DE BEERS GROUP

Chidliak Exploration Project

Waste Management Plan
V1.1

April 2023

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TABLES

REVISION HISTORY

Revision	Date	Comments
0.0	January 10, 2018	Peregrine Chidliak Exploration Project WMP
1.0	December 8, 2022	Peregrine version reformatted based upon original WMP
1.1	April 4, 2023	Updates to include NWB Public Comment Recommendations

1 ENVIRONMENTAL POLICY

The overall waste management philosophy, under De Beers' environmental policy, is based on the following principles:

- Health and safety of site employees and visitors is paramount.
- The "Three R" principles (Reduce, Reuse and Recycle) will be implemented.
- Incorporation of regulations, best practices, and waste handling guidelines required.
- Treatment, disposal and management of waste will be performed on site to the maximum practical and economic extent to minimize the volume of waste shipped off site.
- The generation of wastes that may attract wildlife or the interaction between humans and wildlife will be minimized.
- Measures will be implemented to reduce waste generation at the source and minimize wildlife attractants.
- At the time of materials procurement determination of which types of materials are prohibited on site, due to known unacceptable waste products, and will require that products with minimal waste generation be given priority over alternatives where economic and practical.

Waste management principles and procedures will form a fundamental component of personnel site orientation and education. Environmental awareness training and waste management training will form part of the project activities. Procedures outlined in this program will be enforced by site management personnel, through regular site inspections and auditing.

2 SCOPE

This plan addresses all waste originating from exploration activities at the Chidliak Exploration Project site.

Non-Hazardous waste includes any garbage or refuse materials that are not inherently toxic or dangerous as defined by the Workplace Hazardous Materials Information System and the *Transportation of Dangerous Goods Act*. Non-hazardous waste generated at the Chidliak Exploration Project can be sorted into four main categories:

- Domestic waste;
- Drilling Waste
- Liquid wastes
- Maintenance, construction or exploration waste

Domestic waste includes general camp waste, food waste, kitchen grease, and most recyclables. Drilling waste is a mixture of drilling muds, solvents and rock. Liquid waste includes both sewage sludge and grey water. Construction and exploration waste includes bigger, bulkier items such as timber, tires, and building materials.

Non-hazardous waste, although not inherently dangerous, can present some risk of harm to the environment if it is not stored, handled, and disposed of properly. Some of the risks that are mitigated through proper storage, handling and disposal include ingestion by wildlife, attraction and habituation to human areas by wildlife and damage to soil and vegetation growth.

As part of the camp induction, De Beers/Peregrine advises all employees on how to sort, where to place, and how to handle waste. Daily toolbox meetings discuss waste management and periodic weekly safety, health and environment meetings are dedicated to waste awareness and waste handling. Waste removal from site will be ongoing throughout the project season and will occur as often as flights and weather permit. Hazardous waste removal is prioritized and Camp Closure activities will be in accordance with section 1.4.2 and 1.4.3 of the Abandonment and Restoration Plan.

The sections below detail how De Beers manages the waste produced in exploration activities for the Chidliak Exploration Project.

3 WASTE CATEGORIES

3.1 Hazardous Waste

Exploration activities in general do not produce much in the way of hazardous waste.

The main hazardous wastes are empty fuel drums. Drums that can no longer be re-used are flown to Iqaluit and stockpiled in a private yard. When a sufficient number have accumulated, they are taken to Nunatta Environmental Services Inc., a certified waste handler, for cleaning and disposal (#NUR-300002). Alternative waste handlers authorized for the disposal of hazardous waste may be utilized in the future.

Waste fuel is collected and used to power the incinerator. Minor amounts of waste oil are collected and added intermittently to the incinerator in small amounts (500ml). If a large volume of waste oil is generated it is collected and taken to Nunatta Environmental Services (or alternative authorized hazardous waste handler) for disposal.

Any additional hazardous waste is shipped to Nunatta, or alternative authorized hazardous waste handler for proper disposal.

Car batteries are used to power electronics in equipment. Dead car batteries are collected and flown to Iqaluit where they are taken to the Iqaluit landfill battery collection.

Household batteries (AA, AAA etc.) are separated and consolidated in a 5-gallon pail in the field office and later removed for proper disposal at the Iqaluit landfill.

