	NE Lobe	KIMB-1
PDL07-31	DO27L-NE-01	14.0	44.7	8.52	123	19.9	0.43	0.57	6.18	15.88	NE Lobe	KIMB-1
PDL07-36	DO27L-NE-03	5.0	75.2	22.15	276	43.3	0.51	0.68	6.37	16.36	NE Lobe	KIMB-1
PDL07-39	DO27L-NE-04	7.7	95.0	25.02	322	62.7	0.40	0.53	5.14	13.20	NE Lobe	KIMB-1
PDL07-41	DO27L-NE-05	32.6	98.6	32.48	311	49.3	0.66	0.88	6.31	16.20	NE Lobe	KIMB-1
PDL07-11	DO27L-07-04	70.5	101.6	10.2	128	13.6	0.75	1.00	9.41	24.17	NE Lobe	OTHER (MIXED)
PDL07-12	DO27L-07-04	101.6	122.9	12.45	162	33.4	0.37	0.50	4.85	12.46	NE Lobe	OTHER (MIXED)
PDL07-13	DO27L-07-04	122.9	163.1	12.07	138	12.5	0.97	1.29	11.05	28.39	NE Lobe	OTHER (MIXED)
PDL07-52	DO27L-07-05	168.5	280.8	24.99	267	35.3	0.71	0.94	7.56	19.40	NE Lobe	OTHER (MIXED)
PDL07-18	DO27L-07-22	55.5	277.0	56.57	640	99.5	0.57	0.76	6.43	16.51	Main Lobe	KIMB-1
PDL07-20	DO27L-07-23	53.8	256.5	80.74	974	103.7	0.78	1.04	9.39	24.12	Main Lobe	KIMB-1
PDL07-14	DO27L-07-25	54.6	275.7	69.72	799	110.4	0.63	0.84	7.24	18.58	Main Lobe	KIMB-1
PDL07-32	DO27L-NE-01	44.7	79.1	14.05	121	19.8	0.71	0.95	6.13	15.73	NE Lobe	KIMB-1
PDL07-33	DO27L-NE-01	79.1	98.3	3.57	32	5.4	0.67	0.89	5.97	15.33	NE Lobe	OTHER (MIXED)
PDL07-34	DO27L-NE-02	30.9	85.5	7.98	93	21.2	0.38	0.50	4.39	11.28	NE Lobe	KIMB-1
PDL07-30	DO27L-NE-02	39.7	83.4	10.87	121	15.5	0.70	0.93	7.80	20.02	NE Lobe	KIMB-1
PDL07-35	DO27L-NE-02	85.5	119.5	7.67	72	8.9	0.86	1.15	8.09	20.77	NE Lobe	OTHER (MIXED)
PDL07-37	DO27L-NE-03	75.2	94.2	9.22	102	23.2	0.40	0.53	4.40	11.29	NE Lobe	KIMB-1
PDL07-38	DO27L-NE-03	94.2	104.6	5.51	95	3.1	1.76	2.35	30.34	77.91	NE Lobe	OTHER (MIXED)
PDL07-40	DO27L-NE-04	95.0	118.3	7.82	103	12.8	0.61	0.82	8.05	20.68	NE Lobe	OTHER (MIXED)
PDL07-42	DO27L-NE-05	98.6	130.8	11.74	152	28.6	0.41	0.55	5.31	13.63	NE Lobe	OTHER (MIXED)
PDL07-43	DO27L-NE-05	130.8	160.4	4.35	60	9.8	0.44	0.59	6.13	15.75	NE Lobe	OTHER (MIXED)
PDL07-57	DO27L-NE-06	30.7	77.3	8.18	115	na	na	na	na	na	NE Lobe	KIMB-1

13.5 Comments on Section 13

Metallurgical testwork is adequate to support resource estimation and preliminary mine planning but additional work may be required to support detailed mine and process plant planning.

14.0 MINERAL RESOURCE ESTIMATES

14.1 Resource Estimate

14.1.1 Introduction

The following sections summarize the resource model developed for the assessment of the kimberlitic occurrence in the DO-27 pipe. The resource model has been developed in concert with NI 43-101 requirements as set out in CIM Definition Standards – For Mineral Resources and Mineral Reserves (2005) and are consistent with the updated May 10, 2014 version and CIM Estimation of Mineral Resources and Mineral Reserves – Best Practice Guidelines (2003), including the preparation of a report documenting the findings.

14.2 Resource Estimate Review

14.2.1 Geological Model

AMEC used geological models for the DO-27 pipe outline developed by Mineral Services Canada Inc. The models were developed and refined under guidance and review by AMEC over the course of 2006 and 2007. Two solids were modelled; KIMB-P shell and KIMB-1 (Figure 14-1). The KIMB-P shell represents the entire kimberlite pipe including KIMB-1, but excluding some kimberlite believed to be produced by precursor eruptions (KIMB-2). KIMB-1 is pyroclastic kimberlite (PK) that forms the bulk of the pipe and is more fully described in Section 7. The core holes used as the basis for the geological model are listed in Table 14-1. The volume of kimberlite between the KIMB-P shell and KIMB-1 solid represents KIMB-P which is volcanoclastic, possibly resedimented, kimberlite infilling the DO-27 pipe that cannot be further subdivided into KIMB-1 or KIMB-3. It is present in low volumes at the pipe margins in many areas of the kimberlite. It contains variable amounts of dilution, and can have 15% mud as xenoliths and within the matrix. It is generally fresher than KIMB-1 and often contains fresh olivine macrocrysts. KIMB-P has not been well sampled and AMEC is of the opinion that the grade and quality of diamonds are not adequately known to support resource estimation in that portion of the pipe. The limits of KIMB-P are adequately known from core drilling to define those limits. KIMB-1 has been well sampled and the grade and quality of diamonds are adequately known to support resource estimation. The volume between KIMB-P and KIMB-1 is known to be diamondiferous and represents an indeterminate upside potential. The KIMB-1 model was used to flag the blocks for estimation in the model. The additional tonnage contained inside the KIMB-P model but outside of the KIMB-1 model was not used in the resource estimation.



Figure 14-1: Example Northing Section Showing Modelled Kimberlite Boundaries
(courtesy of Peregrine, 2014)

