

Mackenzie Valley Land and Water Board 7th Floor - 4922 48th Street P.O. Box 2130 YELLOWKNIFE NT XIA 2P6 Phone (867) 669-0506

FAX

December 19, 2016

File: MV2016C0030 & MV2013L2-0005

(867) 873-6610

Email: rmoore@kennadydiamonds.com

Mr. Rory O. Moore, President and CEO Kennady Diamonds Inc. #900-999 West Hastings St. Vancouver BC V6C 2W2

Dear Mr. Moore:

Preliminary Screening Determination Advanced Exploration - Kennady North Project

The Mackenzie Valley Land and Water Board (the MVLWB or Board) met on December 19, 2016 to make a determination on the Preliminary Screening of your Applications for new Land Use Permit MV2016C0030 and amendment to Water Licence MV2013L2-0005.

The Board is satisfied that Preliminary Screening of the Applications has been completed in accordance with section 125 of the MVRMA. The Preliminary Screening Report, with Reasons for the Board's Decision, is attached.

If you have any questions or concerns, please contact Julian Morse at (867) 766-7453 or email jmorse@mvlwb.com.

Yours sincerely,

Violet Camsell-Blondin MVLWB, A/Chair

Copied to: Distribution List

Attached: Preliminary Screening Report

Preliminary Screening Report Form

Preliminary screener: MVLWB Reference / File number: MV2013L2-0005 MV2016C0030 TITLE: Advanced Exploration, Kennady North Property, NT ORGANIZATION: Kennady Diamonds Inc. MEETING DATE: December 19, 2016		EIRB Reference number:	
Type of Development: (CHECK ALL THAT APPLY)		Requi	d, EIRB Ref. # res permit, licence, or authorization not require permit, licence, or authorization

Background

Numerous screenings have occurred for mineral exploration in the Kennady North Project in the past, leading up to this current screening. On September 28, 2001, the Board screened an application from De Beers Canada Exploration Ltd. for mineral exploration activities from the existing Bob Camp on Long Lake, including a helicopter-supported core exploratory drilling program, till sampling, airborne and ground geophysics, mapping, trenching, and fuel storage (MV2001C0066). This permit was assigned to GGL Diamond Corporation (GGL) in 2004. Additional claims were added to the scope of the permit and screened on April 6, 2006. On November 7, 2008, the Mackenzie Valley Land and Water Board (the Board or MVLWB) screened GGL's application for a new land use permit (MV2008C0021). The 2008 screening covered the same general exploration program at the existing Bob Camp on Long Lake including helicopter-assisted sampling, bulk sampling, diamond drilling and fuel storage. Additional claims were also added to the scope of the project at that time. MV2008C0021 was assigned to Kennady Diamonds Inc. (KDI) from GGL in 2013.

Does not require permit, licence, or authorization

In 2012, KDI applied for a second mineral exploration authorization in the Kennady North Project area (MV2012C0010). The activities included in the June 7, 2012 preliminary screening included prospecting and glacial mapping, geochemical and geophysical surveys, fuel storage, operation of a camp for up to 15 people, and diamond drilling of approximately 25 holes per season from the current Kelvin Camp location. On February 27, 2014, a land use permit and type B water licence application (MV2013C0023 and MV2013L2-0005) encompassing the exploratory wok from the Bob and Kelvin Camps were screened together and included an expanded diamond drilling program, trenching, explosives storage, geophysical surveys and sampling, winter road construction and maintenance, and fuel storage. On January 7, 2016, the project was screened again to reflect amendments including expanded drilling and trenching programs, geochemical characterization studies, site winter road construction and maintenance, enlarged exploration camps (Bob and Kelvin), and additional fuel storage.

