

Chidliak Exploration Project
Bulk Sample Monitoring Plan

March 2023

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REVISION HISTORY

Revision	Date	Comments
0.0	March 7, 2018	Peregrine version submitted to the NWB for the 2017 renewal application.
1.0	March 1, 2023	Revision to update Peregrine info to De Beers format with submission to NWB 2023 application.

1 INTRODUCTION

De Beers, as the sole owner of Peregrine Diamonds Ltd., has authorization to collect bulk samples at six kimberlites located within the Chidliak property: The target kimberlites are CH-1, CH-6, CH-7, CH-31, CH-44 and CH-45.

Bulk sampling methods can take two forms:

- 1) Trenching
- 2) Large Diameter Reverse Circulation Drilling

This plan describes how De Beers will manage and monitor the bulk sampling programs at the Chidliak exploration site.

1.1 PURPOSE

The purpose of bulk sampling is to obtain a sufficient volume of kimberlite to assess the economic potential for future diamond mining. Bulk sample drill/trench programs are typically done in the winter however could occur during other seasons as well.

1.2 SCOPE

There are six primary kimberlites of interest for bulk sampling. Each of these are described below, including a synopsis of sampling that has already occurred. Additional bulk sampling may occur at other kimberlites in the project area following completion of successful preliminary drilling programs.

1.2.1 CH-1 Kimberlite

The CH-1 kimberlite was discovered in 2009. It was the subject of core and small diameter reverse circulation drilling during programs completed in 2009, 2010 and 2012. A total of nine (9) drill holes have been completed consisting of six (6) core holes and three (3) small diameter reverse circulation ("RC") holes. Mini-bulk trench samples were collected in 2008 (2.28 tonnes) and 2009 (50 tonnes).

Projection: Latitude/Longitude
Datum: WGS 84
Latitude: 64° 15' 54.36"N
Longitude: 66° 19' 59.16"W
50K NTS: 26B08
Mining Lease: L-5813 (Former Mineral Claim CH325, K12817)

1.2.2 CH-6 Kimberlite

The CH-6 Kimberlite was discovered in 2009. The kimberlite has been the subject of drill programs in 2009, 2010, 2011, 2012, 2014, 2015 and 2017. A total of 104 drill holes have been completed at the CH-6 kimberlite consisting of 44 small diameter reverse circulation ("RC") holes and 46 core holes. A 508 tonne trench sample was taken from the CH-6 kimberlite in 2013.

Projection: Latitude/Longitude
Datum: WGS 84
Latitude: 64° 19' 19.20"N
Longitude: 66° 31' 46.92"W
50K NTS: 26B07
Mining Lease: L-5806 (Former Mineral Claim CH050, K12542)

1.2.3 CH-7 Kimberlite

The CH-7 kimberlite was discovered in 2010. The kimberlite has been the subject of drill programs in 2010, 2011, 2012, 2014 and 2015. A 50 tonne mini-bulk sample was collected from a trench in 2010 and a 558 tonne large diameter drill program was completed in 2015. A total of 76 drill holes have been completed at CH-7 consisting of 29 core holes, six (6) large diameter RC holes and 41 small diameter RC holes.

Projection: Latitude/Longitude
Datum: WGS 84
Latitude: 64° 15' 1.08"N
Longitude: 66° 21' 13.68"W
50K NTS: 26B08
Mining Lease: L-5814 (Former Mineral Claim CH392, K12884)

1.2.4 CH-31 Kimberlite

The CH-31 kimberlites was discovered in 2010. It was subject of drill programs in 2010, 2011 and 2012. A total of 14 drill holes have been completed at CH-31 consisting of 11 core holes and three (3) small diameter RC holes.

Projection: Latitude/Longitude
Datum: WGS 84
Latitude: 64° 13' 21.36"N
Longitude: 66° 18' 23.76"W
50K NTS: 26B01
Mining Lease: L-5815 (Former Mineral Claim CH393, K12885)

1.2.5 CH-44 Kimberlite

The CH-44 kimberlite was discovered in 2010. Drill campaigns were undertaken on this kimberlite in 2010, 2011, 2012, and 2014. A total of 49 drill holes have been completed at CH-44 consisting of 18 core holes and 31 small diameter RC holes.