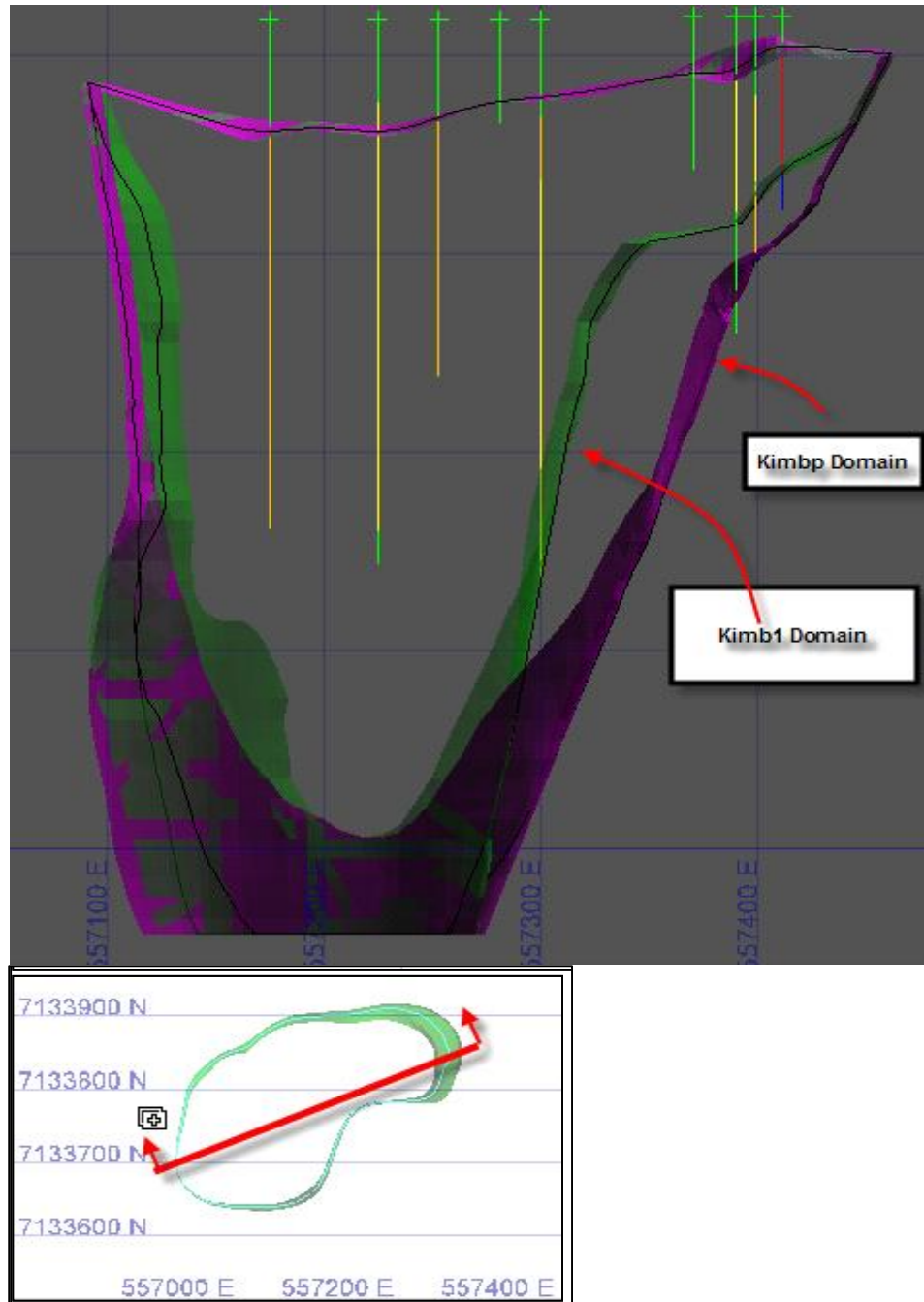


Table 14-1: Core Holes Used for the DO-27 Geological Model

Hole_ID	Hole_ID	Hole_ID	Hole_ID
DO27-05-01	DO27-06-21	DO27-07-42	DO27-GT06-05
DO27-05-02	DO27-06-22	DO27-07-43	DO27-GT06-06
DO27-05-03	DO27-06-23	DO27-07-44	DO27-GT06-07
DO27-05-04	DO27-06-24	DO27-07-45	DO27-GT06-08
DO27-05-05	DO27-06-25	DO27-07-46	DO27-GT06-09
DO27-05-06	DO27-06-26	DO27-07-47	DO27-GT06-10
DO27-05-07	DO27-06-27	DO27-07-48	
DO27-05-08	DO27-06-28	DO27-07-49	
DO27-05-09	DO27-06-29	DO27-07-50	
DO27-05-10	DO27-06-30	DO27-07-51	
DO27-05-11	DO27-06-31	DO27-07-52	
DO27-05-12	DO27-06-32	DO27-07-53	
DO27-06-13	DO27-07-33	DO27-07-54	
DO27-06-14	DO27-07-34	DO27-07-55	
DO27-06-15	DO27-07-36	DO27-07-56	
DO27-06-16	DO27-07-37	DO27-07-57	
DO27-06-17	DO27-07-38	DO27-GT06-01	
DO27-06-18	DO27-07-39	DO27-GT06-02	
DO27-06-19	DO27-07-40	DO27-GT06-03	
DO27-06-20	DO27-07-41	DO27-GT06-04	

14.2.2 Composites

Table 13-5 lists the LDD holes, sample intervals, and adjusted grade used for resource estimation. AMEC manually composited the LDD diamond data on a hole-by-hole basis. In several holes, collection of individual samples was not possible (see Section 13.4). In these cases, AMEC chose to composite these holes to equal 50 m sample lengths (roughly 40 tonne sample weight). The results were analyzed in some detail prior to the final choice of length and tonnage. AMEC considers the composite length to be appropriate for the type of deposit, the dimensions of the block model, and the sampling issues related to the RC drilling (see Section 13.3 and Section 13.4).

14.2.3 Exploratory Data Analysis (EDA²) and Diamond Size Frequency Analyses

Diamond Size Frequency Analyses

A study of diamond size frequencies issues related to the resource model was undertaken using the macrodiamonds collected primarily in the 2006 and 2007 field seasons. The 2006 and 2007 sampling programs recovered some 2,525 tonnes, 22,537 stones, and 1,788 carats. Study of these data showed that the distributions were affected by different lower cut-off sizes at the treatment plant. AMEC used factors derived from the industry standard recovery studies to adjust the distributions before their use in the resource estimation. Detailed analyses of size distributions in conjunction with the actuality that similar kimberlitic horizons were being sampled resulted in combining the 2006 and 2007 results.

A comparison of these relationships showed a near identical grade for 2006 and 2007 in the +7, +9, +11, and +13 diamond sieve size classes. Below 0.1 cts/stn (carats per stone) in the +1, +3, and +5 sieve classes the recovery was much higher in 2006 than in 2007 because of different lower cut-off size used in the treatment plant. In 2007 the lower cut-off size was approximately 1 mm and in 2006 a smaller cut-off size was used. During 2007, the recovery in the +15 and +17 diamond sieve classes was higher than in 2006.

The cumulative carat size frequency and the grade per size class relationship were modelled for the combination of 2006 and 2007 and this produced a size frequency model at 1 mm cut-off that can be used with the results of diamond valuation to produce a \$/ct (dollar per carat) value for DO-27. The composite model produced a global average grade for the DO-27 of 0.9145 cpt which is the average grade of the adjusted composites. Factors derived from these analyses for conversion of individual sample cpht values were 1.33 for 2007 data (addresses deficiency of small stones due to treatment plant problem) and 1.11 for 2006 data (small degree of deficiency of large stones).

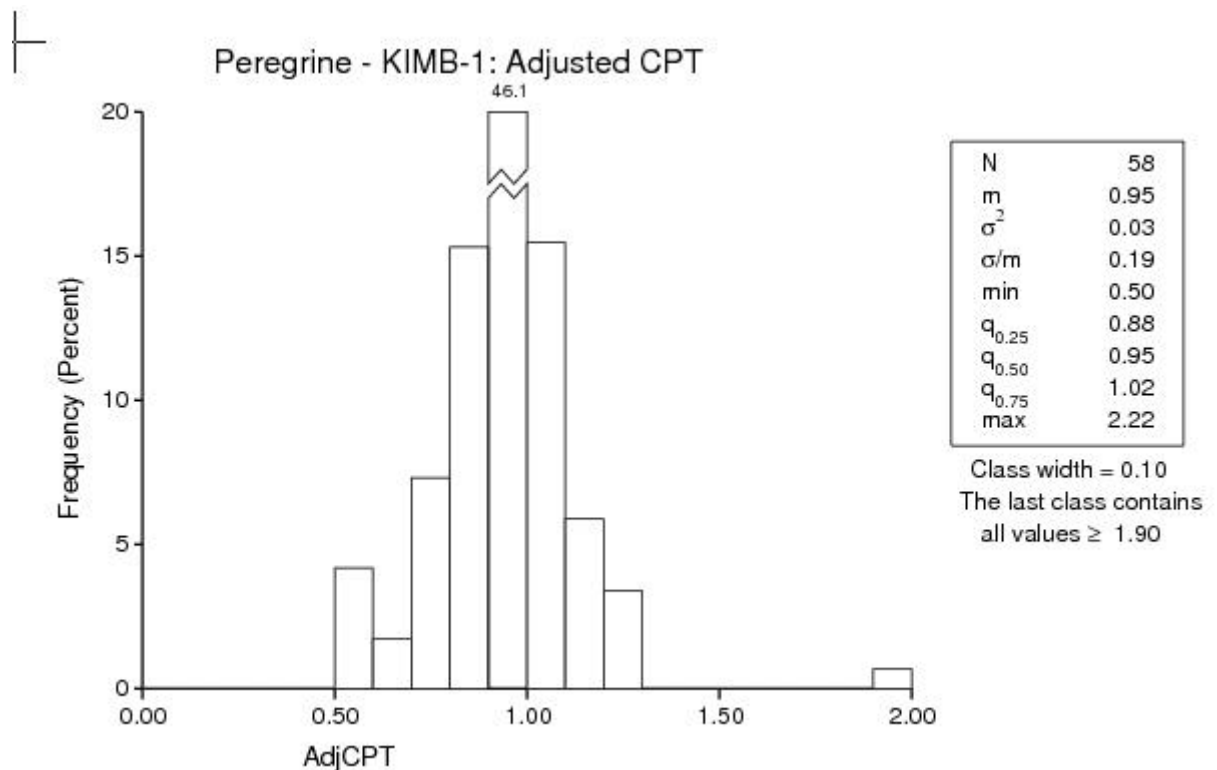
EDA for LDD Composites

The treatment of the diamond data (discussed in the previous section) required that analyses be done in cpt units rather than spt (stone per tonne) or spcm (stones per cubic metre), sometimes seen in other projects. The histogram for adjusted cpt

² Exploratory data analysis (EDA) consists of univariate statistics and geostatistics used in support of block grade estimation plans and resource estimates. One of the principal goals of the work is to provide guidance for domaining or separating the deposit into divisions suitable for grade estimation. The studies are typically undertaken on both assays and composites.

samples is shown in Figure 14-2. The distribution has an extremely low coefficient of variation³ of 0.19 highlighting the low variability of the grade data in the KIMB-1.

Figure 14-2: Histogram of Adjusted CPT in Kimb1



Variography

Variography⁴ was performed on the composited cpt data for the KIMB-1 domain. Variograms were poor to moderate in quality. The variogram model used in the kriging interpolation had a nugget of 0.62. The variogram model used was a two structure spherical model with no rotations. The range of the variogram was approximately 100 m at the full sill and there was no anisotropy. The poor variogram is not unusual for a diamond deposit.

³ The coefficient of variation is the mean divided by the standard deviation of the population. It provides a useful statistic for comparing different distributions.

