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Assessment Report for Alpha-1 Claim Areas (Occurrences: Alpha-1 and Alpha-1North) 2012 Core Drilling Program

For the Period: March - May 2012

A Report Prepared for

De Beers Canada Inc.

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SUMMARY

The 2012 Alpha-1 and Alpha-1N kimberlite drilling program is a continuation of the Victor mine's determination to promote one of the Victor satellite kimberlite pipes into a feasibility stage in order to extend the life of mine. A total of seven (7) HQ-size core holes with a total drilled length of 1,625.35 meters were drilled over 61 days starting with A1-12-017C and culminating with A1-12-020C. The De Beers-owned Zinex A5-2 rig and Hydracore 2000 drill rigs were used for the drilling the Alpha bodies. The total project expenditures is CAD \$1,296,516.63.

The Alpha exploration program was conducted over the spring months, hence, road accessibility was nonexistent. Field support was mainly provided by the HTSC-owned and operated Long Ranger helicopter, and support provided by the A-star helicopter.

A total of 0 LTI (Lost Time to Injury) was recorded, 3 First Aid cases, 0 requiring medical treatment, 0 environmental incident, and 0 incident causing damage to equipment.

The objective of the 2012 spring core drilling program on Alpha was threefold (*Scope Document of McKinlay and Januszczak, 2011*):

- 1. To determine a global grade estimate for Alpha-1 and Alpha-1N kimberlites, and, depending on results, motivate for a Deposit Assessment program in 2013.
- 2. To drill 3 holes at Alpha-1 and 3 holes at Alpha-1N to recover 1,000kg of kimberlite from each body.
- 3. To extend the geological model to a depth of 250m to gain a preliminary understanding of the geological complexity and sample for microdiamonds.

KEYWORDS

Assessment Report, Attawapiskat, Ontario, Alpha-1, Alpha-1N, Kimberlite, Core Drilling, Geology, Drillhole Logs

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1.0 INTRODUCTION

During the months of March to May 2012, De Beers Canada Inc. completed seven (7) core holes in the Alpha-1 and Alpha-1 North kimberlite bodies which are approximately 18.5 kilometers south-southeast of the Victor Mine. The total meter drilled is 1623.35 meters. The purpose of the drilling is to provide additional information on the internal geology of the kimberlites and to provide sample material for microdiamond sampling.

1.1 Location and Access

The Alpha-1 and Alpha-1N kimberlite pipes have surface areas of approximately 6.5 hectares and 3.4 hectares respectively, and are part of the Attawapiskat Kimberlite Province located 90 kilometers west of the community of Attawapiskat. The Alpha-1 and Alpha-1N kimberlites are situated approximately 18.5 km south-southeast of the Victor Mine (Figure 1) and are located within claim CLM 443 (Figure 2).

Figure 1 and 2. Alpha-1 and Alpha-1N Kimberlite Work Site Locations relative to the Victor Mine Site and Location Map of De Beers Claims



Access to the Victor mine is via Timmins, Ontario using a chartered commercial air flight provided by Air Creebec. From the Victor camp to the Alpha-1/Alpha-1N drill site during the summer months, access is by helicopter for both equipment and personnel.

For the main transportation of personnel, equipment, and daily sling loads of fuel and core boxes, the Long Ranger helicopter stationed at Victor was used. For the mobilization and demobilization to the Alpha-1 site, an A-Star AS350-B2 helicopter was contracted through Helicopter Transport Services Canada (HTSC) to help with the heavier loads and to speed up the process. Some heavier drill components such as the

engine, hydraulic tank and instrument panel could only be slung by the A-Star. The Long Ranger could have slung these components but they would have had to have been disassembled or further broken down which would have increased the chance of injury or environmental spills.

1.2 Dispositions and Ownership

As shown in Table 1, the Alpha-1 kimberlite is linked by several mineral permits to the main array of north-south oriented kimberlites which define the Attawapiskat kimberlite cluster several kilometers further to the west (Avery, 2010).

As seen in Figure 2, Alpha-1 and Alpha-1N are enclosed by a single mineral lease (Claim 443). The relative size and annual assessment requirements of the Alpha claims are further summarized in Table 1.

Claim Number	Claim Date	Anniversary Date	Claim Size (ha)	Assessment Commitments	Occurrence
P 1238602	28-Sep-00	28-Sep-12	256	\$6,400.00	ALPHA-1
P 1238603	28-Sep-00	28-Sep-12	256	\$6,400.00	ALPHA-1
P 1240927	28-Sep-00	28-Sep-13	144	\$3,600.00	ALPHA-1
P 1240928	28-Sep-00	28-Sep-13	144	\$3,600.00	ALPHA-1
P 1240929	28-Sep-00	28-Sep-12	256	\$6,400.00	ALPHA-1
P 1240930	28-Sep-00	28-Sep-12	256	\$6,400.00	ALPHA-1
CLM 443	1-Dec-03	30-Nov-24	162.322		ALPHA-1
P 1199788	19-Mar-03	19-Mar-14	96	\$2,400.00	X-RAY-01
P 1199789	19-Mar-03	19-Mar-13	256	\$6,400.00	X-RAY-01
CLM 442	1-Dec-03	30-Nov-24	24.769		X-RAY
P 1241259	1-Mar-00	1-Mar-14	64	\$1,600.00	ZULU
P 1199741	26-May-03	26-May-14	32	\$800.00	ZULU
P 1199787	19-Mar-03	19-Mar-13	256	\$6,400.00	ZULU
CLM 441	1-Dec-03	30-Nov-24	31.808		ZULU

Table 1. Alpha-1 Area List of Dispositions/Claims

Note: For the purpose of credit distribution, adjoining/nearby claims can be grouped with Alpha-1 as a contiguous block.

All of the claims are 100% owned by De Beers Canada Inc.

1.3 Topography and Drainage

The Victor project area lies within the Hudson Bay Lowlands and as in most parts of these lowlands, the countryside is a typically monotonously low, swampy plain that is poorly drained with numerous shallow lakes and widespread bogs (Avery, 2010).

It straddles the Attawapiskat River whose drainage basin comprises an area of about 49,000 km² which extends for 670 km in a westerly direction from James Bay In its lowermost 400 km, the channel of the Attawapiskat drops only 183 m at a uniform rate of

0.4-0.6 m/km (Cumming, 1968). From the junction with the Muketei River, the Attawapiskat follows a slightly south of east course for 240 km to James Bay where the river angles across reefal limestones of the Attawapiskat Formation.

The Alpha 1 and Alpha 1N work area (Figure 3) is situated within a tributary system of the Lawashi watershed and is defined by a gently sloping topography which drains southwards into the Lawashi River, ultimately ending at James Bay. The terrain is poorly drained due to the very low permeability of the marine silts and clays that have allowed the creation of aquifers at depth within the limestone sediments. Therefore, there is a separation of the surface water and the ground water aquifer at depth.



Figure 3. Alpha 2012 Drillhole Locations

At the Alpha-1 sites, there were two water sources: surficial ponds and from drill-holes where the casing was left in the hole.

1.4 Climate and Vegetation

The James Bay lowlands have a subarctic to humid continental climate with long, cold winters and short, warm summers with low annual precipitation (Rameseder, 2007). Climate data presented here was obtained from the Victor Mine automated weather station: <u>http://dbcm-dca-it-201/victor/victor/weather.aspx</u> and <u>\\dbcm-dca-fs-202\Group\Share\WeatherData</u>

	March 2012	April 2012	May 2012
Maximum Daily Temperature (°C)	8.0	7.0	12.8
Minimum Daily Temperature (°C)	-28.5	-12.3	-1.0
Average Daily Temperature (°C)	-9.0	-2.8	5.3
Average Daily Relative Humidity (%)	77.7	70.1	80.2
Average Daily Precipitation (mm)	0.6	0.0	2.8
Total Precipitation (mm)	17.5	1.0	85.3

Table 2. Climate Data Record for Victor Mine during the duration of the Program

Weather this spring had an effect on the drilling activities on several occasions during the program. Cold temperatures had the largest impact on activities, causing water lines to freeze, surface ponds to freeze and forcing the helicopter into standby due to icing or foggy conditions. In all, the drills were delayed for a total of 16.0 hours working to thaw water lines. Low visibility, fog, icing and wind were responsible for some delays to drill operation due to forcing the helicopter on standby. The drills were delayed for a total of 24.5 hours due to weather forcing the helicopter to be grounded. In the past, lightning storms have been an issue forcing the drills to go on standby, there were no such storms during the 2012 Alpha drilling program.

The Alpha-1 and Alpha-1N kimberlite pipes lie within the Lawashi River watershed which comprises part of the James Bay Lowlands. The James Bay Lowlands are a vast expanse of flat, muskeg terrain, developed on marine clays of the former Tyrell Sea. The majority of the land is dominated by a mosaic of fens and bogs (or muskeg), characterized by perennially wet conditions and by scattered, stunted tree cover of black spruce and tamarack. Well-developed forest communities are confined to narrow ribbons of land which border the region's rivers and creeks (Winzar, 2001).

1.5 Planning, Permits and Environmental Management

Permits and notices to drill six holes were obtained prior to drilling and were in place during the drilling operation. Permits and notices were in place in order to work extended hours, notice of project and notices indicating mining activities. No permit to take water and no permit to discharge water was required for this program due to each drill using less than 50,000 liters of water per day.

Water intake was limited to 50,000 liters per day per water source and therefore each drill rig had to draw upon separate water sources. Each core drill had a calibrated mechanical water flow meter installed on the water intake line and the drillers recorded and reported water intake quantities at the end of every shift.

For this program the drillers were very diligent in not letting water overflow the water tank onto the ground. Unused, clean water was returned back to the original source (e.g. pond). Water discharge from the drill rig during operational activities was contained within the drill pad by a series containment booms (noodles). In the event of contamination, all spills were promptly cleaned up with absorbent mats and reported.

As part of De Beers' ISO 14001 Environmental Management System (EMS) all work programs are required to adhere to all regulatory Acts, legislation and guidelines as they apply to waste management, storage and disposal.

Mandatory training for all workers on site (both De Beers' personnel and external contractors) consists of Environmental Awareness Training, Spill Awareness, Petroleum Products Handling, Emergency Response, Helicopter Safety, Camp Awareness and Construction Awareness training. Other legislated courses such as Transportation of Dangerous Good (TDG), Workplace Hazardous Material Information System (WHMIS), Propane Handling and general First Aid are also provided for employees who require additional training in their work.