Projection: Latitude/Longitude

Datum: WGS 84
Latitude: 64° 13' 32.52"N
Longitude: 66° 20' 08.88"W
50K NTS: 26B01
Mining Claim: L-5815 (Former Mineral Claim CH393, K12885)

1.2.6 CH-45 Kimberlite

The CH-45 kimberlite was discovered in 2010 and the subject of drill programs in 2010 and 2011. A total of 5 drill holes have been completed at CH-45 consisting of four (4) core holes and one (1) small diameter RC hole.

Projection: Latitude/Longitude
Datum: WGS 84
Latitude: 64° 14' 31.92"N
Longitude: 66° 21' 03.96"W
50K NTS: 26B01
Mining Lease: L-5814 (Former Mineral Claim CH392, K12884)

1.3 REGULATORY SETTING

- 1) CIRNAC – Class “A” Land Use Permit N2012C002
- 2) NWB – Class “B” – Water Use and Waste Water Disposal Permit #2BE-CHI1823
- 3) GN – Department of Environment - Waste Generator Number #NUG-100030

2 METHODS

2.1 TRENCHING

Trenching is a method to collect a large sample of kimberlite. It is most often used when the kimberlite of interest is close to the surface and can be readily accessed by digging. Both hand and mechanical tools are utilized to extract kimberlite at or near surface. Hand tools can be used in the summer months to collect small tonnage samples that outcrop or have shallow sub crops. Large tonnage trenching activities must take place in winter under frozen ground conditions. Winter trenching programs utilize a pneumatic percussion drill for the placement of blast holes and a track mounted excavator for removing overburden and sample collection. Overburden is stockpiled at the side of the trench. Kimberlite is then collected from the trench and placed in large mega-bags. At the completion of trenching activities the overburden is placed back in the hole and levelled. Typically, in the spring, post reclamation subsidence occurs and a small hollow forms where the trench was excavated.

Trench plans are prepared for each trench location to reflect the unique topographic features of the kimberlite being sampled.

Water at trench locations, if present, will be tested in the summer season following completion of trenching activity.

2.2 LARGE DIAMETER REVERSE CIRCULATION DRILLING

Large Diameter Reverse Circulation drilling involves the usage of a drill rig that is capable of drilling large diameter drill holes with hole diameters ranging between 13 and 28 inches with current tooling on site. A remanufactured Cooper CT 550 drill rig, or similar, will be used to collect chip samples for this purpose.

This type of drilling was approved with Permit Amendment #3 in February 2012 for AANDC (Now INAC) Permit N2008C0005.

Water use for large diameter drilling is authorized by Nunavut Water Board class B water licence 2BE-CHI1218. De Beers anticipates requiring up to 299 m3/day to support the drilling program. Bulk sampling will be conducted in

the winter and under ice water removal is authorized from several water bodies as described below in Section 2.2.3 Authorized Water Sources.

The rotary drill uses water in a closed loop, reverse flood method, with the addition of air via a compressor to lift the kimberlite chips gently to surface inside the drill pipe to safeguard against breakage of any diamonds contained in the sample.

2.2.1 Drill Methodology

As illustrated in Figure 1 below, water conveyed to the drill in a tank and the outer pipe (casing) is filled with water. Compressed air is injected into the inner pipe. This reduces the head pressure of the water inside the inner pipe relative to the water in the casing/hole causing the drilled chips to travel up the inner pipe. The raw sample (kimberlite chips + kimberlite cuttings + water from the circuit) then is discharged through a connecting hose to a drop-box and then onto a shaker table. The kimberlite chips are agitated and screened to a +1.15mm size or similar, dewatered and then directed from the table into a waiting 1.8-tonne capacity mega bag for removal, security tagging and shipment for processing. The remaining water in the cuttings tank is then desilted via a bank of desilting cones, with the fines reporting to a separate 1-tonne mega bag for transport to the designated cuttings deposition area. A tracked Morooka or alternative with picker arm is used for this. The desilted water is then returned to the circuit.



Cuttings-deposition locations were identified and selected by geotechnical engineers employed by EBA TetraTech in the summer of 2011. These locations were reviewed and approved as part of previous permit applications/renewals.