⁴ Variography is the study of the spatial variability of an attribute (cpt, Cu etc.) within a mineral deposit. The spatial variability can be measured by several different functions. In the kriging interpolation process, values of the variogram function may be required for which there are no experimental data. Therefore a model is fitted to the data, which permits inference of the variogram for any vector h in three-dimensional space.

14.2.4 Estimation Domains

Initial analyses and modelling indicated that more than one kimberlitic domain might be applicable. Subsequent study of the diamond data however, resulted in combining the data into the main kimberlite type (KIMB-1). AMEC considers this approach to be appropriate given the knowledge in the deposit to date and the amount of drilling information available.

14.2.5 Density Modelling

AMEC produced a three dimensional density model because strong vertical and possible horizontal trends to density were noted during a preliminary investigation of density (Figure 14-3). AMEC used inverse distance squared (ID2) to estimate density into 10 x 10 x 5 m blocks. The following search parameters were used:

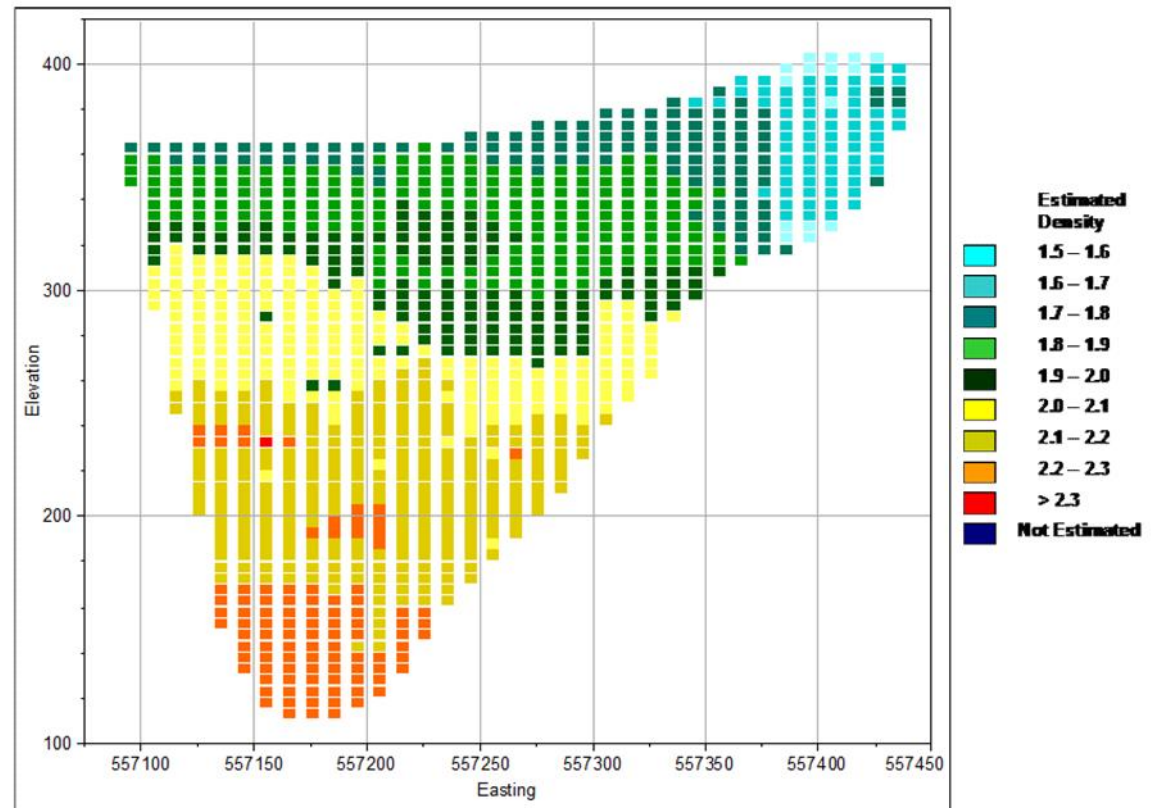
- First pass 50 x 50 x 30 m search - estimated 19,058 out of 25,618 blocks
- Second pass 100 x 100 x 40 m search to fill un-estimated blocks - estimated 5,400 out of 6,560 blocks.

The second pass was required to estimate blocks within the modelled kimberlite that were too far from data to be estimated by the first pass. Data were too sparse to define adequate variograms. The vertical restriction limited "smearing" of the density values vertically.

This model was then used to assign densities and tonnes to blocks in the grade/tonnage estimate.

Figure 14-3: Section 7122825 N Density Section

DO-27 7133825 N



14.2.6 Model Setup

The block model for the grade estimation used a block size of 25 x 25 x 15 m. The block size is adequate for the deposit and given the situation with sample compositing. The block model is not rotated.

14.2.7 Estimation Plan⁵

AMEC's modelling consisted of grade interpolation by ordinary kriging (OK) for (cpt). Nearest-neighbour⁶ (NN) grades were interpolated by AMEC for validation purposes.

⁵ The estimation plan refers to the set of parameters and controls used when interpolating block grade estimates from samples and/or composites. The plan will typically include data search specifications, search ellipse orientations, estimation technique (often specifying variograms for use in kriged estimates) and various other parameters for controlling the block or point estimations.

A multiple pass strategy was used where smaller search ellipses were used for blocks close to data, while large ellipses were used further away from the data.

Blocks were discretized as 4 x 4 x 1 m for the OK estimation. Search rotation and distances were bearing 90, plunge 0, dip 0, major axis 150, semi-major axis 150, and minor axis 150. The variogram model used in the OK estimation was discussed above.

Composite selection was completed as per the following:

- Pass 1 had a minimum of two composites and a maximum of 16 composites; octant search was used, with a minimum of one octant containing composites and a minimum samples/octant equal to two.
- Pass 2 allowed a minimum of one and maximum number of composites of 16 with no octant restrictions.

The kriged estimate of grade is 0.94 cpt for the DO-27 pipe, as opposed to the 0.9145 cpt grade estimated by averaging the composite grades in the database.

14.2.8 Validation

Model validation included global bias check, swath plots, change of support analysis, and visual checks of block estimates.

Visual Inspection

Visual inspection is very important to detect spatial artefacts. This step is also useful to ensure that the block model honours drill hole data. Composite data, block model, and geologic overlays were reviewed on the computer screen on both sections and plans. The checks showed adequate agreement between composite values and model cell values.

Model Checks for Global Bias

AMEC checked the block model estimates for global bias by comparing the average grades from the model with the average from the nearest-neighbour estimates. The

⁶ A nearest neighbour estimate is simply the assignment of the grade of the closest composite grade to the block. This sort of estimate is often used to compare to and validate other estimation results on a global basis such as within estimation domains or within an entire bench/level.

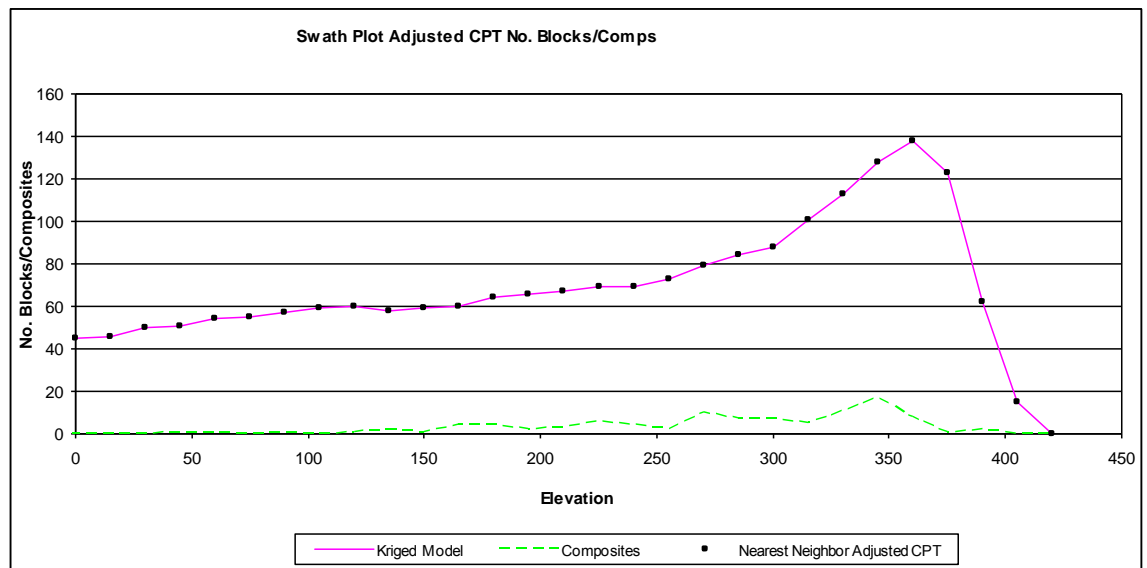
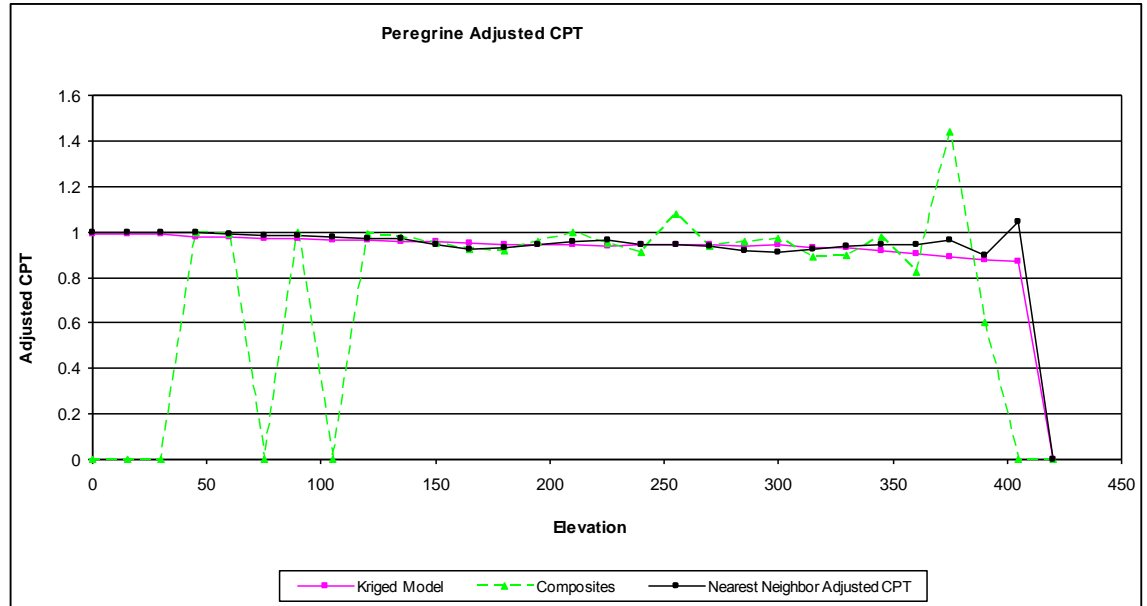
nearest-neighbour estimator declusters the data and produces a theoretically unbiased estimate of the average value when no cutoff grade is imposed and is a good basis for checking the performance of different estimation methods. The OK estimates validated well, falling within 1% of the declustered composite grades.