On September 27, 2016 KDI applied for a new Type A Land Use Permit MV2016C0030 and an amendment to their existing Type B Water Licence MV2013L2-0005 to expand exploration activities at the Kennady North Project from enhanced to advanced exploration in order to obtain the information necessary to complete a Feasibility Study for the Kennady North Project. These activities include bulk sampling and valuation of the Kelvin kimberlite and further delineation of the Faraday kimberlites. The additions to the existing operation require screening by the Board in accordance with subsection 124(1) of the Mackenzie Valley Resource Management Act.

Previously screened items have been included in this screening for reference, to ensure all ongoing and proposed activities are included in this current screening of the project. These items are denoted as being previously screened and are listed in italics.

Project Summary

Previously Screened Activities

Mineral Exploration

- Diamond drilling program consisting of up to 250 holes per year
- Geotechnical drilling for country rock characterization and baseline characterization of environment.
- Large diameter drilling and/or Trenching to achieve up to 1200 tonnes of bulk sample material
- Use and storage of explosives (<500kg) for trenching
- Geophysical surveys
- Geochemical sampling
- Waterless RC drilling to test glacial stratigraphy
- Water use of up to 299 metres cubed per day for camp operation and to supply drills/cyclone separation unit

Winter Road Construction and Maintenance

Construction and maintenance of winter road routes for logistical support, spurring off of the Tibbitt to Contwoyto Winter Road (east side of Mackay Lake) Kelvin/Farraday, Doyle Sill, MZ claims, and Bob camp.

Camp

- Existing camp for -50-75 persons to be used (Bob lake camp)
- Expansion and operation of existing camp for 50-75 persons near Kelvin Lake (Total of 150 persons on site between the two camps) Approximately 50 structures including sleep tents, core shacks, kitchen, sea-cans, work-shops. Waste mgmt by off-site disposal, and incineration of combustible waste

<u>Fuel</u>

- 250,000 L Diesel Fuel
- 20,000L Gasoline
- 500 X 205 L Aviation Fuel (102,500L)
- 50 X 45kg Propane
- 2000 L Lubricants

Equipment

The following previously screened equipment (or equivalents) will be used for this operation:

Type & Number	Size	Proposed Use
5 x Boyles 25A/37	8,600 kg ea. (including rods & casing)	Drill testing potential kimberlite targets and to collect mini bulk sample of kimberlite material
1 - 2 x Bell 407 helicopter	1,300 kg ea.	Drill & crew movements
1-2 x Hornet dry RC drilling rig	4,350 kg	Drill testing glacial stratigraphy
2 x Inciner8 dual-chamber incinerator	1,000 kg	Disposal of combustible waste
1-2 x Solids Removal Equipment with built in generator (25kW)	3000 kg ea.	Self-contained cuttings removal equipment.
15 x Skidoo	200 kg ea.	Camp and drill support
2 x ATV	300 kg	Camp support
2 x 15 kW diesel generator	450 kg	Electrical power supply
2 x 33 kW diesel generator	800 kg	Electrical power supply
5 x 5 kW gas generator	100 kg ea.	Electrical power supply backup
5 x water pumps	25 kg ea.	Camp and diamond drill water
3 x loaders	6800 kg ea.	Ice road construction and maintenance
4 x Snow cat	6400kg	Used to move drills, materials and personnel around the property as well used to build and maintain ice roads and ice airstrips
10 x Pickup truck	4000 kg ea.	To move people along proposed ice
2 x Plough truck	17700 kg	roads on the property Ice road construction and
2 X T Tought truck	77700 kg	maintenance
3 x Water truck	11250 kg	Ice road construction and
		maintenance
2 x Grader	21700 kg	Ice road construction and
		maintenance
2 x Dozer	8500 kg	Ice road construction and maintenance
2 x skid-steers	900kg	Bulk sample loading and ice strip maintenance
15 x Transport tractor-trailer	16000 kg ea. empty	To transport freight to and from the
combinations		property along ice roads