In addition, De Beers maintains an Emergency Response Plan (ERP) for its exploration activities which outline specific written guidelines for leak and spill response procedures.

All drilling rig waste (waste oil, rig wash, grease, oil filters) was collected in containers and transported off-site to approve disposal sites at the Victor Mine.

2.0 GEOLOGY

2.1 Previous Mapping

The Attawapiskat kimberlite is a cluster of 22 kimberlites discovered since the late 1980's. Eighteen (18) of which fall under the De Beers held claims and 4 lie within the KWG Resources held claims.

All 18 kimberlites held by De Beers are diamondiferous, but little exploration work has been carried out on most, especially due to their small surface areas. The Attawapiskat kimberlites appear to cluster in a north-northwest elongated trend approaching 36 kilometers in length.

The Victor kimberlite, currently under production and with reserves expected to have a mine life until the year 2018, has the largest surface area within the cluster at approximately 15 hectares.

Kimberlites discovered within the De Beers claims are: Alpha-1, Alpha-1 North, Bravo-1, Charlie-1, Delta-1, Golf-1, Golf Extension, India-1, Logan, Tango, Tango Extension, Uniform, Victor, Whiskey, X-Ray, X-Ray-1, Yankee and Zulu.

The 4 remaining kimberlites fall under the KWG Resources. tenements and are: Good Friday, MacFayden 1, MacFayden 2, and MacFayden 2 south. Additional kimberlite bodies have been discovered by Navigator Resources on claims contiguous to De Beers (AT-56), but have *b*een relinquished due to very small surface areas.



Figure 4. De Beers Claim Holdings and Locations of 16 Kimberlites discovered in the Attawapiskat Area

2.2 Regional Geology and Tectonic Setting

The Attawapiskat Kimberlite Province lies within the Western Superior Structural Province of the Canadian Shield. The Superior Province forms the core of the North American continent and is bound on all sides by cratons of Paleoproterozoic and Mesoproterozoic ages (Percival, Sanborn-Barrie, Stott, Helmsteadt, & Skulski, 2005).

Current investigations indicate that the Superior Province is made up of a collage of tiny continental fragments of Mesoarchean age and Neoarchean oceanic plates with a complex history of aggregation between 2.72 and 2.68 Ga (Percival, Bleeker, Cook, Rivers, Ross, & Van Staal, 2004). The Superior Province is one of several Provinces that accreted and stabilized during the Wilson Cycle of "ocean closure" during the late Archean. These Archean Provinces are bound along their margins by structural "orogenic belts" of varying ages and distinct geological and structural characteristics (Card & Ciesielski, 1986).

The Superior Province is further divided into linearly fault-bounded sub-provinces (Figure 5) each with their own distinct geological characteristics, age and metamorphic conditions. These sub-provinces host a variety of viable economic deposits in gold, diamonds, potash, copper, zinc, coal and other deposits. Most of these sub-provinces

are contiguous to the Moose River Basin comprising Paleozoic and Mesozoic sedimentary cover, predominantly limestone and dolostone that have been intruded by kimberlites.



Figure 5. Regional Geological Setting (McCrea, 2003)

The kimberlite bodies are located on the southeast flank of the Cape Henrietta Maria arch that roughly divides the Hudson Bay platform rocks into the Hudson Bay basin to the northwest and the Moose River basin to the southeast (Figure 5). The arch has affected the distribution of ancient sediments and the trend of reefs on its flank. Current investigations indicate that in Paleozoic times the Hudson and Moose River systems were connected with those of the great lakes area to the south.

The sediment rocks range in age from Ordovician at their western limit to Jurassic in the center of the basin. The basin consists predominantly of limestone and dolostone with intercalations of shale, siltstone and sandstone. The sedimentary sequence of the area of interest indicates that the surface is underlain by four sedimentary sequences of Lower Silurian Formations overlying an Upper Ordovician sequence, which rests on

basement rocks. The sedimentary rock package of the Attawapiskat area is approximately 250 m thick (Winzar, 2001). The uppermost limestone sediments are Silurian reef and bioherm deposits of the Attawapiskat Formation that have been severely faulted and uplifted in the immediate area of the Attawapiskat kimberlites.

The major tectonic structure in proximity to the study area is the Winisk River Fault system which is clearly visible on the Canadian Geological Survey map of regional airborne magnetic data. Minor faults striking northwest-southeast and northeast-southwest transect the Attawapiskat area. Two sets of dykes are also visible on the magnetic data; dykes that strike northwest to southeast and the Matchewan/Hearst dykes that trend north-south (Winzar, 2001) (Kong, 1990).



Figure 6. Major Subdivisions of the Superior Structural Province in Ontario (Card & Ciesielski, 1986).



Figure 7. Stratigraphic Sequence of Sediments surrounding the Attawapiskat Kimberlites (McCrae, 2003)

The competent Precambrian bedrock is covered by frost heaved brecciated carbonate units overlain by thin Pleistocene till sheets and finally by thin marine and coastal Holocene deposits (Figure 7). Till and coastal Holocene deposits overlying the Attawapiskat kimberlites vary in thickness from 0 to 60 m. Figure 7. Stratigraphic sequence of sediments surrounding the Attawapiskat kimberlites (McCrae, 2003)

3.0 ECONOMIC GEOLOGY

3.1 Previous Investigations Undertaken in the Alpha-1 and Alpha-1N Kimberlite Bodies

From 1983 to 1988, sediment sampling during the summers of 1983-1988 outlined a widespread distribution of kimberlite indicator minerals, extending from Lake Superior to James Bay (Skublak, W., 1990).

In 1987-1998, regional anomalies were picked by Don Boucher (Boucher, 1987) and then modeled by Wolf Skublak (Kong, 1990). In the summer of 1987, kimberlite boulders were discovered on the Attawapiskat River (Kong, 1990). An airborne magnetic survey was completed, centered on the Attawapiskat River - survey block comprised 12 800 line kilometers; flight lines were orientated N-S and spaced at 250m intervals. Survey included both total field and vertical gradient measurements. Result of survey: total of 18 anomalies were identified in the field and upon examination of the contour maps and analogue profiles in South Africa, 15 additional targets were selected for follow-up (Skublak, 1990). A program of staking, line cutting and ground magnetometry (N-S tie lines; 100 m line spacing with stations every 25m) was executed over preferred geophysical anomalies, including "Grid A1" (Facey-Crowther, R., 1988). The 1st ground magnetic survey was carried out during the winter of 1987-1988 to further investigate the airborne anomalies. The survey parameters were identical for all anomalies; readings of the total magnetic field were taken every 25m along N-S lines at 100m interval (Skublak, 1990). A 2nd ground magnetic survey was carried out in 1988 on 100m spaced NW-SE lines with 25m spaced stations. The anomalies were then tested by core drilling and 16 kimberlite pipes were discovered, including Alpha-1 (Skublak, 1990).

In 1988-1989, E. Kostlin interpreted the A1 anomaly to consist of 2 separate pipes and the respective sizes were estimated to be 8 and 3.5 hectares, based on the reinterpretation of the James Bay Lowlands airborne magnetic gradiometer survey. Existence of at least 2 pipes is evident from the airborne surveys. One core hole (BQ) was drilled into the magnetic anomaly; drill type - Longyear Super 38; drilling started from 3/28/1988 to 3/31/1988; a total of 203.3m of core was drilled. One of the holes drilled (A-1-88) penetrated into syenite (K.S. Viljoen pers. comm.). The core was logged on site and samples were sent to South Africa for microdiamond, HMA and IMC analysis and petrography (Kong, 1990): A1-1-88: 2 MiDA, 2 HMA, and 2 IMC samples (Scott-Smith, 1995); PET 19 samples collected. Two samples (27 and 28) from Alpha are said to be identical and represent a hypabyssal facies uniformly textured monticellite kimberlite (Viljoen, 1988 -Brief preliminary petrography of Attawapiskat fine diamond samples). Petrography: PET-19 samples collected. The Attawapiskat-04 body contains a uniformly textured, hypabyssal facies, macrocrystic, opaque-mineral-rich, monticellitecalcite, kimberlite of Group 1 type (Viljoen, 1988 - KPU report number PI/88-087, CAN880072). Two core samples (302/628/K005/27 and 28) reported the following: for HMA: both samples have ilmenite as the most abundant mineral, garnet and spinel abundance very similar; clinopyroxene more abundant in 28 than 27; for Mineral chemistry: low interest due to the low percentages of significant grains i.e. sub-calcic garnets, S1 chromite, and high Cr2O3 clinopyroxenes (Ramos, 1989). FDA (KR88/454, GD88/554, CAN880072): no diamonds +53µm in size recovered from 20kg of 302/628/K5/27; 2 fine diamonds recovered from 19.5kg of 302/628/K5/28 which is rich in nodules and megacrysts. Ground electromagnetic surveys, vertical soundings, and borehole resistivity logging surveys were carried out to measure electrical characteristic of kimberlite. The result showed large anomalous conductivity highs mapped surrounding A-1 and the highs were said to be structurally related to kimberlite bodies. It was concluded that conductivity mapping is not a viable option to map kimberlite bodies within the area (Keith, 1989).

In 1990, Alpha body is described as hypabyssal facies, with macrocrystic, segregationary and globular segregationary textures. It is said to belong to monticellite Group 1 kimberlites. The body was said to be rich in indicator minerals, predominantly ilmenite (Kong, J., 1990). Summary of FDA results for A1: recovered 2 stones from

39.5kg sample; stone/kg is 0.05; number of carats recovered (10-8) is 460: carats/kg (10-8) is 11.6; average carats/stone (10-8) is 230: grade estimate by Oosterveld is <10cpht while by Kleinjan is 0-2cpht (Kong, 1990). The size of body is 7.0 ha; the dimension 350x260m based on ground magnetic anomaly (Skublak, 1990).

In 1994, the garnet population is determined to be dominated by TiO2 poor peridotitic garnets (85%). Smaller quantities of eclogitic (9%) and megacrystic (4%) garnets were present. Of the 113 garnets for trace element analysis, only 3 (<3%) are sub-calcic. TiO2 contents are slightly elevated (~0.4 wt%). Ni-thermometry: max Ni-concentration is 93.2ppm corresponding to a calculated temperature of 1278.8°C. Minimum Ni concentration is 11.2ppm with TNi2 of 682.6°C. An O value of 39.39 assigns moderate interest rating to Alpha-1 kimberlite. Incompatible Element Geochemistry: garnets have not been notably depleted in terms of trace elements (garnets contain >5ppm Y & >10ppm Zr); median Zr for garnets within diamond window relatively high (Zr=46.8ppm); no positive relationships between different trace elements is apparent; absence of such correlations argue against metasomatic enrichment events (Smit, 1994).