Validation by Grade Profiles

AMEC also checked for local trends in the grade estimates (grade profiles⁷ or swath checks). This was done by plotting mean values from the nearest-neighbour estimate versus the OK results for elevation easting and northing (various slice thicknesses were studied). Results show that there are no significant local biases in the results. The top portion of Figure 14-4 illustrates an example grade profile in the vertical. The magenta line is the average of the OK block estimates while the black line is the average of the declustered composites (NN block estimate). The green line is the average of the composites. Where the green line retreats to zero, there are no data (rather than actual zero grade). The bottom part of Figure 14-4 illustrates the number of blocks (OK and NN) involved in the comparison as well as the number of composites.

⁷ Grade profiles (sometimes called swath plots) calculate and display average values of the variable in question in a given direction (such as Elevation) for the set of blocks or data under consideration. Displaying several different profiles can assist in observing spatial trends or comparing spatial distributions such as a Kriged result versus a declustered distribution from composites.

Figure 14-4: Grade Profile Results



Discussion

The situation with sampling in the RC drilling (see Section 14.3) has certainly contributed to the lack of local variability evidenced in the resource model estimates. Study of the block estimates in relation to the long composites indicates that local

variability is probably lost, or at least dampened. There is no remedy given the physical situation of the sampling. The long range model produced for this work, therefore, must be viewed as the basis for a bulk-mining target. During any Mineral Reserve conversion process, there can be no opportunity for selective mining options that rely on grade variability within the resource model.

14.3 Resource Estimate and Classification

14.3.1 Summary

AMEC used a base case from the various Lerchs-Grossman (LG) sensitivity runs to establish reasonable prospects for eventual economic extraction. The shell was used to restrict the estimated block model for tabulation and reporting. AMEC has used the Scrub-only, 'high' diamond price, LG case discussed below. This case uses the 'high' diamond value from the WWW valuation. Based on project and resource modelling work to date, AMEC considers the kimberlitic material contained within the resulting resource shell to be an Indicated Mineral Resource (Table 14-2). The base elevation of the Indicated Mineral Resource lies within adequate proximity of RC drilling where macrodiamond sampling has occurred. These data have been used to estimate and value the diamond resource. While the effective date of the estimation and tabulation is some six years older than this Technical Report, AMEC reviewed mining costs and diamond prices and is of the opinion that diamond price escalation (WWW, 2014) exceeds the effect of mining and operating cost escalation over the intervening time period. The application of escalated parameters would not result in a decreased resource-constraining LG shell.

AMEC relied on the WWW work to establish valuations for the diamonds. The valuations are applied to the estimated resource model grades models and become the basis for the development of LG resource shells within which resources have been declared. The valuation process carried out by WWW and others is partially analytical (in the way that a gold assay process can be termed analytical) in that the diamonds are studied and classified. The dollar per carat determinations for various stones however, is ultimately governed by the valuator's price-book. This part of the process is proprietary, governed by a given valuator's view of the marketplace and can vary from valuator to valuator, particularly for larger stones. Even in larger parcels valuator's must then 'model' or extrapolate values in the larger stone size classes where there may be few representatives. The methodology for modelling is also proprietary. The culmination of the process is the average prices for given zones, lobes or pipes. The heavy dependence of the process on economic market assessments, and the proprietary nature of the valuator's assumptions and methods, materially affects the quality of, and confidence in, the mineral resource estimate. In

this way, the valuations used in the resource assessments are quite different than the concept of analytical mineral assays in, for instance, a precious metal project. The proprietary nature of the processes employed for valuations limit any quantitative assessment of the added risk to the Project.

LDD sampling (refer Sections 13.4, 14.2.2) resulted in a mineral resource model where local variations in block grades may not be fully reflected in the resource block estimates. The Indicated Mineral Resource classification must therefore carry the important caveat that it can only be converted to a Mineral Reserve without the use of cutoffs or mining selectivity assumptions. Any future Mineral Reserve conversion process must treat the Indicated Mineral Resource from this long-range resource model as a bulk-mining scenario with no opportunity for selective mining alternatives.

There has been no Inferred Mineral Resource declared at this time given the results of the resource shell studies. It is clear from the resource shell results however, that changing conditions may result in a declaration of an Inferred Mineral Resource in the future.

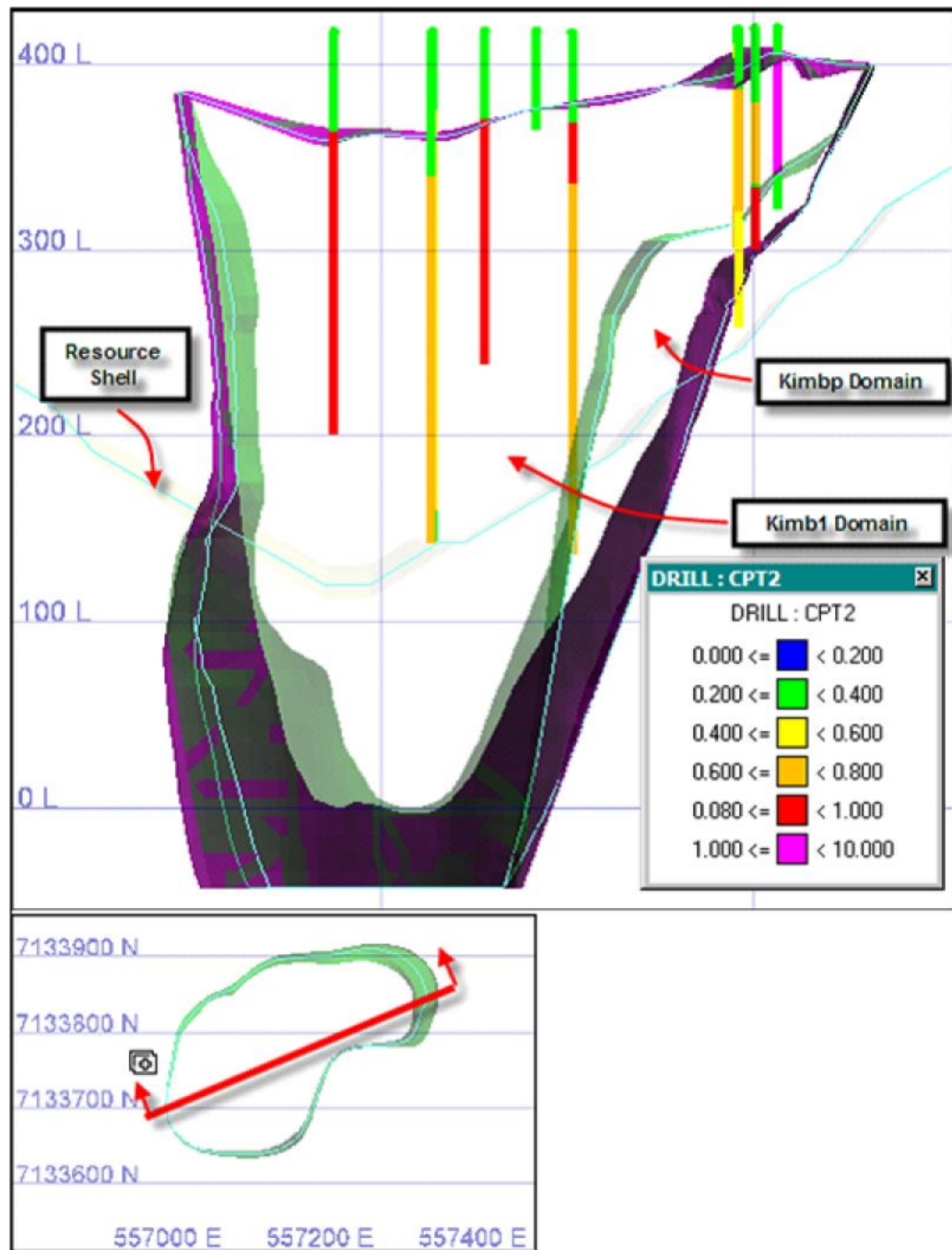
The tonnage reported in Table 14-2 lies within the resource shell and the modelled KIMB-1 boundary and is reported as undiluted kimberlite only (or partial block tonnes). The tabulation does not include mixed kimberlitic material that occurs between the KIMB-1 and KIMB-P boundary. Figure 14-5 illustrates an example northing section with the resource shell plotted against a backdrop of LDD sampling and the KIMB-1 boundary.