1 x portable compressed air rock drill with gasoline generator or equivalent	900kg	Used to drill holes to set explosives for blasting rock for bulk sample trench
1 x excavator	8400 kg	To move material for trench bulk sample
2-3 x Larger diameter RC drilling rig	8,000 kg	Drill testing kimberlite targets and recover large kimberlite bulk samples
2 x snow-making machinery	600 kg ea.	Ice road construction and maintenance

New Activities

KDI are applying to move from enhanced to advanced exploration in the Kennady Project area. These activities include bulk sampling and valuation of the Kelvin kimberlite and further delineation of the Faraday kimberlites. Additional mineral claims and leases have been added. KDI has specifically requested the following additions to its existing operations:

- increase in extraction from 1,200 to 5,000 tonne/yr bulk sample (an increase of 3,800 tonnes/yr);
- · construction and operation of up to two underground declines to access the Kelvin and Faraday kimberlite deposits for bulk sampling;
- construction and operation of a multi-purpose laydown and camp area (approximately 5 ha);
- construction and operation of a pioneer all-season airstrip (approximately 1,650 m by 45 m) to accommodate larger aircraft for workers and resupply;
- construction and operation of limited all-season roads linking the winter road to the laydown, airstrip, declines, and drilling locations at the Faraday and Kelvin deposits;
- construction and operation of a new 140-person mobile camp on the laydown area and consolidation of existing Kelvin Camp modules with this new camp (an increase of camp capacity by 100 persons for a total of approximately 250 persons);
- quarrying and/or the use of cut and fill to obtain material for roads, laydown area and airstrip as necessary;
- increase in use of explosives (including mixing and storage) for quarrying and construction of the decline;
- installation and operation of a portable bulk sample processing plant (< 100 tonnes/d); and,
- increase to the size and quantity of various types of equipment (e.g., trucks, loaders, underground equipment) as well as the amount of fuel storage allowed on site in order to accommodate the proposed activities.

Additional Fuel

- 2,000,000 L Diesel (2,250,000 L total)
- 25 x 45kg Propane (75 x 45kg total)
- 21,000 L Lubricants (23,000L Lubricants total)

Additional Equipment

The following additional equipment (or equivalents) will be used for this operation:

Type & Number	Size	Proposed Use
2 x 20 tonne track excavator	22,000 kg	For site development (e.g., pads, roads, airstrip, decline)
(CAT 320 or equivalent) 2 x 50 tonne track excavator (CAT 345 or equivalent)	45,000 kg	For site development (e.g., pads, roads, airstrip, decline)
4 x 40 tonne articulated haul truck (CAT740 or equivalent)	33,000 kg	For site development (e.g., pads, roads, airstrip, decline)
2 x tracked bulldozer (CAT D7 or equivalent)	26,000 kg	For site development (e.g., pads, roads, airstrip, decline, snow clearing)
1 x front-end wheel loader (CAT 966 or equivalent)	17,000 kg	For site development (e.g., pads, roads, airstrip, decline)
1 x motor grader (CAT 140m or equivalent)	20,000 kg	For site development (e.g., pads, roads, airstrip, decline)
1 x Vibratory compactor (CAT CS-56 or equivalent)	12,500 kg	For site development (e.g., pads, roads, airstrip, decline)
2 x rock drill (Sandvik DX800 or equivalent)	14,900 kg	For site development (e.g., pads, roads, airstrip, decline)
1 x mobile aggregate crushing plant	40,000 kg	For site development (e.g., pads, roads, airstrip, decline)
1 x Incinerator (Ecowaste Solutions CA- 100 or equivalent)	6,500 kg	For Larger Capacity Camp
1 x Mechanics Service Truck (F550 or equivalent)	3,500 kg	Servicing or Repairing Equipment