In 1995-1996, Re-logging of 1988 & 1989 cores (3.5cm) was carried out by BH Scott Smith (A-1-88 from 5.5-203.3m), very little core missing; estimated size of body is 6.8 hectares and 350mx260m dimension; characterized as a crater facies kimberlite. Petrographic interest rating is moderate. Comments on further microdiamond and IMC treatment: took 6 new samples for MiDA, no further IMC data required. Comments on further drilling: decision to drill or walk away should be made on results of new fine diamond and bulk samples. Petrography: petrographic changes notes from 148 and 207 feet. Matrix supported olivines and mica, fresh olivine are present, ilmenite>chrome, diopside>garnet, mica common. There is often fabric in mica, definite globule texture with interstitial serpentine and carbonate at 27 1/4 feet. Fresh hypabyssal monticellite+spinel kimberlite at >106 feet, presumably hypabyssal. More spinel below 257 feet. Suggested the following samples for analysis: A1-1-88: 6 MiDA samples; 126kg (normal to low priority). 4 MiDA core sample submitted weighing 80kg recovered 2 diamonds with total carats of 0.0001160 (KAL95/141, Minrep 001/96, CAN950012, EP Lucas). 2 MiDA core sample submitted weighing 40kg no recovered diamond. (KAL96/076, Minrep 088/96, CAN950013, EP Lucas).

In 1998-1999, a ground magnetic survey was carried out by Monopros. Alpha-1 grid was 800mx800m with lines oriented N-S. A total of twenty-three 5-line kilometers were covered (both for A-1 and A-1 North). Report on the ground magnetic survey conducted in 1998 indicates that Alpha-1 has round shape, with large high intensity southern section, peak 60100nT, and lower intensity northern arm, 59500nT. The two are separated by a round magnetic low, 59690nT, in the north-central part of the body. From the size and shape of the magnetic anomaly, the surface area was estimated to be 7.14 hectares (Acheson, 1999).

In 2000-2001, mini-bulk sampling was planned for the Attawapiskat kimberlites (including A1) to gain better grade estimates. The planning was based on input from Minred following a review of available diamond recovery data and comparison with the Victor diamond size frequency distribution; 9 holes were planned to provide 4219 kg of kimberlite per hectare of this body (Winzar, 2000). Nine (9) holes were drilled using De Beers RC 100 rig mounted on GT1000 tracked carrier; 501.6m kimberlite out of a total of 589.8m were drilled from 3/7/2001 to 3/16/2001. The approximate size of body is 7.5 hectares based on geophysical signature. The theoretical mass drilled was 18,610kg

and recovered wet mass including limestone is 24,520kg. The low grade obtained from the sampling of Alpha-1 has downgraded the economic potential of the kimberlite body (Winzar, 2001). 25 MADA samples were submitted (DGB042-66) and (DGB126-134 & DGB045-01- audit samples) CAN010143 & CAN010144. Fourteen (14) stones were recovered with total carats of 0.335. The sample grade was 1.80 CPHT. Stones per carat is 41.79 and stones per ton is 0.75 (Winzar, 2001). Review of new garnet Ni-thermometry and trace element: The 322 garnets selected were Ti-poor Iherzolitic grains and the Pmin for entire population is 42.6 kb. Ni-thermometry: The pressure-temperature data is 42 mW/m2 geotherm and approximately 3.1% of garnets analysed were sampled within the diamond window. Trace element data showed a moderately depleted source signature for the Alpha garnets, with clinopyroxene re-fertilisation indicated (KJ Webb, 2001).

In 2002, the Callsign survey (a helicopter magnetic/electromagnetic survey) was carried out to obtain electromagnetic information and signature. Seven (7) single lines were flown over Alpha-1 with flight line spacing at 50m in a N-S direction. The tie line spacing is 500m in an E-W direction. Result: The profile indicates that similarly to the other kimberlite grids, all kimberlites (including Alpha-1) reacts poorly to frequency domain EM and most of the response was due to the magnetic permeability effect (Hodgkinson 2002).

In 2004, an airborne fixed-wing magnetic survey was flown with 250m line spacing. Data was gridded for Attawapiskat at various line spacing intervals in order to estimate the change in kimberlite direction. All Attawapiskat kimberlites (including Alpha-1) have positive magnetic responses in a generally quiet background; estimated size of body is 7.5 hectares (Chung, 2004).

3.2 Geology of the Alpha-1 and Alpha-1N Kimberlite Bodies

The Alpha-1 and Alpha-1N kimberlite pipes were emplaced into Paleozoic sedimentary rocks (Ordovician to Silurian), commonly through the limestone and dolostone rocks unconformably overlying the Precambrian basement rocks of the Superior Province.

The Alpha-1 and Alpha-1N kimberlite pipes have a surface area of approximately 6.5 ha and 3.4 ha respectively (Zhu, 2010a; 2010b). Alpha-1 is oval-shaped having a slight N-S trend while Alpha-1N is oblong shaped with a NE-SW trend.

Figure 8 below is a magnetic surface expression image of the Alpha-1 and Alpha-1N kimberlite, while the image in Figure 9 illustrates the gravity anomaly map at the Alpha kimberlite bodies.

Figure 8. Alpha-1 and Alpha-1N Kimberlites MAG-High Surface Expression with Core hole Locations (left), and The First Vertical Derivative (VD1) of the Magnetic Field with Core Hole Locations (right)



Figure 9. Gravity Map of Alpha-1 and Alpha-1N Kimberlites with Core Hole Locations



4.0 INVESTIGATIONS

4.1 Core Drilling

Drilling at the Alpha-1 and Alpha-1N kimberlite pipes was conducted with the aid of two drill rigs, namely; the Zinex A5-2 and the Hydracore 2000 drill rigs, both owned by De Beers Canada Exploration.

Both rigs were operated and maintained by Foraco Canada Ltd. who were contracted to complete delineation drilling on Alpha-1 and Alpha-1N over the spring of 2012.

Figure 10. The Hydracore 2000 (left), showing the full cage guard, and the Zinex A5 (right) showing a common set-up of rig equipment



Transportation of the crews to and from the Alpha-1 job site and movement of both drills between drill collars was supported by a Bell 206 Long Ranger L4 helicopter due to road inaccessibility in the summer months. An A-star AS350-B2 owned and operated by Helicopter Transport Services Canada Inc. (HTSC) was utilized to sling heavier loads of the drill equipment during drill movement between collars, mobilization and demobilization of both drills. The A-star had a maximum lift capacity of up to 1,800 lbs. per load. The Zinex A5-2 was long-lined to the Alpha-1N kimberlite pipe from the Exploration laydown site at Victor Mine. Mobilization of the A5-2 drill rig was completed by March 28, 2012 and casing began on March 31. The Hydracore 2000 was long-lined to the Alpha-1N kimberlite pipe from the Exploration laydown area at Victor Mine. Mobilization of the Hydracore 2000 drill rig was completed by April 1, and casing began on April 2.

The Zinex A5-2 rig completed drilling on May 5, 2012 and finished demobilization to the Exploration laydown on May 6, 2012. The Hydracore 2000 rig finished drilling on April 22, 2012 and completed demobilization to the Exploration laydown on April 27, 2012.

Out of the six core holes planned, seven holes were drilled. Five were drilled by the Zinex A5-2 drill rig for a total length of 1122.35 meters while the Hydracore 2000 drilled the remaining 2 core holes for a total length of 501 meters. The Hydracore 2000 was used to drill the following holes: A1-12-018C, A1-12-020C while the rest of the holes were drilled by the Zinex A5-2 drill rig (A1-012-017C, A1-12-023C, A1-12-019C, A1-12-021C, A1-12-022C). Drill hole A1-12-017C was finished early due to loss of water

supply, the same collar location was used for A1-12-023C with a near vertical dip angle (-82°) to achieve the planned hole depth of 250 meters.

The seven (7) holes drilled in Alpha-1N and Alpha-1 Kimberlites are listed in the table below and plotted in Figure 11.

Alpha-1 North Drillholes	Alpha-1 Drillholes
A1-12-017C	A1-12-020C
A1-12-018C	A1-12-021C
A1-12-019C	A1-12-022C
A1-12-023C	

Figure 11. IKONOS Plan View of the Alpha-1N and Alpha-1 Kimberlite Pipes displayed with VicREP 2012 Core Hole Locations and Traces



Upon the completion of drilling in each hole, the surface casing was capped and sealed. All holes passed the environmental hole closure inspection.

4.2 Core Logging

Core logging activities completed at the Exploration site involves the identification and description of the various lithologies encountered in the drillholes (grain size, sorting,

bed thickness, cognate olivine size, and indicator mineral content) as well as estimates of the frequency and type of xenoliths (mudstone, limestone, basement lithologies) contained within the kimberlite. A number of geotechnical parameters were also measured on the drill core including core recovery, rock quality designation, magnetic susceptibility, and intact rock strength. Density measurement was done in Sudbury. A digital photographic record of the core was also captured in order to aid additional geotechnical studies if required at a later date.

On the completion of logging at the Exploration camp at Victor mine, the boxed drill core was stacked and assembled on pallets and then shipped to De Beers' Sudbury warehouse for detailed geological logging, sampling, and storage.

5.0 RESULTS

5.1 Core Drilling

Drill-hole collars actual surveyed coordinates was taken using GPS Trimble ProXRT owned and operated by De Beers' Exploration. Drillhole collars were marked by meter long pickets marking details such as collar designation, azimuth, dip and end of hole (EOH) depth.