Table 14-2: DO-27 Mineral Resource Table

	Tonnes (1,000,000's)	Carats (1,000,000's)	Grade (cpt)
Indicated Mineral Resource	19.5	18.2	0.94
Notes : <ul style="list-style-type: none"> - Effective data is August 7, 2008 - Dr. Ted Eggleston, RM SME and Ken Brisebois, P.Eng are the Qualified Persons for the estimate. - Mineral Resources are stated at an effective 1mm bottom cutoff and are constrained within a conceptual mining shell based on assumptions of a diamond price of US\$72/Carat, 100% metallurgical recovery, US\$2.05/t mining costs with an incremental \$0.02 per 10m depth, US\$19.96/t operating costs including on-site scrubbing and an estimate for trucking to, and processing at, an off-site diamond processing facility. 			



Figure 14-5: Example Northing Section Showing Resource Shell (courtesy of Peregrine, 2014)



14.3.2 Reasonable Prospects for Eventual Economic Extraction

Canadian Institute of Mining and Metallurgy (CIM) standards and securities commission disclosure regulations require that a resource can only be declared on a mineral deposit that has “reasonable prospects for eventual economic extraction”. In 2007, Peregrine and AMEC reviewed conceptual technical and economic aspects of the Project and concluded that open pit mining with simple on-site processing consisting of scrubbing of the kimberlite to remove undersize material would possibly provide the best return for the Project (AMEC Americas, 2007a-i, 2008; Patsias and Verret, 2007). Mining and processing costs were scaled from other similar operations. The reported Mineral Resources for the DO-27 kimberlite that meet these criteria were established by AMEC using LG economic pit shell for the scrub-only operation generated using the Whittle™ software package. Following are the assumptions used in that conceptual analysis:

- **Diamond Prices.** On December 17, 2007, Peregrine reported that the modelled diamond value for a 2,075 carat parcel ranged from US \$43-70 per carat, with a base case of US \$51 per carat. The valuation is summarized in Table 14-3. The “high” diamond price of US \$70 per carat was used for pit shell generation.

Table 14-3: DO-27 Diamond Valuation Results

Weight Of Valuation Sample (Carats) ⁽¹⁾	Largest Diamonds (Carats)	“Base Case” Diamond Price Model (US\$/Carat) ⁽²⁾	“High” Diamond Price Model (US\$/Carat) ⁽²⁾	“Low” Diamond Price Model (US\$/Carat) ⁽²⁾
2,075 ⁽¹⁾	9.45, 7.03, 7.11, 6.03, 5.17, 4.84, 4.35, 4.19	\$51	\$70	\$43

(1) Sample weight represents the total carat weight of diamonds larger than the 1 DTC sieve size (approx. 0.85 mm) presented for valuation following the combination of individual sub-samples from the 2005, 2006 and 2007 bulk sampling programs and after acid cleaning.

(2) As determined by WWW International Diamond Consultants Ltd. from the WWW October 31, 2007 price book

- **Grade.** The resource block model was used as the basic data for the pit shell study and an average grade of 0.94 cpt was used. In most resource estimates, local sampling on comparatively small sample support sizes (here RC samples) are reconciled to the diamond grades from the “run of mine” material (bulk sampling) that would be processed in a mining operation. At DO-27, there is a lack of sample data from larger bulk samples of run of mine material with which to compare the RC results. For the purposes of the resource estimate at DO-27, no adjustment related to possible bulk sample grades has been made.

- **Confidence Category.** Local variations in block grades may not be fully reflected in the resource block estimates. The Indicated Mineral Resource can only be converted to a Reserve using no cutoffs or selectivity assumptions. The reserve conversion process must treat the Indicated Mineral Resource in this long-range resource model as a bulk mined scenario with no opportunity for mining selectivity cases.
- **Metallurgical Recovery.** 100 %.
- **Mining Costs.** US \$2.05 per tonne of ore or waste incremented by US \$0.02 per 10 m depth.
- **Operating Costs.** US \$19.96 per tonne of mineralized material including on-site scrubbing and an estimate for trucking to and processing at a third-party diamond recovery facility.
- **Capital Costs.** US \$400-500 million.
- **Pit Slopes.** Granite pit slope inter-ramp angles ranging from 45° to 53°.

The legal path forward for permitting of mines in the Northwest Territories is clearly defined. A number of mines have been successfully permitted in recent years and AMEC believes that there is a reasonable expectation that a mine could be permitted at DO-27.

Mineral and surface tenure appear to be secure. Sufficient land for mining and infrastructure are available to support a mine on DO-27. Agreement with local First Nations will be required for surface use, but there is a reasonable expectation that those agreements can be reached. Local water resources are adequate to support mining but will require proper permits from local authorities.

Based on resource shells generated within Whittle™ and other factors discussed above, AMEC concludes that the DO-27 Resource has reasonable prospects for eventual economic extraction.

14.4 Targets for Further Exploration

AMEC identified an additional 6.5-8.5 million tonnes of kimberlite in DO-27 as a target for further exploration based on an analysis of the drill data and the three dimensional model (Figure 14-5). Diamond grade in the target is possibly between 0.8 and 1 carat/tonne. The body consists of the continuation of the kimberlitic pipe at depth below the classified resource and is delineated by eight core holes and two LDD holes. Logged kimberlite geology is similar to that of the Indicated Mineral Resource

area and has been modelled to approximately the -50 m elevation. DO-27 remains open below that elevation and additional tonnage may be discovered with additional drilling. The potential quantity and grade of the DO-27 target for further exploration is conceptual in nature and there has been insufficient exploration to define a mineral resource. It is uncertain whether additional exploration will result in the target being delineated as a mineral resource. Success for conversion of this material to a Mineral Resource is dependent on several factors that impact the potential economic extraction. Those factors include uncertainty of the tonnage and grade continuity, amenability of the material to low-cost processing, and diamond quality.

14.5 Summary, Conclusions, and Recommendations

The three dimensional model of the DO-27 kimberlite and the tonnage and resource calculations are based on data from 66 core holes (17,300 metres) and 46 large diameter (35-61 cm) reverse circulation (RC) holes totalling 8,800 metres and sample results for a cumulative 3,200 dry tonnes of bulk sample material collected from the RC holes. The tonnage for each block was calculated by multiplying the interpreted volume by a specific gravity determined from a three dimensional density model developed by AMEC. The density model was based on 507 specific gravity measurements on drill core from throughout the body performed by Teck Cominco's Global Discovery Labs in Vancouver. Recovered macrodiamond results at a 1mm lower cutoff were used to interpolate grades into 25 x 25 x 15 m blocks. Ordinary kriging was used to estimate the block grades. The VulcanTM mine modelling software system was used to create the resource model.

Detailed analysis of the diamond size distributions led to an adjustment process whereby known inconsistencies in the diamond recovery regimes between drill campaigns were accommodated. Study of these data showed that the distributions were affected by year-to-year treatment plant recovery differences. AMEC used factors derived from industry standard recovery studies to adjust the distributions before their use in the resource estimation. Adjustments derived from these analyses for conversion of individual sample cpt values were 1.33 for 2007 data (addresses deficiency of small stones due to treatment plant differences) and 1.11 for 2006 data (small degree of deficiency of large stones).