1 x Fuel & Lube Truck (Kenworth T800 or equivalent)	8,400 kg	Fueling and Lubrication of Equipment
2 x Tool Carrier / Forklift (CAT 930 or equivalent)	14,000 kg	Snow clearing, freight handling, bulk sample bag handling, AN bag handling
2 x skid steer (CAT 252 or equivalent)	3,600 kg	Quarry stemming and small materials handling, bulk sample bag handling
6 x 350 k BTU Heaters (Frost Fighters IDF350 or equivalent)	200 kg each	Localized heat
6 x Light Plants (Ingersoll Rand L6 or equivalent)	400 kg each	Localized lighting
4 x Light Trucks (Ford F350 or equivalent)	2,700 kg each	Additional transportation for supervision, crews and site inspections, ambulance
1 X 15 to 30 passenger bus (Micro Bird G5 or equivalent)	5,000 kg	Crew Transportation
1 x Blasters Trucks (Ford F350 or equivalent)	2,700 kg each	Truck dedicated to explosives handling per regulations
1 x Roll off truck (Western Star 4900 or equivalent)	8,000 kg	Multi-use truck with roll on and roll off attachments (potable water tanks, waste water tank, waste bin etc.)
1 x Crane (Tadano GR550XL or equivalent)	14,000 kg	Winter Road Offload, Erecting Bulk Sample Plant, shops, camp and major equipment repairs
1 x HDPE Pipe Fusing Machine (McElroy Rolling 250 or equivalent)	260 kg	Water line fusing
3 - 6 x 700kW to 350 kW diesel fired generators	30,000kg	Primary power supply for camp and laydown pad infrastructure
2 x Underground LHD (Load, Haul Dump - Atlas Copco ST1030 or equivalent)	26,300 kg	Scoop for mucking after basting
2 x Underground haul truck (Atlas Copco MT20 or equivalent)	28,830 kg	Moving material into and out of the decline
1 x Underground jumbos (drills - Atlas Copco Boomer 282 or equivalent)	18,300 kg	Ground support installation
1 x Underground Drill (Atlas Copco Simba ME7 or equivalent)	17,000 kg	Drilling for blasts
1 x Scissor Deck (J&S SLX6100 or equivalent)	15,400 kg	Working platform for installing ground support
2 x Underground Vehicle (Toyota Landcruiser or equivalent)	3,000 kg	Decline access crew vehicle, repair vehicle, blasters vehicle
2 x Utility Vehicle (Kubota RTV X1140 or equivalent)	1,075 kg	Decline Utility Vehicle
1 x Mine Ventilation System	800 kg	Decline ventilation
2 x 350kw to 500kw diesel fired generators	20,000kg	Decline power supply

Scope

The proposed scopes for the new land use permit MV2016C0030 and amended water licence MV2013L2-0005 are as follows:

MV2016C0030:

- Advanced exploration and associated activities in the Kennady North Project Area including:
 - a. Construction, maintenance and remediation of winter site access roads;
 - b. Quarry development;
 - c. Use and storage of explosives;
 - d. Use of equipment, vehicles and machinery
 - e. Fuel storage;
 - f. Construction and/or operation, maintenance, and remediation of two exploration camps (Bob and Kelvin);
 - g. Construction, maintenance, and remediation of all-season site roads;
 - h. Construction, operation, maintenance, and remediation of an all-season airstrip and multi-purpose lay-down areas;
 - i. Construction, maintenance, and remediation of up to two declines;
 - j. Diamond drilling, large diameter diamond drilling, and trenching; and
 - k. Installation, operation, and maintenance of a bulk sample process facility.

MV2013L2-0005:

Use of Water and disposal of Waste for industrial undertakings for advanced mineral exploration and associated uses in the Kennady North Project Area, Northwest Territories. This undertaking is described in the Complete Application and includes the following:

- i. Water withdrawal for camp use, industrial use, winter road Construction, and dust suppression;
- ii. Diamond drilling, large diameter diamond drilling, and trenching;
- iii. Quarry development;
- iv. Construction, operation, maintenance, and closure of Sewage Disposal Facilities;
- v. Construction, operation, maintenance, and closure of all-season site roads;
 vi. Construction, operation, maintenance, and remediation of an all-season airstrip and multi-purpose lay-down areas;
- vii. Deposit of treated Sewage and Greywater;
- viii. Deposit of Greywater into a Sump (Bob Camp);
- ix. Deposit of Drill Cuttings into a Sump;x. Deposit of Wastewater into a Sump;
- xi. Installation, operation, and maintenance of a bulk sample process facility;
- xii. Deposit of Tailings (Processed Kimberlite) into a Sump; and
- xiii. Management of Potentially Acid Generating (PAG) Rock.