Drillhole	NAD	83 Zone 17		Azi Din Start End		FOH (m)		
Drinnoic	Northing	Easting	Elev.		Dip	Date	Date	Lon (iii)
A1-12-017C	5842406.81	312573.1	84.54	0	-90	03-28	04-05	140.00
A1-12-018C	5842341.9	312534.5	84.87	0	-90	03-28	04-13	252.00
A1-12-019C	5842135.05	312386.73	84.9	0	-90	04-10	04-17	260.00
A1-12-020C	5841728.27	312441.16	85.75	0	-90	04-13	04-24	249.00
A1-12-021C	5841728.7	312359.54	85.08	0	-90	04-24	05-04	241.35
A1-12-022C	5841664.89	312400.97	85.32	0	-90	04-17	04-28	239.00
A1-12-023C	5842406.81	312573.1	84.54	152	-82	04-05	04-10	242.00
Total Meters Drilled					1623.35			

Table 3. Drillhole Summary, Alpha-1 and Alpha-1N Kimberlite (March to May 2012)

A downhole survey was obtained for the single inclined hole (A1-12-023C) using a Reflex EZ-Shot downhole camera which measures six downhole parameters: uncorrected azimuth, drillhole inclination, magnetic tool face angle, gravity roll angle, magnetic field strength, and temperature. Readings were taken at 50m intervals along the entire length of the hole.

5.2 Core Logging

Geological core logs summarizing the different units encountered for each of the drillholes completed during the reporting period are shown in Appendix 1 while the geological section, geotechnical logs, result of rock strength test and density tests as well as magnetic susceptibility readings conducted on all holes are plotted in strip logs found in Appendix 2.

Table 4 shows the kimberlite thickness intersected during the 2012 program.

	Casing Kimberlite Intersection			Kimberlite	
Drillhole ID	Depth (m)	Top (m)	Bottom (m)	Thickness (m)	EOH (m)
A1-12-017C	12.00	11.25	127.60	116.34	140.00
A1-12-018C	9.00	10.85	252.00	241.15	252.00
A1-12-019C	13.50	10.61	220.70	210.09	260.00
A1-12-020C	15.00	4.94	249.00	244.06	249.00
A1-12-021C	19.50	10.46	241.35	230.89	241.35
A1-12-022C	28.50	11.40	239.00	196.67	239.00
A1-12-023C	13.50	12.27	242.00	179.51	242.00
			Total Meters	1418.71	1623.35

 Table 4. Results of Drilling, Alpha-1 and Alpha-1N Kimberlite Bodies

The detailed geological core logging of the Alpha holes as logged by the Kimberlite Petrology Unit of the company characterized the bodies as Volcaniclastic Kimberlite (VK) and further classified into different units/facies as described below:

Unit Code	Unit Description
A1VK1	Clast supported, closely packed, well sorted volcaniclastic unit. Juvenile pyroclasts (JP) present. Olivine: 1.8 cm - 1 mm dominant size 1 mm (10 - 15 modal %). Megacrysts: Olivine and CPX up to 7 cm. Indicator Minerals: Garnet mauve in color, CPX and ilmenite all present. One 20 X 2 window (Gar: 1 CPX: 2 Ilm: 5). Country Rock: Total up to 5 %. Limestone largest 3 cm and average 1 cm. Granite 5 cm to 1 cm average 1 cm. A1VK1B: 15-50% Dilution A1VK1BB: 50-75% Dilution
A1VK3	Clast supported, closely packed, well sorted volcaniclastic unit. Juvenile

	pyroclasts (JP) present both magmatic and armored.
	Olivine ranges in size from 1.4 cm to 1 mm. 5 - 20 modal % (really variable)
	Vallable). Megaenyste: CBX megaenyste
	Indicator Minorals: Carnot manyo in color, cpy and ilmonite all present
	One 20 x 2 window (Gar:0 CPX: 5 llm: 8)
	Country Rock: Up to 7 % Limestone and Granite up to 5 cm and the
	average size is 1 cm
	A1VK3B: 15-50% Dilution
	A1VK3BB: 50-75% Dilution
	A1VK3BBB: 75-98% Dilution
	Clast supported, well packed, well sorted volcaniclastic unit. Juvenile
	pyroclast (JP) present.
	Olivine: 1 cm - 1 mm dominant 1 mm. 15 modal %
	Indicator Minerals: Garnet mauve in color, CPX and ilmentite all present.
A1\/K4	One 20 x 2 window (Gar: 0 CPX: 2 IIM: 4)
,	Country Rock: Limestone and granite up to ~ 5 %. Dominant size is 1 cm
	largest is ~ 5 cm.
	ATVK4B: 15-50% Dilution
	ATVK4DD. 50-75% Dilution
	Clast supported loosely packed poorly sorted luvenile pyroclasts (IP)
	nresent
	Olivine: present up to 10 modal %
	Indicator Minerals: Garnet mauve and CPX both extremely rare. One 20 x
A1VK5	2 window (Gar:0 CPX:0 IIM: 1)
	Country Rock: ~ 70 % limestone and Granite clasts.
	A1VK5B: 15-50% Dilution
	A1VK5BB: 50-75% Dilution
	A1VK5BBB: 75-98% Dilution

Source: C.Mann (August 2012), Kimberlite Petrology Unit – De Beers Canada

Table 6. Alpha-1 North (A1N) Volcaniclastic Kimberlite Unit Descriptions

Unit Code	Unit Description	
A1NVK1	Clast supported, closely packed, well sorted volcaniclastic unit. JP's present Olivine ranges in size from 2 mm - 1 mm (dominant 1 mm) ~ 45 modal % MX: not observed Indicators: Garnet mauve in color, cpx and ilmenite present. One 20 X 2 cm v Ilm: 38) CRX: Approx 3% LMST and MDST up to 3 cm with a dominant size of 2 cm. Less Phlogopite than AIVK2	vindow = (Gar
A1NVK2	Clast supported, closely packed, well sorted volcaniclastic unit. JP's present. Olivine ranges in size from 2 cm - 1 mm (dominant 1 mm) ~ 45-50 modal%. MX: peridotites and eclogites as well as CPX, GAR and ILM megacrysts. Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20X2 cm window = (Gar:1 CPX: 0 ILM: 20). CRX: Approx. 5% limestone up to 7 cm in size with a dominant size of 2 cm and granite discrete clasts up to 3 cm. MDST observed towards the base. Phlogopite present	
A1NVK3	Clast supported, closely packed, mod-well sorted. Cored JP's and accretionary lapilli observed. Olivine ranges in size from 1cm - 1mm (dominant 2 mm)~ 1 - 2 modal% macros. MX: not observed Indicators: Garnet mauve to orange in color, cpx and ilmenite observed. One	

	20 X 2 cm window= (Gar: 1 CPX: 3 II M: 5)
	CRX: I MST splintery in shape with a dominant size of 1cm
A1NVK4	Clast supported, mod well sorted, mod well packed volcaniclastic unit. JP's present. Olivine: ranges in size from 1 m2 mm - 2 mm, dominant 2 mm ~ 10 - 15 % Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20 x 2 window = (Gar:3 CPX:1 ILM:23 CRX: Approx. 5 % limestone largest of 5 cm dominant size 2 cm.
A1NVK5	Clast supported, poorly sorted, poorly packed volcaniclastic unit. JP's present. Olivine ranges in size from 5 mm - 1 mm (dominant 1 mm) 25 - 30 modal % Indicators: Garnet mauve in color, cpx and ilm all present. One 20 x 2 window = (Gar: 2 CPX: 5 ILM: 23) CRX: Approx 7 % limestone largest 3.5 cm dominant size 2 cm and granite up to 5 cm dominant size 1 cm. Carbonatite present.
CRB	Limestone breccia with 1 - 3 % kimberlite in the matrix.
VKA	Clast supported, well sorted, closely packed. Olivine ranges in size from 1 cm - 1 mm (dominant 1 mm) ~ 20 % macros. Indicators: One 20 x 2 cm window = (GAR: 0 CPX: 4 ILM 7) MX: CPX megacrysts observed (~2 cm) Carbonatite observed.
VKC	Clast supported, mod sorted, moderately packed. JP's present Olivine ranges in size from 5 mm - 2 mm (dominant 1 mm) Indicators: One 20 x 2 cm window (Gar: 0 CPX: 1 ILM: 2) MX: observed but expremely altered HK present within unit.

Source: C.Mann (September 2012), Kimberlite Petrology Unit - De Beers Canada

6.0 CONCLUSIONS

Of the three objectives of the 2012 Alpha drilling program, the core drilling has met the planned drilling of 6 holes and the recovery of 1000 kilograms of kimberlite samples from the Alpha-1 and Alpha-1N bodies necessary for valuation.

To date, microdiamond processing and analysis of the samples from the Alpha kimberlite bodies has not yet been conducted by De Beers' laboratory in South Africa. Hence, no information is available yet for the global grade estimate of Alpha-1 and Alpha-1N kimberlite. The valuation of the kimberlite pipe will determine whether future work is warranted in order to augment the reserves for the currently producing Victor mine expected to run out of profitable resources by 2018.

7.0 PERSONNEL

A number of De Beers Exploration managers and field supervisors were present on site to oversee the execution of the spring core drilling program at Alpha-1. Contract geologists hired by De Beers Canada Exploration conducted core logging, laboratory analyses, sample shipment and data entry.

The program also utilized various personnel from various departments of the Victor mine for logistical assistance and support (Environment, Protective Services, SHE, Mobile Equipment, Mine Operations, Technical Services, Site Services, Maintenance, IT, SHE). First Nations personnel from the communities of Attawapiskat and Timmins were hired

through the Attawapiskat Labour Group (ALG) to assist De Beers' geologists with the sample shipment, movement of the core, data entry and other camp support duties.

A total of 1032 person days equating to 11,928 person hours was worked for the 2012 core drilling program that commenced on March 22, 2012 and finished on May 21, 2012. Drill personnel accounted for the highest number of person hours worked at 4848 hours (41%), followed by ALG personnel with 2052 hours (17%) and core geologists with 1536 hours (13%) and followed by project management and supervision accounting for 1464 person hours worked (13%).

No lost time accidents or injuries were recorded either by De Beers or its external contractors during the man-days worked on the 2012 Alpha program.

8.0 PROJECT COST

The total field cost incurred for the project is CAD \$ 1,296,516.63. The summary of costs is tabulated in Appendix 3 – Statement of Costs. Cost incurred for the sample processing and microdiamond analysis that will be conducted at the De Beers' laboratory in South Africa was not included in the attached statement of cost.

9.0 REFERENCES

Delgaty, J., Sykes, M., Furigay, M., Lyon, R., Morin-Sauertig, M. (2012). *Technical Report* on *Alpha-1 and Alpha-1N Kimberlites 2012 Core Drilling Program*. De Beers Internal Report, pp 1-58.

Avery, R.W., (2010). **2009 Diamond Drilling Program – Delta 1 Kimberlite.** De Beers Internal Report, pp 3-6.