AMEC used a base case from the various LG sensitivity runs to establish reasonable prospects for eventual economic extraction. The shell was used to restrict the estimated block model for tabulation and reporting. AMEC has used the scrub-only, 'high' diamond price, LG case discussed below. This case uses the 'high' diamond value from the WWW valuation. Based on Project and mineral resource modelling work to date, AMEC considers the kimberlitic material contained within the resulting

resource shell to be an Indicated Mineral Resource (Table 14-2). The base elevation of the Indicated Mineral Resource lies within adequate proximity of the RC drilling where macrodiamond sampling has occurred. These data have been used to estimate and value the diamond resource. While the effective date of the estimation and tabulation is some six years older than this Technical Report, AMEC is of the opinion that diamond price escalations outrun the effect of any potential mining and operating cost escalations over the intervening time period. This is supported by a WWW report dated 14 July 2014 that shows changes to the diamond price index since the October 2007 DO-27 valuation. The WWW report shows a general upward trend to diamond prices since the valuation of the DO-27 diamond parcel. The application of escalated parameters would not result in a decreased Resource shell. The DO-27 mineral resource estimates with an effective date of August 7, 2008 remain valid and relevant.

AMEC relied on the WWW work to establish values for the diamonds. The values are applied to the estimated resource model grades models and become the basis for the development of LG resource shells within which resources have been declared. The valuation process performed by WWW and others is partially analytical (in the way that a gold assay process can be termed analytical) in that the diamonds are studied and classified. The dollar per carat determinations for various stones however, is ultimately governed by the valuator's price-book. This part of the process is proprietary, governed by a given valuator's view of the marketplace and can vary from valuator to valuator, particularly for larger stones. Even in larger parcels valuator must then 'model' or extrapolate values in the larger stone size classes where there may be few representatives. The methodology for modelling is also proprietary. The culmination of the process is the average prices for given zones, lobes or pipes. The heavy dependence of the process on economic market assessments, and the proprietary nature of the valuator's assumptions and methods, materially affects the quality of, and confidence in, the mineral resource estimate. In this way, the valuations used in the resource assessments are quite different than the concept of analytical mineral assays in, for instance, a precious metal project. The proprietary nature of the processes employed for valuations limit any quantitative assessment of the added risk to the project.

LDD sampling procedures resulted in a resource model where local variations in block grades may not be fully reflected in the resource block estimates. The Indicated Mineral Resource classification must therefore carry the important caveat that it can only be converted to a Mineral Reserve without the use of cutoffs or mining selectivity assumptions. Any future Mineral Reserve conversion process must treat the Indicated Mineral Resource from this long-range resource model as a bulk-mining scenario with no opportunity for selective mining alternatives.

There has been no Inferred Mineral Resource declared at this time given the results of the resource shell runs. It is clear from the resource shell results however, that changing conditions may result in a declaration of an Inferred Mineral Resource in the future.

The tonnage reported in Table 14-1 lies within the resource shell and the modelled KIMB-1 boundary and is reported as undiluted kimberlite only (or partial block tonnes). The tabulation does not include mixed kimberlitic material that occurs between the KIMB-1 and KIMB-P boundary.

DO-27 has an Indicated Mineral Resource of about 19.5 Mt of kimberlite grading about 0.94 cpt. Material that is the target for further exploration may provide an additional 6.5-8.5 Mt of diamondiferous kimberlite with a possible grade of 0.8 to 1 cpt. Significant additional drilling is required to establish whether the anticipated tonnes and grade of this target for further exploration could be converted to a mineral resource.

Based on the above discussion, AMEC has concluded that DO-27 has reasonable prospects for eventual economic extraction, but cautions that several factors could negate that conclusion. Those factors include:

- Inability to secure mining permits
- Inability to secure water rights
- Significant decreases in diamond prices
- Significant increases in operating or capital costs



15.0 MINERAL RESERVE ESTIMATES

No mineral reserves have been identified at this time.



16.0 MINING METHODS

Not applicable at this time.



17.0 RECOVERY METHODS

Not applicable at this time.



18.0 PROJECT INFRASTRUCTURE

Not applicable at this time.



19.0 MARKET STUDIES AND CONTRACTS

Not applicable at this time.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

Not applicable at this time.



21.0 CAPITAL AND OPERATING COSTS

Not applicable at this time.



22.0 ECONOMIC ANALYSIS

Not applicable at this time.

23.0 ADJACENT PROPERTIES

The Project is situated at the southern border of the Diavik mine property. The DO-27 kimberlite is 23 km southeast of the Diavik mine site. All mineral leases to the north of the Project area are held by Diavik Diamond Mines Inc. Other active mineral claims and leases in the immediate area are held by various operators. No information or data are available from, or relied upon, from adjacent properties for this report, nor is any relationship with any mineralization on adjacent properties implied.

24.0 OTHER RELEVANT DATA AND INFORMATION

Unlike other commodities such as gold or base metals, diamonds do not have a standard value per unit weight that can be used to calculate value of a deposit. A one carat diamond can be worth anywhere from less than one dollar to tens of thousands of dollars, depending on the shape, colour and quality. A parcel of diamonds must be individually examined to establish an average value. Diamond values also change with the mix of diamonds over time, however, as a whole, diamond values have tended to increase with time. As this can be a somewhat subjective exercise, multiple valuations from different professional diamond valuers, or diamantaires, are often obtained, and are usually averaged to give an estimate of the probable true price of the goods in question. Diamond price estimates can differ between valuers by as much as $\pm 20\%$, especially on smaller parcels of diamonds. These differences are simply due to the fact that different diamantaires will perceive the value of a stone or parcel of stones differently. Their price guidelines will differ somewhat as well.

In a valuation exercise a number of diamantaires are often used to get a range of valuations that can be averaged to get an accurate price estimate and to use these data to model an average price. Often, in early stage evaluations of diamond projects, diamond price modelling is undertaken. In price modelling, the small sample size is compensated for by estimation of what the diamond population in a larger sample would be. By doing this, the valuer attempts to predict the likelihood of finding larger stones and what their effect on the overall value of the parcel would be and as such, estimate more closely what the run of mine (ROM) value would be. Modelling involves study of the diamond parcel on hand, including size distributions and valuations, to statistically estimate the upper and lower limits of a production parcel at certain confidence levels based upon the small parcel on hand. To accomplish this, Peregrine contracted WWW to obtain valuations and perform price modelling. WWW are recognized international leaders in this field. M.M. Oosterveld, a professional mining engineer was contracted to give an independent review. M.M. Oosterveld is regarded as one of the leading authorities in diamond resource evaluation and diamond geostatistics. He has more than 30 years of experience in diamond mine development, including nearly a decade as Ore Evaluation Consultant to De Beers and Anglo American plc, involved in evaluating all of De Beers' diamond properties worldwide, and an additional 15 years of experience as an independent diamond resource consultant based in South Africa.

Small parcels of diamonds are difficult and time consuming to value, so individual sample goods are generally combined on the basis of geology or some other parameter. Valuation parcels are generally sieved into DTC sieve classes (+1, +3, +5, +7, +9, +11) and grainer and carater categories (Table 24-1).

Table 24-1: Standardized Sizing Parameters for Rough Diamonds

Size Class		Carats	
3 Grainer	0.66	to	0.89
4 Grainer	0.90	to	1.19
5 Grainer	1.20	to	1.39
6 Grainer	1.40	to	1.79
8 Grainer	1.80	to	2.49
10 Grainer	2.50	to	2.79
3 Ct	2.80	to	3.79
4 Ct	3.80	to	4.79
5 Ct	4.80	to	5.79
6 Ct	5.80	to	6.79
7 Ct	6.80	to	7.79
8 Ct	7.80	to	8.79
9 Ct	8.80	to	9.79
10 Ct	9.80	to	10.79
+10 Ct	10.80	to	14.79

A cumulative 2,075 carat diamond parcel acquired by large diameter, reverse circulation bulk sample drilling campaigns completed by Peregrine in 2005, 2006 and 2007 from the Main Lobe and Northeast Lobe pyroclastic kimberlite KIMB-1 units was used for value modelling. An additional 188 carats that were recovered from other minor, volumetrically insignificant, Northeast Lobe lithologies in 2006 and 2007 were not included in the valuation model as these lithologies may not be included in the final resource model. In addition the 1,566 carats recovered from KIMB-1 in 2007 were modelled separately (WWW International Diamond Consultants Ltd., 2007).

The valuation results are summarized in Table 24-2.

Table 24-2: DO-27 Diamond Valuation Results

Bulk Sampling Program	Weight Of Valuation Sample (Carats) ⁽¹⁾	Largest Diamonds (Carats)	“Base Case” Diamond Price Model (US\$/Carat) ⁽²⁾	“High” Diamond Price Model (US\$/Carat) ⁽²⁾	“Low” Diamond Price Model (US\$/Carat) ⁽²⁾
2007	1,566	9.45, 7.03, 6.03, 5.17, 4.84, 4.35, 4.19	\$52	\$72	\$39
2006/2005	509 ⁽³⁾	7.11, 3.91, 2.34	\$46	\$62	\$41
Combined	2,075 ⁽⁴⁾		\$51	\$70	\$43
⁽¹⁾ Sample weights represent the total carat weight of diamonds presented for valuation following the combination of individual sub-samples and after acid cleaning.					
⁽²⁾ As determined by WWW International Diamond Consultants Ltd.					
⁽³⁾ Values from the WWW October, 2006 price book, as reported by Peregrine on November 6, 2006.					
⁽⁴⁾ The combined sample was re-valued and modelled based on the WWW October 31, 2007 price book.					