Land Use Eligibilit	v - Section 18	Mackenzie Valle	v Land Use Re	qulations: 1	8(a)(ï
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Type of Disposition	Disposition Number(s)	
☑ Mineral Claims☐ Prospecting Permit (s)	60 mineral claims (attached)	
Mineral Leases Oil and Gas: EL/SDL/PL Quarry Permit Timber Permit Other:	22 mineral leases (attached)	
Principal Activities (related to s (CHECK ALL THAT APPLY)	scoping)	
 ☐ Construction ☐ Installation ☑ Maintenance ☑ Expansion ☑ Operation ☐ Repair ☑ Research ☑ Water Intake ☐ Other: 	 ☑ Exploration ☑ Industrial ☐ Recreation ☐ Municipal ☑ Quarry ☐ Linear / Corridor ☑ Sewage 	 ☑Decommissioning ☐ Abandonment ☐ Aerial ☐ Harvesting ☑Camp ☐ Scientific/ ☐ Solid Waste
Principal Development Compo	nents (related to scoping)	
	Movement of Vegetation	 ☑ Waste Management ☐ disposal of hazardous waste ☑ waste generation ☑ sewage ☑ disposal of sewage ☑ Geoscientific Sampling ☑ Trenching ☑ Diamond drill ☑ Borehole core sampling ☐ gravel ☐ hydrological Testing ☑ Site Restoration ☐ grubbing ☐ planting/seeding ☐ reforestation ☑ scarify ☐ spraying ☑ re-contouring ☑ Slashing and removal of vegetation ☐ Soil Testing ☑ Stream Crossing/Bridging ☑ Tunnelling/Underground ☐ Other:

NTS topographic map sheet 851, 85P, 75M, 76D, 76C	numbers:		
Latitude / longitude and UTM 62°33'00" to 64 ° 03'03" N 113°21'00" to 110 °19'43" W	system:		
Nearest community and water Lutsel K'e, Kennady Lake, Fara			
Land Status (consultation in	formation)		
☐ Free Hold/Private	○ Commissioner's/Territorial Lands	☐ Federal Crown Land	☐ Municipal Land
Transboundary/Transregiona	al Implications		
☐ British Columbia ☐ Nunavut ☐ Wek'èezhìi	☐ Alberta ☐ National Park ☐ Gwich'in	☐ Saskatchewan ☐ Inuvialuit Settlement Region ☐ Sahtu	☐ Yukon
Type of transboundary impli	cation: Impact / Effect	Development	
Public concern:(Describe.)			
Physical - Chemical Effects			
<i>Impact</i> 1) Ground Water	Mitigation		
⊠ water table alteration	January 27, 2016 (previously Sealing boreholes will mitiga	•	
	development of the quarry decline dewatering, change interruption of ground-wate impacts) in permafrost, grou be maintained to mitigate as monitoring in a water licency condition requiring submitta	and decline(s) may result in the lowers in turbidity levels in ground water or conduit flow paths by rock removendwater and surface-waters. KDI expendings in the natural eto confirm this assumption will mitig	opment and quarry development. The ering of local ground-water levels from due to blasting and quarry operations, ral, and temperature change (thermal ect that the local permafrost regime will al hydrologic system. Requiring regular ate this potential impact. Inclusion of an and updated rock management plan ential impact.
⊠ water quality changes	surrounding lands. Any drilling waste containing Spill contingency plan will ac Waste to be incinerated or fl	ted in a sump such that they do not enterprise to see the total to the removed to a	an approved facility.
	December 19, 2016: Greywater will be treated with	th sewage in a wastewater facility (Kel	vin Camp): processed kimberlite will be

