

APPENDIX A

GLOSSARIES

Appendix A.1

Glossary of Terms and Definitions

Appendix A.2

List of Acronyms, Abbreviations, Units, and Symbols

Appendix A.1. Glossary of Terms and Definitions

Abandonment	The permanent dismantlement of a facility so it is permanently incapable of its intended use. This includes the removal of associated equipment and structures.
Acid Rock Drainage (ARD)	The production of acidic leachate, seepage or drainage from underground workings, ore piles, waste rock, Processed Kimberlite, and overburden that can lead to the release of metals to groundwater and/or surface water during the life of the mine and after closure.
Active Closure	A phase in the mine life where closure and reclamation activities are being executed, in accordance with the FRCP.
Active Layer	The layer of ground above the permafrost which thaws and freezes annually.
Advanced Exploration	A phase in the mine life when the undertaking of activities at the site requires that the proponent prepare a CRP, and/or acquire a Type A or Type B water license and land use permit in order to carry out the proposed activities.
Backfill	Material excavated from a site and reused for filling a surface or underground void created by mining or construction activities.
Baseline	A surveyed condition and reference used for future surveys.
Bedrock	The body of solid rock that underlies unconsolidated gravel, soil or other material.
Benthic Invertebrate	Invertebrate organisms living at, in or in association with the bottom substrate of lakes, ponds and streams. Examples of benthic invertebrates include some aquatic insect species (such as dragonfly larvae) that spend at least part of their life stages dwelling on bottom sediments in the waterbody. Many benthic invertebrates are major food sources for fish and can be used as indicator species for assessing water quality.
Biodiversity	The variety of plants and animals that live in a specific area.
Borehole	A circular hole made by boring; a deep vertical hole of small diameter, such as a shaft, a well (an exploratory well or a water well), or a hole made to ascertain the nature of the underlying formations, to obtain samples of the rocks penetrated, or to gather other kinds of geologic information
Care and Maintenance	A phase in the mine life when production has ceased and the site undergoes temporary suspension, in accordance with the ICRP, and mine production permits.

Contaminant	Any physical, chemical, biological or radiological substance in the air, soil or water that has an adverse effect. Any chemical substance with a concentration that exceeds background levels or which is not naturally occurring in the environment.
Dewatering	Remove water from Processed Kimberlite prior to disposal; or removal of water from underground mine.
Diabase	A dark-gray to black, fine-textured igneous rock composed mainly of feldspar and pyroxene.
Discharge	Direct release of any water or waste to the receiving environment.
Ecozone	An area at the earth's surface representative of large and very generalized ecological units characterized by various abiotic (nonliving) and biotic (living) factors.
Effluent	Liquid discharge from all site water management facilities
Environmental Assessment (EA)	The totality of the Mackenzie Valley Environmental Impact Review Board (MVEIRB) Public Registry as established under the authority of Part 5 of the MVRMA for Licence application. This includes everything that was submitted by De Beers Canada Mining Inc. to the MVEIRB, the scope of which is consistent with the Water Licence application.
Erosion	Physical wearing away of rock, soil or other surface material by water, rain, waves, wind or ice. The process may be accelerated by human activities.
Esker	Glaciofluvial landform that occurs when meltwater deposits are left behind after glacier melts, resulting in long winding ridges of sediment.
Extended Care and Maintenance (ECM)	A phase in the mine life where a mine in temporary suspension begins to plan/ prepare for the execution of closure activities. An FCRP is prepared and submitted at this time to describe the proposed closure activities, including any requirements to amend mine production permits.
Fish Habitat	Areas used by fish for spawning, nursery, rearing, foraging and overwintering.
Footprint	The proposed development area that directly affects the soil and vegetation components of the landscape.
Granitoid	Rocks with a composition the same as, or similar to granite.
Groundwater	Water that occupies pores and fractures in rock and soil below the ground surface.
Guidelines	The Guidelines for Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories as written by the AANDC et al. (2013).
Habitat	The place where an animal or plant naturally lives and grows.