The modelled value estimates for DO-27 represent an average diamond value in the rough diamond market as of November, 2007 that might reasonably be expected, based on standard production-scale recoveries of commercial-sized diamonds greater than 1.00 mm in size.

In addition to determining a modelled average price, WWW showed a 1,123 carat parcel from the Main Lobe KIMB-1 lithology from the 2007 bulk sample to four other internationally recognized, Antwerp-based, rough diamond valuers in order to obtain additional market-based, unmodelled valuations. This parcel was selected for spot price valuation as it was the single largest representative parcel of Main Lobe KIMB-1 diamonds. Average October, 2007 spot prices for the 1,123 carat parcel of US\$46, US\$48, US\$52, and US\$56 per carat respectively were determined by the four groups whereas the average spot price determined by WWW was US\$46 per carat (WWW International Diamond Consultants Ltd., 2007).

WWW believes it is highly unlikely that the modelled average price will be lower than the minimum values and that the high values should not be considered maximum values. The modelled average price is extremely sensitive to the value of large diamonds so there is a high degree of uncertainty in the modelled value of the larger stones that would be expected in a production scenario. This is an important fact given that the 2,075 carat parcel submitted for modelling contained only 22 stones

greater than two carats and five stones greater than five carats (WWW International Diamond Consultants Ltd., 2007).

Diamond price models principally attempt to correct for an absence of large diamonds which are typically under-represented at this scale of bulk sampling. WWW commented that the bulk samples are still considered small for fully modelling the average dollar value per carat. Usually, the average diamond price from a bulk sample is lower than the average diamond price for the resource in a mining scenario. WWW has indicated that for typical kimberlite diamond mines, 7,000 carats would usually give an unmodelled average price within 10% of the true value of a production scenario and a 3,000 carat parcel an unmodelled true value within 15%. After modelling of the price for a 3,000 carat parcel, confidence limits would be expected to tighten to within 10% (WWW, 2007).

25.0 INTERPRETATION AND CONCLUSIONS

25.1 Conclusions

25.1.1 Property Description and Location

The Project is located approximately 300 kilometres north-northeast of the city of Yellowknife in the Northwest Territories, Canada to the southeast of the Diavik diamond mine, centred at approximately 64° 20' N latitude and 109° 50' W longitude.

The claims and leases are divided into three main groups; each with differing ownership arrangements:

- WO Property
- LDG Thelon Property
- LDG Peregrine Property.

The WO Property

The WO Property consists of the following eight leases: 4131 (SAS 1), 4132 (SAS 2), 4133 (SAS 3), 5267 (TT 1), 5265 (TT 2), 5268 (TT 3), 5270 (OW 19), and 5271 (OW 20). The combined lease area totals 5,816.55 ha (14,373.00 acres).

As at the most recent WO Property cash call notice of 29 May 2014, the ownership percentages were:

- Peregrine Diamonds Ltd. = 72.097%
- Archon Minerals Limited = 17.569%
- DHK Diamonds Inc. = 10.334% (DHK is a corporation owned by three companies Dentonia Resources Ltd., Cosigo Resources Ltd., Kettle River Resources)

Peregrine informed AMEC that this ownership breakdown is different to that registered with the Northwest Territories Mining Recorder, which shows the leases to be 100% in Peregrine's name.

The WO Property has the following royalties payable in addition to the Northwest Territories provincial royalty requirements:

- Mantle Diamonds Canada Inc. has a 0.25% gross overriding royalty (GOR) that was purchased from Southern Era Diamonds Inc. in March 2009

- Aberex Minerals Ltd. has a 0.55% GOR
- 824567 Canada Limited has a 1.0% GOR (purchased from Kennecott/Rio Tinto Exploration in December 2012).

LDG Thelon Property

The LDG Thelon Property consists of the following three leases: 5269 (OKI 1), 5263 (OKI 2), 5264 (OKI 3). The combined lease area totals 1,632.91 ha (4,035.00 acres).

As at the most recent LDG Thelon Property cash call notice of 10 June, 2014, the ownership percentages were:

- Peregrine Diamonds Ltd. = 70.54%
- Thelon Capital Ltd. 29.46%.

Peregrine informed AMEC that this ownership breakdown is different to that registered with the Northwest Mining Recorder, which shows the leases to be held 65% in the name of Peregrine, and 35% in Thelon's name.

The LDG Thelon Property has the following royalty payable in addition to the Northwest Territories provincial royalty requirements:

- Claims staker Mackenzie Jaims has 4% GOR on all diamonds and 4% net smelter return (NSR) royalty on all metals.

LDG Peregrine Property

The LDG Peregrine Property consists of one lease: 5266 (CRW 5) and seven claims: MLT 1, MLT 2, MLT 3, MLT 4, MLT 5, MLT 6, MLT 8. The combined area totals 8,360.81 ha (20,660.00 acres).

The claims are 100% held by Peregrine. Peregrine informed AMEC that this ownership breakdown is the same as that registered with the Northwest Territories Mining Recorder, which shows the leases to be 100% in Peregrine's name.

The LDG Peregrine Property has the following royalty payable in addition to the Northwest Territories provincial royalty requirements:

- 1% GOR on diamonds to Thelon Capital
- 2% GOR on diamonds to a group consisting of Mike Magrum, Lane Dewar, Trevor Teed/974124 NWT Ltd.

Based on review of materials provided by Peregrine, AMEC considers the mineral tenure to be well established and supported by the information provided. AMEC did not independently confirm tenure and there is a possibility that tenure has flaws that could invalidate any or all of the claims and leases.

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

Access to the area is from Yellowknife, which is the main staging area for all operations in this region. Most necessary services can be obtained in Yellowknife. Access is commonly via fixed wing aircraft equipped with wheels, floats, or skis, depending on the season. From approximately mid-January to mid-April access is provided via a winter ice road which connects Yellowknife with the Lupin Gold Mine and the Diavik and Ekati Diamond Mines. This road passes within 11 km of the DO-27 kimberlite.

For the current and recommended exploration activities, potential processing plant sites, tailings and waste storage and disposal sites and other mining related issues are not relevant. However, sufficient water and appropriate facility sites appear to be present. Water permits for the current and recommended program are in hand.

25.1.3 Geological Setting

The Project lies within the Slave Structural Province of the Northwest Territories, northern Canada, which is an Archean segment of the North American Craton.

Two-mica post-deformational granite is the only major rock type on the property. Medium- and high-grade Archean metaturbidites occur both east and west of the property. All of the kimberlites discovered to date on the property, including DO-27 and DO-18, which lies 800 m north of DO-27, intrude the granite. DO-27 does not outcrop; it is overlain by 23-50 m of till consisting of angular granitic boulders, gravel, sand, silt and clay and is mostly covered by Tli Kwi Cho Lake with an average depth of approximately 4 m and an aerial extent of about 1 km². Till thickness at DO-18 is between five and 20 metres.

Mineralization on the Project consists of kimberlite pipes containing diamonds.

AMEC is of the opinion that the geology of the Project is adequately known to support resource estimation at DO-27 and exploration elsewhere.

25.1.4 Deposit Type

DO-27 is a diamondiferous kimberlite pipe similar to others found in the Canadian Arctic, South Africa, and Russia.

25.1.5 Exploration

Exploration on the Project consists of till sampling, airborne and ground geophysical surveys and core and reverse circulation drilling. A short underground development was driven into the edge of the DO-27 pipe, but geotechnical problems prevented intersection of the main pipe. Core drilling was used primarily to define the extents of the pipe and as pilot holes for reverse circulation drilling which was used to produce a bulk sample of the pipe.

Till sampling and various geophysical methods were used to target exploration. Nine kimberlites have been discovered on the property and more are possible.

Exploration methods were appropriate for the deposit type.

25.2 Drilling

Drilling at DO-27 consists of 70 HQ and NQ core holes (18,248 m) and 46 large diameter reverse circulation holes (8,843 m) performed by Peregrine and 44 core holes (5,937 m) drilled by Kennecott in 1993. Core drilling was utilized to define the limits of the pipe to approximately 350 m depth, as pilot holes for the large diameter RC program, and to collect material for metallurgical tests. Large diameter RC drilling (LDD) was used to collect bulk samples of the kimberlite. A total of 6,678 m of kimberlite were intersected in the LDD holes.

Peregrine drilled 15 core holes (3,131 m) at DO-18 between 2005 and 2006. Kennecott drilled 13 core holes (2,106 m) between 1993 and 1996 to define the extent of the kimberlite.

Other drilling on the Project consists of 23 core holes (2,076 m) drilled between 1993 and 2002 by Kennecott and others on exploration targets and 6 core holes (658 m) drilled by Peregrine on various exploration targets.