Electronic items are sorted into hazardous waste.

3.2 Non-Hazardous (Domestic) Waste

Domestic garbage consists mainly of food wastes, paper and packaging. The waste is sorted into appropriate receptacles at site. Combustible, non-hazardous materials are burned in the incinerator. Non-combustible materials are collected and periodically flown to Iqaluit for disposal in the Iqaluit land fill or recycling facility (periodically available). Pop cans are collected and donated when possible, to local Iqaluit charities.

3.3 Drill Waste

3.3.1 Core Drill Cuttings

Core drill cuttings are wet and are collected in sumps or natural depressions close to the drill. If drilling is on ice, the cuttings are collected in plastic “sausage” tubes using a centrifuge to separate the water from the cuttings. Cuttings will be taken to the approved disposal areas while they are being generated. The tubes are then collected and deposited in a natural depression on land. Plastic tubes are removed prior to disposal and taken offsite as waste.

3.3.2 RC Drill Cuttings

Small diameter RC drill cuttings are dry. Samples of cuttings are collected for analysis and the remaining material is left at the hole. Drill cuttings whether RC or core are collected and brought to approved cutting deposition locations

3.3.3 Large Diameter Drill Cuttings

Cuttings are collected in bulk sample bags and taken to a selected deposit site where the bulk bags are cut open and the material is deposited. Cuttings will be taken to the approved disposal areas while they are being generated. Three sites for cuttings disposal were reviewed and approved in 2012. The location of these sites are provided in Table 1. Drill cuttings whether RC or core are collected and brought to approved cutting deposition locations. These locations were selected by engineers and approved in previous permit applications. Section 3.3.3 of the Waste Management Plan provides locations of these sites. The drill rig system is built to contain the separation of the clean cuttings (relict material from the raw sample) coming out of the bored hole into a catch-all tyvex (mega-bag). The bag is hung within a containment box where the process begins receiving the cuttings coming out of the large diameter (LDDH) RC or core hole. The cuttings are comprised of drill chips and fine crushed material <1mm which will be disposed of in an approved Cuttings Containment Area depression (water in the closed-loop drill circuit recirculates). The mega-bags are removed prior to final disposal.

Table 1 Location of LDD Cutting Sites

Description	Longitude	Latitude	NTS
Cuttings Containment Area 2 - Flat Area	-66° 19' 29.622"	64° 13' 55.8768"	26B01
Cuttings Containment Area 1 - CH-7 Rock Basin	-66° 19' 43.0536"	64° 15' 50.6268"	26B08
Cuttings Containment Area 3 - CH-6 Rock Basin	-66° 33' 44.3772"	64° 19' 11.3484"	26B07

3.3.4 Overburden Drill Waste

Glacial till and boulders that are removed as part of the trenching process are stockpiled and placed in the hole at the completion of trenching operations. There are no developed soils at any of the proposed trench areas.

3.3.5 Bulk Metal Waste

Bulky metal waste may result from damaged drill or equipment components. These items are collected and flown to Iqaluit where they are taken to the metals collection at the Iqaluit landfill.

3.4 Liquid Wastes

3.4.1 Grey Water

Grey water is passed through a wooden box with a gravel and sand screen then into a hole in the ground. Grey Water at the Discovery Camp has been released into a low lying area at the southwest corner of the camp since the camps initial construction, as authorized by the Inspector.

3.4.2 Sewage

Sewage is collected in Pacto toilet bags and incinerated in the A400 incinerator, or alternative incinerator as required. In the future incinerator toilets may be utilized. Ash produced by incinerator toilets will be combined with the main incinerator ash and sent to an appropriate authorized hazardous waste handler such as Nunatta Environmental. A historical privy exists at the Discovery camp and is occasionally used as needed.

3.5 Construction/Exploration Waste

Small projects or camp maintenance activities may generate waste including; scrap metal, wood waste, plastic waste or electrical waste. Scrap metal waste will be collected and shipped off-site and taken to the Iqaluit Landfill. Wood waste will be cut-up and used in incineration. Wood waste from demolition activities will be treated in accordance with the Chidliak Exploration Project Abandonment and Restoration Plan. Electrical waste will have batteries removed and be shipped off-site and sorted then treated as hazardous. Plastic wastes will be treated as non-hazardous and removed to the Iqaluit Landfill.