Kimberlite	A type of rock that formed deep within the Earth and travelled explosively up towards the Earth's surface, in the form of pipes or dykes. Some, but not all, kimberlites contain diamonds.
Landfill	Facility designated and approved to permanently contain inert solid waste materials.
Landfarm	Area where hydrocarbon-contaminated soils from spills will be deposited for bioremediation.
Littoral Zone	The zone in a lake that is closest to the shore. It includes the part of the lake bottom, and its overlying water, between the highest water level and the depth where there is enough light (about 1% of the surface light) for rooted aquatic plants and algae to colonize the bottom sediments.
Long Term Active Care	The requirement for sustained monitoring and maintenance of active facilities, for more than 25 years into the post closure phase
Metal Leaching	Release of metals under neutral or alkaline conditions, seepage or drainage from underground workings, pits, ore piles, waste rock, Processed Kimberlite, and overburden in either disturbed or undisturbed conditions during the life of the Snap Lake Mine and after closure.
Metavolcanics	Volcanic rocks that have been modified by metamorphic processes.
Mine	The Snap Lake Mine, including all infrastructure and activities relating to its development and operations
Mine Production	A phase in the mine life when mining activities are ongoing, and site operations are undertaken in accordance with an approved water license, land use permit and ICRP.
Mine Contact Water	Groundwater, surface water, runoff or any water that has come into contact with mine materials, such as any underground workings, waste rock, processed kimberlite, etc.
Monitoring	Observing the change in geophysical, hydrogeological, geochemical or geotechnical measurements over time.
No Net Loss	A term found in Canada's Fisheries Act. It is based on the fundamental principle of balancing unavoidable losses of fish habitat with habitat replacement on a project-by-project basis in order to prevent depletion of Canada's fisheries resources.
North Pile	Above ground facility designated for the storage of Processed Kimberlite and other waste materials.
Passive Long Term Care	Occasional monitoring, coupled with infrequent maintenance or repairs, that takes place following reclamation in the post closure phase of the mine site.

Permafrost	Ground that remains at or below zero degrees Celsius for a minimum of two consecutive years.
Piezometer	An instrument used to monitor pore water pressure.
Post Closure	A phase in the mine life where physical works relating to closure and reclamation have been completed and the monitoring programs described in the FRCP are conducted until monitoring results demonstrate that closure criteria have been achieved.
Potentially Acid Generating (PAG) Rock	Rock that has the capability to produce acidic leachate that can lead to the release of metals to groundwater or surface water during the life of the mine and after closure.
Processed Kimberlite	<p>Material rejected from the process plant after the recoverable minerals have been extracted. Typically, present in one of the following forms:</p> <p>Coarse Processed Kimberlite – means the material, generally 1.5 mm to 6 mm in diameter, rejected from the process plant after the recoverable diamonds have been extracted.</p> <p>Fine Processed Kimberlite – means the material, generally <0.125 mm in diameter, rejected from the process plant after the recoverable diamonds have been extracted</p> <p>Grits Processed Kimberlite – means the material, generally between 0.125 mm and 1.5 mm in diameter, rejected from the process plant after the recoverable diamonds have been extracted.</p> <p>Paste – means a non-segregating, non-bleeding mixture with a high solids content, Water, and possibly cement and/or other additives. The solids content may consist of Coarse, Grits, and Fine fractions of Processed Kimberlite.</p> <p>Slurry – means a mixture of Fine Processed Kimberlite and Water that exhibits liquid-like characteristics and has lower solids content relative to Paste. It is pumped from the process plant and placed in the North Pile.</p>
Progressive Reclamation	Actions that can be taken during mining operations before permanent closure, to take advantage of cost and operating efficiencies by using the resources available from mine operations to reduce the overall reclamation costs incurred. It enhances environmental protection and shortens the timeframe for achieving the reclamation objectives and goals.
Reclamation	Process of reconvertng disturbed land to its former or other productive uses.
Regrade	The process of shaping the land surface to meet objectives such as positive drainage or matching surrounding landforms.
Relinquishment	Point in time when all closure criteria have been achieved and the ownership of the site can be returned to the Crown.

Seepage	Any water which passes through or under a dam or other structure designed to contain water or waste including ore stockpiles and waste rock piles.
Surface Water	Water exposed on the surface of the earth including natural water bodies such as rivers, streams, brooks, ponds and lakes, as well as artificial watercourses, such as irrigation, industrial and navigation canals, in direct contact with the atmosphere.
Talik	A zone of unfrozen ground that occurs in a permafrost area. Taliks commonly occur around and underneath lakes and water courses, and can be closed (not fully penetrating the permafrost layer) or open (fully through the surrounding permafrost).
Waste Rock	All unprocessed rock materials that are produced as a result of mining operations.
Wastewater	Water generated by site activities or originates on-site that requires treatment or any other water management activity.
Water Licence	Type A Water Licence MV2011L2-0004, issued by the Mackenzie Valley Land and Water Board in accordance to the Act, to De Beers Canada Inc. for the Snap Lake Mine.