25.2.1 Sampling Method and Approach

Drill holes were sampled for macro- and microdiamonds and submitted for caustic fusion analysis as deemed necessary. Sampling of drill core was done to industry standards

Bulk samples were collected by Peregrine in the winters of 2005, 2006, and 2007 by large diameter reverse circulation drilling using industry-standard practices.

25.2.2 Sample Preparation, Analysis, and Security

All macro- and microdiamond sampling was completed in Peregrine's secure facility in Yellowknife. Core sent for macro- and microdiamond analysis were security sealed and then transported by truck to the SRC, an ISO/IEC 17025 accredited laboratory. The caustic fusion method of diamond extraction was employed by the SRC.

All whole core from DO-27 sent for metallurgical testing was security sealed on site, shipped via wheel or float plane to Yellowknife, and then transported by truck to SGS Mineral Services (SGS) in Lakefield, Ontario.

The Ekati sample plant is a small-scale diamond recovery plant that was used to process the bulk samples. It is a secure facility with dedicated security staff, security procedures, and multiple layers of physical security measures in place.

Sample preparation is typical of preparation of diamond-bearing kimberlite samples. Processing of the samples was done to industry standards. No tampering or suspicious circumstances were noted during the handling of the Peregrine bulk samples and products at any point.

Macro- and microdiamond recovery was accomplished using processes and procedures that are standard in the industry.

Sample security was consistent with industry-leading practices.

25.2.3 Data Verification

AMEC monitored and verified data that were to be used for the DO-27 resource estimation. All data in the database were checked and double checked. Discrepancies were resolved immediately. AMEC believes that the database is adequate for resource estimation.

Jennifer Pell monitored the work in 2011 and 2012 and AMEC verified those data against original data from SRC.

25.2.4 Adjacent Properties

The Project is situated at the southern border of the Diavik mine property. The DO-27 kimberlite itself is 23 km southeast of the Diavik mine site. All mineral leases to the north of the Project are held by Diavik Diamond Mines Inc. Other active mineral claims and leases in the immediate area are held by various operators. No information or data is available for, or relied upon, from adjacent properties for this report, nor is any relationship with any mineralization on adjacent properties implied.

25.2.5 Mineral Processing and Metallurgical Testing

Macrodiamond Samples

Sample processing protocols were developed specifically for Peregrine's requirements and the use of the Ekati sample plant which recovered diamonds down to a minus 1.0 mm bottom cut off, using primarily 1 mm x 14 mm slotted screens.

Final diamond recovery operations were performed by Howard Coopersmith assisted by Dr. Pell and Jim Crawford of Peregrine. Ekati personnel performed all sample processing and recovery operations until the final product (X-ray diamond recovery machine and grease table products). These products were labelled and securely stored for Peregrine personnel who performed all final concentrate handling and sorting. Ekati personnel were not party to any final recovery operations or results; however, all operations were conducted in view of security cameras monitored by Ekati security personnel.

25.2.6 Mineral Resource Estimates

The three-dimensional model of the DO-27 kimberlite and the tonnage and resource calculations are based on data from 66 core holes (17,300 m) and 46 LDD (35-61 cm) holes totalling 8,800 m and sample results for a cumulative 3,200 dry tonnes of bulk sample material collected from the RC holes. Recovered macrodiamond results at a 1 mm lower cutoff were used to interpolate grades into 25 x 25 x 15 m blocks. Ordinary kriging was used to estimate the block grades. The Vulcan™ mine modelling software system was used to create the resource model.

Detailed analysis of the diamond size distributions led to an adjustment process to account for known differences in the diamond recovery regimes between drill

campaigns. Study of these data showed that the distributions were affected by year-to-year treatment plant recovery differences. AMEC used factors derived from industry standard recovery studies to adjust the distributions before their use in the resource estimation.

AMEC used a base case from the various LG runs to establish a shell within which the resource can be classified. AMEC has used the scrub only, LG case. This case uses the 'high' diamond value from the WWW valuation. Based on project and resource modelling work to date, AMEC considers the kimberlitic material contained within the resource shell to be an Indicated Mineral Resource (Table 25-1). The base elevation of the material lies within adequate proximity of RC drilling where diamond sampling has occurred. These data have been used to estimate and value the resource.

AMEC relies on the WWW to establish valuations for the diamonds. The valuations are applied to the estimated resource model grades models and become the basis for the development of LG resource shells within which resources have been declared.

LDD sampling procedures resulted in a resource model where local variations in block grades may not be fully reflected in the resource block estimates. The Indicated Mineral Resource classification must therefore carry the important caveat that it can only be converted to a Mineral Reserve without the use of cutoffs or mining selectivity assumptions. Any future Mineral Reserve conversion process must treat the Indicated Mineral Resource from this long-range resource model as a bulk-mining scenario with no opportunity for selective mining alternatives.

There has been no Inferred Mineral Resource declared at this time given the results of the resource shell runs.

The tonnage reported in Table 25-1 lies within the resource shell and the modelled KIMB-1 boundary and is reported as undiluted kimberlite only (or partial block tonnes). The tabulation does not include mixed kimberlitic material that occurs between the KIMB-1 and KIMB-P boundary.

Table 25-1: DO-27 Mineral Resources

	Tonnes (1,000,000's)	Carats (1,000,000's)	Grade (cpt)
Indicated Mineral Resource	19.5	18.2	0.94
Notes :			
<ul style="list-style-type: none"> - Effective data is August 7, 2008 - Dr. Ted Eggleston, RM SME and Ken Brisebois, P.Eng are the Qualified Persons for the estimate. - Mineral Resources are stated at an effective 1mm bottom cutoff and are constrained within a conceptual mining shell based on assumptions of a diamond price of US\$72/carats, 100% metallurgical recovery, US\$2.05/t mining costs with an incremental \$0.02 per 10m depth, US\$19.96/t operating costs including on-site scrubbing and an estimate for trucking to, and processing at, an off-site diamond processing facility. 			

AMEC identified a 6.5-8.5 Mt target for further exploration grading in the range of 0.8-1.0 cpt beneath the Indicated Mineral Resource. The potential quantity and grade of the DO-27 this target is conceptual in nature and there has been insufficient exploration to define a mineral resource. It is uncertain whether additional exploration will result in the target being delineated as a mineral resource.

25.3 Reasonable Prospects for Eventual Economic Extraction

AMEC reviewed the technical and economic aspects of a conceptual mine on DO-27 and current diamond prices (WWW, 2014) and concluded that diamond price escalation exceeded cost escalation during the 2007-2014 period and that the 2007 Resource shells generated within Whittle™ were still valid.

The legal path forward for permitting of mines in the Northwest Territories is clearly defined. A number of mines have been successfully permitted in recent years. AMEC believes that there is a reasonable expectation that a mine could be permitted at DO-27.

Mineral and surface tenure appear to be supported by the documents provided to AMEC. Sufficient land for mining and infrastructure are available to support a mine on DO-27. Agreement with local First Nations will be required for surface use, but there is a reasonable expectation that those agreements can be reached. Local water resources are adequate to support mining but will require proper permits from local authorities.

Based on the resource shells generated within Whittle™ and other factors discussed above, AMEC concludes that the DO-27 Resource has reasonable prospects for

eventual economic extraction, but cautions that several factors could affect that conclusion. Those factors include:

- Inability to secure mining permits
- Inability to secure water rights
- Significant decreases in diamond prices
- Significant increases in operating or capital costs

26.0 RECOMMENDATIONS

Peregrine management has decided not to pursue development of DO-27 at this time as it does not meet their current corporate criteria and Peregrine is concentrating their efforts on other projects. AMEC believes that DO-27 has reasonable prospects for eventual economic extraction and with the required mining studies could support future mining. Factors that could enhance the economics of a mining operation at DO-27 include:

- Higher rough diamond prices
- Possible underestimation of the average DO-27 diamond value because the current estimate is based on a parcel of only 2,075 carats
- More favourable Canadian-US currency exchange rates
- A diamond processing arrangement with one of the nearby diamond mines
- Increased revenue potential from downstream cutting and polishing of DO-27 diamonds
- Mining and processing technology advances
- Regional infrastructure developments
- An ultimate run of mine grade greater than the current grade estimated by reverse circulation (RC) drill samples
- Discovery of additional diamond resources

To that end, AMEC recommends that Peregrine:

- Monitor rough diamond prices and periodically have the parcel re-evaluated: \$75,000
- Assess engineering advances that might make a scrub-only operation more attractive or that would reduce capital and operating costs for other scenarios, making them more attractive: \$50,000
- Re-assess geological model, and do additional testwork including microdiamond analysis, on existing DO-27 core: \$250,000
- Re-evaluate exploration data to identify new targets, conduct additional geophysical surveys to identify anomalies, and if warranted, drill exploration holes to test for the presence of kimberlite pipes: \$550,000

Total cost of recommendations: \$925,000



In addition, ensure that mining leases covering the Project are kept in good standing:
\$21,000 per year

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27.2 Abbreviations

cpht	carats per hundred tonnes
cpt	carats per metric tonne
spt	stones per metric tonne
spcm	stones per cubic metre
tonne	metric ton

27.3 Glossary of Terms