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Appendix 1: Alpha-1 & Alpha-1N Holes Summary and Geological Logs

1.1 A1-12-017C Hole Summary

Hole ID	A1-12-017C	312250 312500	312750 N			
Kimberlite Body	Alpha-1N	8	~			
Start Date	April 1, 2012	2466	0			
Finish Date	April 4, 2012		A1-12-017C ⊕			
Time on Hole	133 hours					
Time on Hole	4 days					
Easting	312573.1					
Northing	5842406.8					
Elevation	84.5 m					
Datum	NAD 83, Zone 17N	8				
Azimuth	0	67465				
Dip	-90					
Topography	Land					
Drilling Contractor	Foraco	Alpha 2012 Drilling				
Drill Rig	Zinex A5-2	Most Meters / Day (24 hours)	81 m			
Drilling Method	Diamond Core	Avg. Meters / Day (24 hours)	35 m			
Foromon	David Melean	Most Meters / Shift (12 hours)	54 m (Night)			
Foreman	David Miclean	Avg. Meters / Shift (12 hours)	20 m			
Drilloro	Jean-Francois Landry (Day)	Rods Pulled	Yes			
Drillers	Mike Taylor (Night)	Casing Left in Hole	12 m			
Casing Diameter	HWT, 114 mm OD, 102 mm ID	Hole Plug Depth	N/A			
Casing Depth	12 m	Cemented	No			
Bit Diameter	96 mm	# Bags of Cement	N/A			
Core Diameter	HQ, 63.5 mm	Survey Date	05/18/2012			
Planned Depth	250 m	Surveyed By	Martin Sykes			
Final Depth	140 m	Survey Instrument	Trimble ProXRT			
EOH Lithology	Limestone (CRB)	Cost / Hole (All-in project costs)	\$151,034.55			
Top of Kimberlite	11.25 m	Cost / Hole (Drilling only)	\$51,848.16			
Bottom of Kimberlite	127.60 m	Cost / m (All-in project costs)	\$1,078.82			
Kimberlite Drilled	116.35 m	Cost / m (Drilling only)	\$370.344			
Number of Core Boxes	44					
Geologists	Charley Murphy, Martin Sykes, Mo Klausen	onique Morin-Sauerteig, Richard L	yon, Megan Little, Kim			
Reporting Geologists	John Delgaty, Maylene Gutierrez-Furigay, Richard Lyon, Monique Morin-Sauerteig, Martin Sykes					

	A1-12-017C Geology Log									
Interval (m)	Major Rock Type	Unit Thickness (m)	Unit Code	Estimated Dilution (%)	Description					
0 - 11.25	Not recorded	11.25			Missing core	Missing core, not Logged.				
11.25 - 59.61	Volcaniclastic Kimberlite	48.36	A1NVK2	5	-	Clast supported, closely packed, well sorted volcaniclastic unit. JP's present. Olivine ranges in size from 2 cm - 1 mm (dominant 1 mm) ~ 45-50 modal%. MX: peridotites and eclogites as well as CPX, GAR and ILM megacrysts. Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20X2 cm window = (Gar:1 CPX: 0 ILM: 20). CRX: Approx. 5% limestone up to 7 cm in size with a dominant size of 2 cm and granite discrete clasts up to 3 cm. MDST observed towards the base. Phlogopite present				
59.61 - 62.20			A1NVK3	5	-	Clast supported, closely packed, mod-well sorted. Cored				
62.20 - 67.59			A1NVK3	70	-	JP's and accretionary lapilli observed. Olivine ranges in				
67.59 - 108.50	Volcaniclastic	67.83	A1NVK3	20	-	size from 1cm - 1mm (dominant 2 mm)~ 1 - 2 modal%				
108.50 - 113.05	Kimberlite	07.03	A1NVK3	80	-	orange in color, cpx and ilmenite observed. One 20 X 2 cm				
113.05 - 122.24		A1NVK3	15	-	window= (Gar: 1 CPX: 3 ILM: 5). CRX: LMST splintery in					
122.24 - 127.44			A1NVK3	6	_	shape with a dominant size of 1cm.				
127.44 - 131.13	Country Rock	10 56	CRB	95	-	Limestane brossie with 1 - 2.9% kimberlite in the metric				
131.13 - 140.00	Breccia	12.00	CRB	95	-					

Logged by: Crystal Mann (Ph.D). Kimberlite Petrology Unit. September 2012.

1.2 A1-12-018C Hole Summary

Hole ID	A1-12-018C	312250 312500	312750 N			
Kimberlite Body	Alpha-1N	-	j			
Start Date	April 2, 2012	0012100				
Finish Date	April 12, 2012	Sec. 47	1			
Time on Hole	307 hours		A1-12-018C			
Time on Hole	11 davs					
Easting	312534.5					
Northing	5842341.9					
Elevation	84.9 m					
Datum	NAD 83, Zone 17N					
Azimuth	0	00027				
Dip	-90	8				
Topography	Land					
Drilling Contractor	Foraco	Alpha 2012 Drilling 0250 m				
Drill Rig	Hydracore 2000	Most Meters / Day (24 hours)	48 m			
Drilling Method	Diamond Core	Avg. Meters / Day (24 hours)	28 m			
Foreman	David Mclean	Most Meters / Shift (12 hours)	33 m (Night)			
		Avg. Meters / Shift (12 hours)	15 m			
Drillers	Chris Spencer (Day)	Rods Pulled	Yes			
Dimoio	Jason Crites (Night)	Casing Left in Hole	None			
Casing Diameter	HWT, 114 mm OD, 102 mm ID	Hole Plug Depth	N/A			
Casing Depth	9 m	Cemented	No			
Bit Diameter	96 mm	# Bags of Cement	N/A			
Core Diameter	HQ, 63.5 mm	Survey Date	05/18/2012			
Planned Depth	250 m	Surveyed By	Martin Sykes			
Final Depth	252 m	Survey Instrument	Trimble ProXRT			
EOH Lithology	Kimberlite (K)	Cost / Hole (All-in project costs)	\$314,655.28			
Top of Kimberlite	10.85 m	Cost / Hole (Drilling only)	\$108,017.00			
Bottom of Kimberlite	252.00 m	Cost / m (All-in project costs)	\$1,248.63			
Kimberlite Drilled	241.15 m	Cost / m (Drilling only)	\$428.64			
Number of Core Boxes	83					
Geologists	Leyla Lavenir, John Delgaty, Char	rley Murphy, Richard Lyon, Kim Kla	ausen			
Reporting Geologists	John Delgaty, Maylene Gutierrez-Furigay, Richard Lyon, Monique Morin-Sauerteig, Martin Sykes					

	A1-12-018C Geology Log								
Interval (m)	Major Rock Type	Unit Thickness (m)	Unit Code	Estimated Dilution (%)		Description			
0 - 10.35	Overburden	10.35	OVB		-	Overburden			
10.35 - 16.58			A1NVK1	5	less phlog	Clast supported, closely packed, well sorted volc. unit. JP's present. Olivine ranges in size from 2 mm - 1 mm (dominant 1 mm) ~ 45 modal %, MX: not observed.			
16.58 - 36.61	Volcaniclastic Kimberlite	26.26	A1NVK1	5	less phlog	Indicators: Garnet mauve in color, cpx and ilmenite present. One 20 X 2 cm window = (Gar: 8 CPX:2 Ilm: 38). CRX: Approx 3% LMST and MDST up to 3 cm with a dominant size of 2 cm. Less Phlogopite than AIVK2.			
36.61 - 60.39		26.09	A1NVK2	5	-	Clast supported, closely packed, well sorted volc. unit. JP's present. Olivine ranges in size from 2 cm - 1 mm			
60.39 - 62.70		20.00	A1NVK2	5	-	(dominant 1 mm) ~ 45-50 modal%. MX: peridotites &			
62.70 - 64.65	Volcaniclastic	caniclastic	A1NVK2	5	mudstone	Indicators: Garnet mauve in color, cpx and illm megacrysts.			
64.65 - 159.58	Kimberlite 96.88	96.88	A1NVK2	5	-	present. One 20X2 cm window = (Gar:1 CPX: 0 ILM: 20). CRX: Approx. 5% limestone up to 7 cm in size with a dominant size of 2 cm and granite discrete clasts up to 3 cm. MDST observed towards the base. Phlogopite present			
159.58 - 173.28	Volcaniclastic Kimberlite			A1NVK4	7	rnd CR	Clast supported, mod well sorted, mod well packed volcaniclastic unit. JP's present. Olivine: ranges in size		
173.28 - 178.73		^{ic} 19.15	A1NVK4	7	-	from 1 m2 mm - 2 mm, dominant 2 mm ~ 10 - 15 %. Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20x2 window = (Gar:3 CPX:1 ILM:23. CRX: Approx. 5% limestone largest of 5cm dominant size 2cm.			
178.73 - 186.10		24.56	A1NVK5	10	-	Clast supported, poorly sorted, poorly packed			
186.10 - 203.29	Volcaniclastic Kimberlite 8.7	24.00	A1NVK5	12	-	from 5 mm - 1 mm (dominant 1 mm) 25 - 30 modal %.			
203.29 - 212.00		8.71	A1NVK5	3	nice acc Iap	Indicators: Garnet mauve in color, cpx and ilm all present. One 20 x 2 window = (Gar: 2 CPX: 5 ILM: 23).			
212.00 - 238.50	4	40	A1NVK5	60	carbonatite	CRX: Approx 7 % limestone largest 3.5 cm dominant			
238.50 - 252.00		40	A1NVK5	70	-	Size 2 cm and granite up to 5 cm dominant size 1 cm. Carbonatite present.			

Logged by: Crystal Mann (Ph.D). Kimberlite Petrology Unit. September 2012.