The location and a brief description of each of the locations is provided below:

1) Cuttings Containment Area 1 - CH-7 Rock Basin

This engineer selected cutting containment area has a 7,000 m³ estimated volume. It was used in 2015. A total of 124.8 cubic meters of kimberlite deposited in 2015. Any released water is filtered slowly through the rock rubble at the base of the containment area.

Projection: Latitude/Longitude

Datum: WGS 84

Latitude: 64° 15' 50.6268"N

Longitude: 66° 19' 43.0536"W

50K NTS: 26B08

Mining Lease: L5815 (Former Mineral Claim CH393 K12885)

2) Cuttings Containment Area 2 - Flat Area

This engineer selected cuttings containment area has a 2,000 m³ estimated volume. This area is approved but has not been utilized. This area requires a perimeter snow berm when cuttings are deposited. The cuttings would then thaw slowly over the spring. Water released from the cuttings is expected to infiltrate into the active soils at this site (i.e. the clean granular glacial till) that would naturally run off from the cuttings.

Projection: Latitude/Longitude

Datum: WGS 84

Latitude: 64° 13' 55.8768"N

Longitude: -66° 19' 29.622"W

50K NTS: 26B01

Mining Lease: L-5815 (Former Mineral Claim CH393, K12885)

3) Cuttings Containment Area 4 – CH-6 Rock Basin

This engineer selected cuttings containment area has a 4,000 m³ estimated volume. This area is approved but has not been utilized.

Projection: Latitude/Longitude

Datum: WGS 84

Latitude: 64° 19' 11.3484"N

Longitude: -66° 33' 44.3772"W

50K NTS: 26B07

Mining Lease: L-5806 (Former Mineral Claim CH050 K12542)

2.2.3 Authorized Water Sources

There are five water bodies approved for use as water sources to support the bulk sample drilling program. Average daily water consumption for the 2015 LD drilling was 50 cubic meters per day but may be higher in future years depending on the drilling program. The maximum daily withdrawal requested is 299m³/day. A synopsis of each approved water source is provided below.

1) Winter Water Withdrawal - Sunrise Lake West

The under-ice water volume of this lake based upon bathymetry surveys conducted in 2011 is 7,462,500 m³.

Projection: Latitude/Longitude

Datum: WGS 84

Latitude: 64° 13' 26.13"N

Longitude: 66° 10' 34.63"W

50K NTS: 26B01

Mining Lease: L-6006 (Former Mineral Claim CH418, K12910)

2) Winter Water Withdrawal - "Y" Lake

The under-ice water volume of this lake based upon bathymetry surveys conducted in 2011 is 47,800,100 m3.

Projection: Latitude/Longitude

Datum: WGS 84

Latitude: 64° 18' 59.81"N

Longitude: 66° 46' 53.71"W

50K NTS: 26B07

Mining Lease: L5884 (Former Mineral Claim CH083, K12575)

3) Winter Water Withdrawal - Deep Hole McKeand River

The under-ice water volume of this lake based upon bathymetry surveys conducted in 2011 is 81,700 m3.

Projection: Latitude/Longitude

Datum: WGS 84

Latitude: 64° 16' 20.25"N

Longitude: 66° 33' 17.25"W

50K NTS: 26B07

Mining Lease: L-5851 (Former Mineral Claim CH049, K12541)

4) Winter Water Withdrawal - Island Lake

The under-ice water volume of this lake based upon bathymetry surveys conducted in 2011 is 35,400 m³. This winter water source is used for contingency purposes such as bad weather or other emergencies.

Projection: Latitude/Longitude

Datum: WGS 84

Latitude: 64° 18' 37.48"N

Longitude: 66° 37' 43.95"W

50K NTS: 26B07

Mining Lease: L-5863 (Former Mineral Claim CH062, K12554)

5) Winter Water Withdrawal - Turquoise Lake

The under-ice water volume of this lake based upon bathymetry surveys conducted in 2011 is 39,500 m³.

Projection: Latitude/Longitude

Datum: WGS 84

Latitude: 64° 17' 18.07"N

Longitude: 66° 33' 11.46"W

50K NTS: 26B07

Mining Lease: L-5851 (Former Mineral Claim CH049, K12541)