Appendix A.2. List of Acronyms, Abbreviations, Units, and Symbols

LIST OF ACRONYMS AND ABBREVIATIONS

AAAQG	Alberta Ambient Air Quality Guidelines
AANDC	Aboriginal Affairs and Northern Development Canada
AAQS	Ambient Air Quality Standards
ABA	Acid Base Accounting
AEMP	Aquatic Effects Monitoring Program
AEP	Advanced Exploration Program
AN	Ammonium Nitrate
ANFO	Ammonium Nitrate Fuel Oil
AQEMMP	Air Quality and Emissions Monitoring and Management Plan
ARD	Acid Rock Drainage
BSP	Bulk Sample Pad
CDA	Canadian Dam Association
CISQG	Canadian Interim Sediment Quality Guidelines
C&M	Care and Maintenance
CCME	Canadian Council of Ministers of the Environment
CRP	Closure and Reclamation Plan
CWQG	Canadian Water Quality Guideline
De Beers	De Beers Canada Inc.
DFO	Fisheries and Oceans Canada
DIAND	Department of Indian and Northern Affairs Canada
DO	Dissolved Oxygen
EA	Environmental Assessment
EAR	Environmental Assessment Report
ECM	Extended Care and Maintenance
ELC	Ecological Land Classification
EMS	Environmental Management System

EQC	Effluent Quality Criteria
FCRP	Final Closure and Reclamation Plan
FoS	Factor of safety
GNWT	Government of the Northwest Territories
ICRP	Interim Closure and Reclamation Plan
INAC	Indigenous and Northern Affairs Canada
INAP	International Network for Acid Prevention
ISO	International Standards Organization
LOM	Life of Mine
LSA	Local Study Area (size of area may vary based on focus of study)
LUP	Land Use Permit
MDMER	Metal and Diamond Mining Effluent Regulation
MEND	Mine Environment Neutral Drainage
Mine	Snap Lake Mine
ML	Metal Leaching
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVLWB	Mackenzie Valley Land and Water Board
NAAQ	National Ambient Air Quality
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NP	North Pile
NPRI	National Pollutant Release Inventory
NRC	Natural Resources Canada
NWT	Northwest Territories
PAG	Potentially Acid Generating
PEL	Probable effects level
pH	Acidity or alkalinity of a solution
PK	Processed Kimberlite
PKC	Processed Kimberlite Containment
PLC	Public limited company

PM _{2.5}	Particulate matter nominally less than or equal to 2.5 µm (micrometres) in aerodynamic diameter
PM ₁₀	Particulate matter nominally less than or equal to 10 µm (micrometres) in aerodynamic diameter
PWSC	Perimeter water control structures
PWTP	Potable water treatment plant
QA/QC	Quality Assurance and Quality Control
RSA	Regional Study Area (size of area may vary based on focus of study)
RRP	Reclamation Research Plan
SNP	Surveillance Network Program
SO ₂	Sulphur dioxide
SOG	Slab-on-grade
SSWQO	Site specific water quality objectives
STP	Sewage Treatment Plant
SW	Site Wide
TDS	Total Dissolved Solids
TSM	Towards Sustainable Mining
TSP	Total Suspended Particulates
TSS	Total suspended solids
UG	Underground
VEC	Valued Ecosystem Component
VMP	Vegetation Monitoring Program
Water Licence	Type A Water Licence (MV2011L2-0004)
WEMP	Wildlife Effects Management Plan
WMP	Water Management Pond
WOE	Weight of evidence
WSCC	Workers' Safety and Compensation Commission
WTP	Water Treatment Plant
WWHPP	Wildlife and Wildlife Habitat Protection Plan

LIST OF UNITS AND SYMBOLS

%	percent
°	degree
°C	degrees Celsius
cm	centimetre
d	day
ft	foot/feet
g	grams
g/m ²	grams per square metre
g	peak ground acceleration (g-force)
ha	hectare
L	litre
kg	kilogram
km	kilometre
km ²	square kilometre
kt/yr	kilotonnes per year
m	metre
m/s	metres per second
masl	metres above sea level
ML	million litres
Mt	million tonnes
m ⁻¹	per metre
m ²	square metre
m ³	cubic metre
m ³ /d	cubic metre per day
m ³ /s	cubic metre per second
mm	millimetre
ppm	parts per million
s	second
t	tonne (1,000 kg)

t/d	tonnes per day
wt%	weight percent
mg/L	milligrams per litre
mg-N/L	milligrams as nitrogen per litre
$\mu\text{g}/\text{m}^3$	micrograms per cubic metre
$\mu\text{g}/\text{L}$	micrograms per litre
μm	micrometres