1.3 A1-12-019C Hole Summary

Hole ID	A1-12-019C	312250 312500	312750 N	
Kimberlite Body	Alpha-1N	9	A	
Start Date	April 10, 2012	0001408	TRACK I	
Finish Date	April 17, 2012	Sec. 1	A	
Time on Hole	132 hours		$\left(\right)$	
Time on Hole	6 days			
Easting	312386.7	(- (
Northing	5842135.1			
Elevation	84.9 m	A1-12:019C		
Datum	NAD 83, Zone 17N			
Azimuth	0		* · · · · ·	
Dip	-90	1000		
Topography	Land	\bigcirc		
Drilling Contractor	Foraco	Alpha 2012 Drilling 0250 m		
Drill Rig	Zinex A5-2	Most Meters / Day (24 hours)	75 m	
Drilling Method	Diamond Core	Avg. Meters / Day (24 hours)	62 m	
Foromon	David Mclean	Most Meters / Shift (12 hours)	45 m (Night and Day)	
Foreman		Avg. Meters / Shift (12 hours)	31 m	
Drilloro	Jean-Francois Landry (Day)	Rods Pulled	Yes	
Dimers	Jason Crites (Night)	Casing Left in Hole	10.6 m	
Casing Diameter	HWT, 114 mm OD, 102 mm ID	Hole Plug Depth	N/A	
Casing Depth	13.5 m	Cemented	No	
Bit Diameter	96 mm	# Bags of Cement	N/A	
Core Diameter	HQ, 63.5 mm	Survey Date	05/18/2012	
Planned Depth	250 m	Surveyed By	Martin Sykes	
Final Depth	260 m	Survey Instrument	Trimble ProXRT	
EOH Lithology	Limestone (CRB)	Cost / Hole (All-in project costs)	\$127,798.47	
Top of Kimberlite	10.61 m	Cost / Hole (Drilling only)	\$43,871.52	
Bottom of Kimberlite	220.7 m	Cost / m (All-in project costs)	\$491.53	
Kimberlite Drilled	210.09 m	Cost / m (Drilling only)	\$168.74	
Number of Core Boxes	87			
Geologists	John Delgaty, Charley Murphy, N	lonique Morin-Sauerteig, Megan L	ittle	
Reporting Geologists	John Delgaty, Maylene Gutierrez-Furigay, Richard Lyon, Monique Morin-Sauerteig, Martin Sykes			

	A1-12-019C Geology Log									
Interval (m)	Major Rock Type	Unit Thickness (m)	Unit Code	Estimated Dilution (%)		Description				
0 - 10.61	Overburden	10.61	OVB		-	Overburden				
10.61 - 22.81			VKA	5	-					
22.81 - 24.70			VKA	0	carbonatite	Clast supported, well sorted, closely packed. Olivine				
24.70 - 33.98	Volcaniclastic	52 72	VKA	5	-	ranges in size from 1 cm - 1 mm (dominant 1 mm) ~				
33.98 - 37.20	Kimberlite	52.72	VKA	5	-	GAR° 0 CPX 4 II M 7) MX CPX megacrysts				
37.20 - 38.98			VKA	1	carbonatite	observed (~2 cm). Carbonatite observed.				
38.98 - 63.33			VKA	5	-					
63.33 - 113.26		clastic 53.21 rlite	A1NVK4	7	possibly A1NVK4	Clast supported, mod well sorted, mod well packed volcaniclastic unit. JP's present. Olivine: ranges in				
113.26 - 116.54	Volcaniclastic Kimberlite		53.21	53.21	tic 53.21	A1NVK4	5	-	size from 1 m2 mm - 2 mm, dominant 2 mm ~ 10 - 15 %. Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20 x 2 window = (Gar:3 CPX:1 ILM:23. CRX: Approx. 5 % limestone largest of 5 cm dominant size 2 cm.	
116.54 - 118.78			VKC	5	-					
118.78 - 140.00		50.02	VKC	10	-					
140.00 - 152.38	-	50.92	VKC	15	-	Clast supported, mod sorted, moderately packed. JP's				
152.38 - 167.46	Volcaniclastic		VKC	60	-	present. Olivine ranges in size from 5 mm - 2 mm				
167.46 - 172.19	Kimberlite	Kimberlite VKC 53.24 VKC	VKC	10	-	(Car: 0 CPX: 1 ILM: 2) MX: observed but expremely				
172.19 - 174.44	-		VKC	2	-	altered HK present within unit				
174.44 - 176.23	53.24		VKC	5	-	p				
176.23 - 220.70			VKC	2	-					
220.70 - 260.00	Country Rock Breccia	39.30	CRB	97	-	Limestone breccia with 1 - 3 % kimberlite in the matrix.				

Logged by: Crystal Mann (Ph.D). Kimberlite Petrology Unit. September 2012.

1.4 A1-12-020C Hole Summary

Hole ID	A1-12-020C	312250 312500	312750 N			
Kimberlite Body	Alpha-1	9	A			
Start Date	April 13, 2012	052146	1993			
Finish Date	April 24, 2012	The second s	\square			
Time on Hole	209 hours		12			
Time on Hole	9 days					
Easting	312441.2	[- [
Northing	5841728.3					
Elevation	85.7 m					
Datum	NAD 83, Zone 17N					
Azimuth	0					
Dip	-90	88				
Topography	Land					
Drilling Contractor	Foraco	Alpha 2012 Drilling 0250 m				
Drill Rig	Hydracore 2000	Most Meters / Day (24 hours)	81 m			
Drilling Method	Diamond Core	Avg. Meters / Day (24 hours)	50.4 m			
Foreman	David Mclean	Most Meters / Shift (12 hours)	48 m (Day)			
i oroman		Avg. Meters / Shift (12 hours)	28 m			
Drillers	Rick LeBlanc (Day)	Rods Pulled	Yes			
Dimers	Chris Spencer (Night)	Casing Left in Hole	12 m			
Casing Diameter	HWT, 114 mm OD, 102 mm ID	Hole Plug Depth	N/A			
Casing Depth	15 m	Cemented	No			
Bit Diameter	96 mm	# Bags of Cement	N/A			
Core Diameter	HQ, 63.5 mm	Survey Date	05/18/2012			
Planned Depth	250 m	Surveyed By	Martin Sykes			
Final Depth	249 m	Survey Instrument	Trimble ProXRT			
EOH Lithology	Kimberlite Breccia (DPKB)	Cost / Hole (All-in project costs)	\$202,347.56			
Top of Kimberlite	4.94 m	Cost / Hole (Drilling only)	\$69,463.24			
Bottom of Kimberlite	249.00 m	Cost / m (All-in project costs)	\$812.64			
Kimberlite Drilled	244.06 m	Cost / m (Drilling only)	\$278.97			
Number of Core Boxes	83					
Geologists	Martin Sykes, Richard Lyon, Kim	Klausen				
Reporting Geologists	John Delgaty, Maylene Gutierrez-Furigay, Richard Lyon, Monique Morin-Sauerteig, Martin Sykes					

	A1-12-020C Geology Log									
Interval (m)	Major Rock Type	Unit Thickness (m)	Unit Code	Estimated Dilution (%)	Description					
0 - 4.95	Overburden	4.95	OVB		Overburden					
4.95 - 12.31			A1VK1	3	Clast supported, closely packed, well sorted volcaniclastic unit. JP's					
12.31 - 20.85			A1VK1BBB	85	present. Olivine: 1.8 cm - 1 mm dominant size 1 mm (10 - 15 modal					
20.85 - 24.00	Volcaniclastic	39.96	A1VK1	3	%) Megacrysts: Olivine and CPX up to / cm. Indicators: Garnet mauve					
24.00 - 25.61	Rinbenite		A1VK1	5	2 Ilm: 5) CRX: Total up to 5 %. Limestone largest 3 cm and average 1					
25.61 - 44.91			A1VK1	5	cm. Granite 5 cm to 1 cm average 1 cm.					
44.91 - 69.82			A1VK3	5						
69.82 - 102.23			A1VK3	5						
102.23 - 109.00		Volcaniclastic		A1VK3	7	Clast supported, closely packed, well sorted volcaniclastic unit.				
109.00 - 113.90			A1VK3	5	present both magmatic and armored. Olivine ranges in size from 1.4					
113.90 - 119.90	Volcaniclastic		A1VK3	7	cm to 1 mm. 5 - 20 modal % (really variable). MX: CPX megacrysts.					
119.90 - 162.70	Kinbenite		A1VK3	7	One 20 x 2 window (Gar:0 CPX: 5 Ilm: 8. CRX: Up to 7 %. Limestone					
162.70 - 180.31			A1VK3	7	and Granite up to 5 cm and the average size is 1 cm.					
180.31 - 206.00			A1VK3	5						
206.00 - 212.18			A1VK3	5						
212.18 - 221.53			A1VK4BB	60	Clast supported, well packed, well sorted volcaniclastic unit. JP's					
221.53 - 234.68	Volcaniclastic	36.82	A1VK4	3	present. Olivine: 1 cm - 1 mm dominant 1 mm. 15 modal % Indicators present: Garnet mauve in color, cpx and ilmentite all present. One 20					
234.68 - 249.00	Kimberlite		A1VK4	5	x 2 window (Gar: 0 CPX: 2 IIM: 4) CRX: Limestone and granite up to ~ 5 %. Dominant size is 1 cm largest is ~ 5 cm.					

Logged by: Crystal Mann (Ph.D). Kimberlite Petrology Unit. August 2012.

1.5 A1-12-021C Hole Summary

Hole ID	A1-12-021C	31/2500 31/2500	187750	
Kimberlite Body	Alpha-1		Â	
Start Date	April 24, 2012	000000000000000000000000000000000000000	14.1.1	
Finish Date	May 4, 2012	8	0	
Time on Hole	207 hours		/)	
Time on Hole	9 days			
Easting	312359.5			
Northing	5841728.7			
Elevation	85.1 m			
Datum	NAD 83, Zone 17N			
Azimuth	0		5	
Dip	-90	8		
Topography	Land	56		
Drilling Contractor	Foraco	Alpha 2012 Drilling		
Drill Rig	Zinex A5-2	Most Meters / Day (24 hours)	75 m	
Drilling Method	Diamond Core	Avg. Meters / Day (24 hours)	40.8 m	
Foreman	David Mclean	Most Meters / Shift (12 hours) Ava. Meters / Shift (12 hours)	45 m (Night and Day) 27.2 m	
	Paul Audet (Day)	Rods Pulled	Yes	
Drillers	Mike Taylor (Night)	Casing Left in Hole	13.5 m	
Casing Diameter	HWT, 114 mm OD, 102 mm ID	Hole Plug Depth	N/A	
Casing Depth	19.5 m	Cemented	No	
Bit Diameter	96 mm	# Bags of Cement	N/A	
Core Diameter	HQ, 63.5 mm	Survey Date	05/18/2012	
Planned Depth	250 m	Surveyed By	Martin Sykes	
Final Depth	241.35 m	Survey Instrument	Trimble ProXRT	
EOH Lithology	Kimberlite (K)	Cost / Hole (All-in project costs)	\$209,124.75	
Top of Kimberlite	10.46 m	Cost / Hole (Drilling only)	\$71,789.76	
Bottom of Kimberlite	241.35 m	Cost / m (All-in project costs)	\$866.48	
Kimberlite Drilled	230.89 m	Cost / m (Drilling only)	\$297.45	
Number of Core Boxes	78			
Geologists	John Delgaty, Martin Sykes, Richa	ard Lyon, Kim Klausen		
Reporting Geologists	John Delgaty, Maylene Gutierrez-Furigay, Richard Lyon, Monique Morin-Sauerteig, Martin Sykes			