3.6 Waste Storage

Project waste will be brought back to Discovery Camp for temporary storage before being shipped off-site. Domestic and Pacto waste will be taken to the incinerator immediately after it has been generated for daily incineration. Wood that can be used as stock will be taken to the incinerator pad. Wood will be placed at a suitable location for preparation to be shipped off-site. Hazardous Waste will be consolidated and stored within secondary containment. A designated Hazardous Waste Storage Area is currently in the works and will be outlined in future versions of this plan. Currently Hazardous Waste is stored at the large maintenance tent, or within a storage shed located next to the generator shed. During accumulation Hazardous Waste disposal bins may also be located within common areas such as the kitchen/office (used batteries) or dry (sharp items). Waste glass, pop, and tin cans will be consolidated and stored within a closed container or building to prevent the attraction of wildlife until they are shipped offsite.

4 WASTE DISPOSAL

4.1 Incineration

Incinerators are used for disposal of non-hazardous waste. Incinerators are used on as needed basis during periods when the camp is operational.

Discovery Camp utilizes an Inciner8 A400 incinerator with a 1300^{o}C incineration temperature. The Model A400X incinerator has a 14' gauge aluminized steel jacket and is refractory lined. It consists of a lower Main Chamber with an upper Secondary Chamber.

Domestic waste is incinerated as it is generated. Empty fuel drums are de-headed, decanted, and aerated. The drums are then covered and used to store incinerator ash. Incinerator ash once collected is sent to Nunatta Environmental Services (Waste Handler #NUR-300002) for testing and disposal.

4.2 On-Land Sump

On-the-land sumps are utilized for the disposal of grey water and drill cuttings. These materials are non-hazardous and are situated in designated areas away from drinking water sources.

4.3 Iqaluit Landfill

De Beers holds an Iqaluit Business Licence and is authorized to use the Municipal Landfill for the deposit of non-hazardous waste. Tipping fees are charged on waste products with invoices issued at the Landfill Kiosk. Contact for questions at 867-979-5630

4.4 Hazardous Waste Facility

Hazardous wastes will be transported off-site and transferred to an authorized waste disposal company, such as Nunatta Environmental. The authorized handler will test the material as required and select appropriate disposal methods. Most hazardous waste will be transported out of Nunavut to an authorized final disposal location.

4.5 Seasonal Camp Closure

During field programs domestic waste is incinerated, and other waste is consolidated and flown out. At the end of the seasonal field program waste is removed to Iqaluit for disposal either with a Certified Waste Manager or at the local landfill. Wood waste is piled at a single location and burned. There is limited vegetation at site and the burn pile will be located on gravel or cobbles. Any Chidliak Project camp burning will not occur within 31 meters of the high-water mark of a waterbody, and consideration is taken to avoid disturbance of wildlife or vegetation. Domestic waste and sewage is incinerated daily. Benign waste like scrap steel, is accumulated and flown out for disposal or resale in Iqaluit. Hazardous waste is accumulated and flown to Iqaluit. Domestic or hazardous waste will not be left on site following completion of the seasonal field programs. Closure waste will be handled in accordance with the Chidliak Exploration Project Abandonment and Restoration Plan and Waste Management Plan.

5 CONTACTS

Table 2 Waste management related contact information

External Contact	Description	Telephone
De Beers Environment & Permitting Manager	Compliance, Permitting, Environment (Sarah McLean)	1-867-688-9227
De Beers Chidliak Coordinator	Camp Operations (David Willis)	1-604-836-3284
De Beers Permitting Coordinator	Permitting, Reporting, Monitoring (Chad Corson)	1-249-377-4445
CIRNAC	Resource Management Officer (Joseph Monteith)	1-867-975-1787
Environment Canada	Operations Manager (Curtis Didham)	1-867-975-4644
Nunatta Environmental Services Waste Handler #: NUR-300002	Spill response (Jim Wilson, VP)	Office: 1-867-979-1488 Cel: (867) 222-4111
Government of Nunavut	24 Hour Spill Report Line	1-867-920-8130 (Iqaluit) Email: spills@gov.nt.ca.