			A	A1-12-021C Geology Log								
Interval (m)	Major Rock Type	Unit Thickness (m)	Unit Code	Estimated Dilution (%)	Description							
0 - 10.46	Overburden	10.46	OVB		Overburden							
10.46 - 16.71	Volcaniclastic Kimberlite	6.25	A1VK1	3	Clast supported, closely packed, well sorted volcaniclastic unit. JP's							
16.71 - 33.78	Volcaniclastic	04.40	A1VK1	3	%) Megacrysts: Olivine and CPX up to 7 cm. Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20 X 2 window (Gar: 1 CPX:							
33.78 - 38.14	Kimberlite	21.43	A1VK1	5	2 Ilm: 5) CRX: Total up to 5 %. Limestone largest 3 cm and average 1 cm. Granite 5 cm to 1 cm average 1 cm.							
38.14 - 54.55			A1VK3	5	Clast supported, closely packed, well sorted volcaniclastic unit. JPs							
54.55 - 81.00	Volcaniclastic	71 /7	A1VK3	5	present both magmatic and armored. Olivine ranges in size from 1.4 cm to 1 mm. 5 - 20 modal % (really variable). MX: CPX megacrysts.							
81.00 - 97.47	Kimberlite	,,	A1VK3	5	Indicator minerals: Garnet mauve in color, cpx and ilmenite all present. One 20 x 2 window (Gar:0 CPX: 5 Ilm: 8. CRX: Up to 7 %. Limestone							
97.47 - 109.61			A1VK3	5	and Granite up to 5 cm and the average size is 1 cm.							
109.61 - 130.22			A1VK4	12								
130.22 - 140.66			A1VK4B	20								
140.66 - 149.46			A1VK4B	20	Clast supported, well packed, well sorted volcaniclastic unit. JP's							
149.46 - 156.14	Volcaniclastic	94 93	A1VK4BB	70	present. Olivine: 1 cm - 1 mm dominant 1 mm. 15 modal % Indicators							
156.14 - 161.27	Kimberlite	04.00	A1VK4B	20	x 2 window (Gar: 0 CPX: 2 IIM: 4) CRX: Limestone and granite up to ~							
161.27 - 162.87			A1VK4BBB	80	5 %. Dominant size is 1 cm largest is ~ 5 cm.							
162.87 - 197.00			A1VK4B	20								
197.00 - 204.54			A1VK4	12								
204.54 - 228.80	Volcaniclastic	00.04	A1VK5BB	70	Clast supported, loosly packed, poorly sorted. JP's present. Olivine: present up to 10 modal %. Indicator minerals : Garnet mauve and							
228.80 - 241.35	Kimberlite	36.81	A1VK5BB	70	CPX both extremely rare. One 20 x 2 window (Gar:0 CPX:0 IIM: 1). CRX: ~ 70 % limestone and granite clasts.							

Logged by: Crystal Mann (Ph.D). Kimberlite Petrology Unit. August 2012.

1.6 A1-12-022C Hole Summary

Hole ID	A1-12-022C	312560 312500	312750 N
Kimberlite Body	Alpha-1	8	A
Start Date	April 21, 2012	sizves	57.5
Finish Date	April 28, 2012	Sec. 1	
Time on Hole	192 hours		
Time on Hole	8 days		/
Easting	312401.0		
Northing	5841664.9		
Elevation	85.3 m		
Datum	NAD 83, Zone 17N		1
Azimuth	0	$\langle \rangle$	
Dip	-90	uoope	
Topography	Land	8	
Drilling Contractor	Foraco	Alpha 2012 Dniling 0250 m	
Drill Rig	Zinex A5-2	Most Meters / Day (24 hours)	75 m
Drilling Method	Diamond Core	Avg. Meters / Day (24 hours)	48.4 m
Foromon	David Malaan	Most Meters / Shift (12 hours)	45 m (Day)
roleman	David Miclean	Avg. Meters / Shift (12 hours)	27 m
Drilloro	Paul Audet (Day)	Rods Pulled	Yes
Dimers	Chris Spencer (Night)	Casing Left in Hole	No
Casing Diameter	HWT, 114 mm OD, 102 mm ID	Hole Plug Depth	N/A
Casing Depth	28.5 m	Cemented	No
Bit Diameter	96 mm	# Bags of Cement	N/A
Core Diameter	HQ, 63.5 mm	Survey Date	05/18/2012
Planned Depth	250 m	Surveyed By	Martin Sykes
Final Depth	239 m	Survey Instrument	Trimble ProXRT
EOH Lithology	Kimberlite Breccia (DPKB)	Cost / Hole (All-in project costs)	\$185,888.67
Top of Kimberlite	11.4 m	Cost / Hole (Drilling only)	\$63,813.12
Bottom of Kimberlite	239.00 m	Cost / m (All-in project costs)	\$777.77
Kimberlite Drilled	196.67 m	Cost / m (Drilling only)	\$267.00
Number of Core Boxes	75		
Geologists	John Delgaty, Charley Murphy. M	artin Sykes, Monique Morin-Sauerte	eig, Megan Little
Reporting Geologists	John Delgaty, Maylene Gutierrez- Sykes	Furigay, Richard Lyon, Monique Mo	prin-Sauerteig, Martin

	A1-12-022C Geology Log								
Interval (m)	Major Rock Type	Unit Thickness (m)	Unit Code	Estimated Dilution (%)	Description				
0 - 11.40	Overburden	11.4	OVB		Overburden				
11.40 - 15.00	Volcaniclastic Kimberlite	3.6	A1VK1	2	Clast supported, closely packed, well sorted volcaniclastic unit. JP's present. Olivine: 1.8 cm - 1 mm dominant size 1 mm (10 - 15 modal %) Megacrysts: Olivine and CPX up to 7 cm. Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20 X 2 window (Gar: 1 CPX: 2 IIm: 5) CRX: Total up to 5 %. Limestone largest 3 cm and average 1 cm. Granite 5 cm to 1 cm average 1 cm.				
15.00 - 27.18			CRB	100	Mudstone				
27.18 - 34.81	Breccia	31.70	CRB	95	Limestone Breccia				
34.81 - 46.70			CRB	95	Limestone Breccia				
46.70 - 49.85		iniclastic 60.78 Iberlite	A1VK3	5	Clast supported, closely packed, well sorted volcaniclastic unit. JPs present both magmatic and armored. Olivine ranges in size from				
49.85 - 86.00	Volcaniclastic		A1VK3	5	1.4 cm to 1 mm. 5 - 20 modal % (really variable). MX: CPX megacrysts. Indicator minerals: Garnet mauve in color, cpx and				
86.00 - 107.48	Kimbenite		A1VK3	7	ilmenite all present. One 20 x 2 window (Gar:0 CPX: 5 Ilm: 8). CRX: Up to 7 %. Limestone and Granite up to 5 cm and the average size is 1 cm.				
107.48 - 124.68			A1VK4	5					
124.68 - 136.49			A1VK4	7	Clast supported, well packed, well sorted volcaniclastic unit. JP's				
136.49 - 159.06			A1VK4	7	present. Olivine: 1 cm - 1 mm dominant 1 mm. 15 modal %				
159.06 - 165.94	Kimberlite	88.72	A1VK4B	25	present One 20 x 2 window (Gar: 0 CPX: 2 IIM: 4) CRX:				
165.94 - 182.41			A1VK4	10	Limestone and granite up to ~ 5 %. Dominant size is 1 cm largest				
182.41 - 191.62			A1VK4B	25	is ~ 5 cm.				
191.62 - 196.20			A1VK4BBB	97					
196.20 - 198.76			A1VK5BBB	75	Clast supported, loosly packed, poorly sorted. JP's present.				
198.76 - 206.43	Volcaniclastic	42.8	A1VK5BBB	75	Ulivine: present up to 10 modal %. Indicator minerals : Garnet mauve and CPX both extremely rare. One 20 x 2 window (Gar:0)				
206.43 - 239.00			A1VK5BBB	80	CPX:0 IIM: 1). CRX: ~ 70 % limestone and granite clasts.				

Logged by: Crystal Mann (Ph.D). Kimberlite Petrology Unit. August 2012.

1.7 A1-12-023C Hole Summary

Hole ID	A1-12-023C	312250 312500	312750 N		
Kimberlite Body	Alpha-1N	8	A		
Start Date	April 4, 2012	schas			
Finish Date	April 9, 2012		A1-12-023C		
Time on Hole	120 hours				
Time on Hole	6 days				
Easting	312573.1				
Northing	5842406.8				
Elevation	84.5 m				
Datum	NAD 83, Zone 17N	\bigcirc	£		
Azimuth	152	6845000			
Dip	-82				
Topography	Land				
Drilling Contractor	Foraco	Alpha 2012 Drilling			
Drill Rig	Zinex A5-2	Most Meters / Day (24 hours)	66 m		
Drilling Method	Diamond Core	Avg. Meters / Day (24 hours)	48.4 m		
Foromon	David Melean	Most Meters / Shift (12 hours)	48 m (Night)		
Foreman	David Miclean	Avg. Meters / Shift (12 hours)	30.3 m		
Drilloro	Jean-Francois Landry (Day)	Rods Pulled	Yes		
Dimers	Mike Taylor (Night)	Casing Left in Hole	None		
Casing Diameter	HWT, 114 mm OD, 102 mm ID	Hole Plug Depth	N/A		
Casing Depth	13.5 m	Cemented	No		
Bit Diameter	96 mm	# Bags of Cement	N/A		
Core Diameter	HQ, 63.5 mm	Survey Date	05/18/2012		
Planned Depth	250 m	Surveyed By	Martin Sykes		
Final Depth	242 m	Survey Instrument	Trimble ProXRT		
EOH Lithology	Kimberlite (K)	Cost / Hole (All-in project costs)	\$116,180.47		
Top of Kimberlite	12.27 m	Cost / Hole (Drilling only)	\$39,883.56		
Bottom of Kimberlite	242.00 m	Cost / m (All-in project costs)	\$480.08		
Kimberlite Drilled	179.51 m	Cost / m (Drilling only)	\$164.81		
Number of Core Boxes	81				
Geologists	Leyla Lavenir, John Delgaty, Charley Murphy, Richard Lyon, Kim Klausen				
Reporting Geologists	John Delgaty, Maylene Gutierrez-Furigay, Richard Lyon, Monique Morin-Sauerteig, Martin Sykes				

A1-12-023C Geology Log								
Interval (m)	Major Rock Type	Unit Thickness (m)	Unit Code	Estimated Dilution (%)	Description			
0 - 12.27	Overburden	12.27	OVB		-	Overburden		
12.27 - 37.78			A1NVK2	5	MX, CPX macros	Clast supported, closely packed, well sorted volcaniclastic unit. JP's present. Olivine ranges in size from 2 cm - 1 mm (dominant 1 mm) ~ 45-50 modal%. MX: peridotites and eclogites as well as		
37.78 - 57.83	Volcaniclastic Kimberlite	45.56	A1NVK2	5	-	CPX, GAR and ILM megacrysts. Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20X2 cm window = (Gar:1 CPX: 0 ILM: 20). CRX: Approx. 5% limestone up to 7 cm in size with a dominant size of 2 cm and granite discrete clasts up to 3 cm. MDST observed towards the base. Phlogopite present		
57.83 - 64.11		0.12	A1NVK3	5	Transition zone between ANVK2/VK			
64.11 - 66.95		9.12	A1NVK3	5	Transition zone between ANVK2/VK	Clast supported, closely packed, mod-well sorted. Cored JP's and accretionary lapilli observed. Olivine		
66.95 - 71.85	Volcaniclastic		A1NVK3	60	-	ranges in size from 1cm - 1mm (dominant 2 mm)~ 1		
71.85 - 87.71	Kimberlite		A1NVK3	5	-	Garnet mauve to orange in color, cpx and ilmenite		
87.71 - 90.16			A1NVK3	5	splintery CR	observed. One 20 X 2 cm window= (Gar: 1 CPX: 3		
90.16 - 106.14		64.64	A1NVK3	15	-	dominant size of 1cm.		
106.14 - 108.92			A1NVK3	20	VK3			
108.92 - 123.29			A1NVK3	10	-			
123.29 - 131.59			A1NVK3	97	-			
131.59 - 134.46			CRB	98	-			
134.46 - 147.19	.46 - 147.19		CRB	99	-	Limestone braccia with 1 - 3 % kimberlite in the		
147.19 - 157.87	Breccia	39.65	CRB	99	-	matrix.		
157.87 - 159.72			CRB	3	-			
159.72 - 171.24			CRB	99	-			

171.24 - 173.88			A1NVK4	3	combine with CRB?	Clast supported, mod well sorted, mod well packed volcaniclastic unit. JP's present. Olivine: ranges in
173.88 - 176.83	Volcaniclastic	50.09	A1NVK4	3	rnd CR	size from 1 m2 mm - 2 mm, dominant 2 mm ~ 10 -
176.83 - 179.00	Kimberlite		A1NVK4	3	-	15 %. Indicators: Garnet mauve in color, cpx and
179.00 - 206.51			A1NVK4	7	-	CPX:1 ILM:23. CRX: Approx. 5 % limestone largest
206.51 - 221.33			A1NVK4	7	-	of 5 cm dominant size 2 cm.
221.33 - 225.00	Country Rock Breccia	3.67	CRB	95	almost solid LMST	Limestone breccia with 1 - 3 % kimberlite in the matrix.
225.00 - 237.63			A1NVK4	75	matrix different kimb?	Clast supported, mod well sorted, mod well packed volcaniclastic unit. JP's present. Olivine: ranges in
237.63 - 240.88 Volcaniclastic Kimberlite		15.88 A1	A1NVK4	7	same as above CR	size from 1 m2 mm - 2 mm, dominant 2 mm ~ 10 - 15 %. Indicators: Garnet mauve in color, cpx and ilmenite all present. One 20 x 2 window = (Gar:3 CPX:1 ILM:23. CRX: Approx. 5 % limestone largest of 5 cm dominant size 2 cm.
240.88 - 242.00	Volcaniclastic Kimberlite	1.12	A1NVK5	10	-	Clast supported, poorly sorted, poorly packed volcaniclastic unit. JP's present. Olivine ranges in size from 5 mm - 1 mm (dominant 1 mm) 25 - 30 modal %. Indicators: Garnet mauve in color, cpx and ilm all present. One 20 x 2 window = (Gar: 2 CPX: 5 ILM: 23). CRX: Approx 7 % limestone largest 3.5 cm dominant size 2 cm and granite up to 5 cm dominant size 1 cm. Carbonatite present.

Logged by: Crystal Mann (Ph.D). Kimberlite Petrology Unit. September 2012.

Appendix 2: Alpha-1 & Alpha-1N Holes Strip Logs









Prepared by M. Furigay, August 2012.



Prepared by M. Furigay, August 2012.



Prepared by M. Furigay, August 2012.



Appendix 3: Statement of Costs

ALPHA ASSESSMENT WORK - STATEMENT OF COSTS				
1) LABOUR & FIFLD SUPERVISION	359 308 19			
a) Labour				
 Attawapiskat Labour Group (ALG) - camp labors, data entry, geologist assistant (6 ALG, 997 hours) Blue Heron - SHE Field Technical Support @ 90/hour or 900/day 12 hrs (3 Blue Heron 54 days) 	115,323.93			
 Contract Geologist (4 Geo, Average Rate: ~45/hour, 80 days) 	90,445.48			
b) Field Supervision	,			
• De Beers Full Time Staff (3 Field Supervisors, 1 Program Manager, 1 Department Manager)	78,103.95			
c) Services Recovered (Intra-Company) - Kimberlite Petrology Unit - related costs including wages	72,340.59			
d) Settled Costs (Data Geologist/Reporting)	3,094.24			
2) CONTRACTOR'S & CONSULTANT FEES	401,735.51			
 Drilling Contract and Consumables 	376,168.78			
 Training (ArcGIS) 	1,814.45			
 Medical Examinations 	403.78			
 Services Mining Repair & Maintenance (Victor Mine charges to Exploration during the program) 	23,348.50			
3) SUPPLIES USED & EQUIPMENT RENTAL	372,479.79			
a) Maintenance Cost				
Adhesives and Seal Fix	14.43			
Building Materials	11.06			
b) Fuel, Oil & Lubricant	14 201 09			
	2 /07 30			
Fuel & Gases - Other	53 455 99			
c) Ferrosilicon & Flocculent	64.92			
d) Mining Treatment Consumables	0.1.52			
• Field Supplies	9,348.82			
Safety Equipment	4,055.85			
Electric Lamps	58.27			
 Auto spares and accessories 	999.75			
 Domestic and Social Requirement 	524.32			
 Power transmission element 	14.98			
Communication Devices	3,180.00			
 Cables, Wiring, Accessories 	14.17			
 Fasteners 	172.26			
• Tools	3.78			
e) Health & Safety				
Warning Signs	255.71			
Uniform and Protective Clothing	2,257.37			
f) Other Office Costs	1 050 00			
Society Equipment	1,950.00			
	107 50			
Satellite Communication	1 080 59			
g) Heliconter Fixed Charge	278.122.84			
4) FOOD & LODGING	76.325.65			
a) Food				
Travel Meals	849.29			
Entertainment - Local	6.58			
b) Lodging				
 Accomodation (meals included) 	75,469.78			
5) TRANSPORTATION of PERSONS w/in ONTARIO to & from MINING LAND	80,829.94			
Travel Domestic Flights	79,305.03			
Travel Expenses, Other	1,524.91			
6) SHIPMENT OF SAMPLES	5,837.55			
Freight - Air	3,800.00			
• Freight	2,037.55			
TOTAL COSTS INCURRED	1,296,516.63			

Certification verifying costs:

I, Leyla Lavenir, do hereby certify that the amounts shown are as accurate as may reasonably determined and the costs were incurred while conducting assessment work on the Alpha claim area. As Exploration Program Manager, I am authorized to make this certification.

Signature

Appendix 4: Man-day Distribution, 2012 Alpha-1 & Alpha-1N Core Hole Drilling Program

Project Management/Field Supervisors/Geologists/Administration (De Beers Canada Inc Exploration)									
	March	April	May	Total					
Total number of person days worked	49	152	75	276					
Total number of person hours worked	552	1692	840	3084					
First Nations Camp Support / Geologist Assistants (ALG - Attawapiskat Labour Group									
	March	April	May	Total					
Total number of person days worked	30	97	44	171					
Total number of person hours worked	360	1164	528	2052					
Contractors (Foraco Canada Ltd., Blue Heron)									
	March	April	May	Total					
Total number of person days worked	131	301	42	474					
Total number of person hours worked	1488	3504	468	5460					
OVERALL TOTALS									
	March	April	May	Total					
Total number of person days worked	210	550	161	921					
Total number of person hours worked	2400	6360	1836	10596					









Ministry of Northern Development and Mines

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Mining Claim Dispositions

Explanatory Notes

TENURE ATTRIBUTES

Tenure Type:	Lease	Sub-TenureType:	21 Year
Lease or Licence:	107476	Tenure Rights:	Mining and Surface Rights
Start Date:	2003-Dec-01	Lease Expiry Date:	2024-Nov-30

LAND ATTRIBUTES

Status:	Active	Area in Hectares:	162.322			
Township or Area:	BMA 526 834					
Description:	CLM443 All that land and land under water, being all of Perimeter Survey CLM443, comprising Mining Claims P1052275, P1052276, P1052279, P1052280, P1052283, P1052284, P1227090, P1227091 and P1227092					
Location No:		Section or Block No:				
Survey Plan:	23R-10808	Part on Plan: 1	CLM No: 443			
Land Registry Office:	KENORA (KENORA)	Parcel No:	PIN No:			

Claim Numbers	Lot	Concession	Claim Numbers	Lot	Concession
P1227091			P1052275		
P1052283			P1052276		
P1227090			P1052280		
P1052284			P1052279		
CLM443			P1227092		

OWNER ATTRIBUTES

Owner:

DE BEERS CANADA INC.

This information is provided as a public service, but we cannot guarantee that the information is current or accurate. Readers should verify the information before acting on it.