Greywater will be treated with sewage in a wastewater facility (Kelvin Camp); processed kimberlite will be deposited into a quarry sump; process water will be recycled and deposited into a quarry sump; potentially acid generating (PAG) rock will be stored above-ground and eventually deposited in the quarry, the decline(s), or capped and covered in-place; if groundwater infiltrates the quarry or decline(s) it will likely be saline or high TSS; non-hazardous wastes will be incinerated on-site; hazardous wastes are stored and removed from site; large quantities of fuel will be stored on-site, and ammonia nitrate (AN) will be stored on-site.

Sewage at Kelvin Camp will be treated for discharge to land. Processed kimberlite is expected to be largely inert while the quality of process water is yet unknown, deposit into the quarry sump, however, is expected to mitigate the potential of infiltration to the surrounding environment. Classification, verification, appropriate management and regular monitoring of PAG rock will mitigate the risk of acid and metal leaching during project operations. KDI has committed to submitting an updated Rock Management Plan prior to decline development. For long-term closure, PAG rock will be isolated and sequestered under water (quarry), underground (decline), or under cap and cover. Any groundwater infiltration in the decline(s) will be captured and transferred to the quarry sump. Sump waters will be tested regularly for total suspended sediments, total dissolved solids, pH, major ions, ammonia, nitrate, nitrite and metals and treated to remove residual hydrocarbons prior to closure or discharge, if necessary. Ash from incineration will be back-hauled for disposal with all hazardous wastes generated on-site. Fuel storage locations will be within a lined area capable of holding 110% of the largest tank capacity, and an AN storage pad with space for 400 tonnes of AN will be constructed to hold lined 1.5 tonne totes. Including a condition

requiring update and re-submittal of the Explosives MGMT Plan in a Licence will ensure mitigation of this potential impact.

A Spill Contingency plan will address the response in the event of any unauthorized discharges and preventative measures to avoid any accidental releases to the environment, Rock Management and Quarry Management Plans will address contact water management, and a monitoring plan will identify regular monitoring required to confirm the isolation of impacted waters. Inclusion of effluent quality criteria (EQCs) in a licence for all direct discharges will mitigate potential impacts.

Exposure of underground surfaces could result in temperature changes (thermal impacts) in permafrost, groundwater and surface-waters. KDI expect that the local permafrost regime will be maintained to

mitigate against excessive changes in the natural hydrologic system. Requiring regular monitoring in a licence to confirm this assumption and requiring a contingency plan in a licence to respond to unforeseen

☐ infiltration changes

□ N/A

Impact

⊠ flow or level changes
 □

Surface Water

January 27, 2016 (previously screened activities):

changes will mitigate this potential impact.

The total quantity of water withdrawn from all water bodies shall not exceed 299 cubic metres per day.

Total water withdrawal condition will mitigate this impact.

December 19, 2016:

December 19, 2016:

Mitigation

Including a condition in a licence requiring that the total quantity of water withdrawn from all water bodies shall not exceed 299 cubic metres per day will mitigate this potential impact. KDI has committed to ensuring that water withdrawals will remain within the 10% lake volume recommended by DFO. Process waters will flow in a closed loop system so that water can be recycled for operation of the bulk sample processing plant.

January 27, 2016 (previously screened activities):

No material or camps to be located on ice.

The Permittee shall not locate any Sump within 100 metres of the Ordinary High Water Mark of any Watercourse

The Permittee shall not use any material other than clean water and snow in the construction of ice bridges.

The Permittee shall not excavate land within 100 metres of the Ordinary High Water Mark of any Watercourse

When drilling on ice or near water, closed circuit system to be used.

Any drilling waste containing toxic substances is to be removed to an approved facility.

Drilling waste not allowed to spread to surrounding watercourses.

Sewage, waste to be disposed of as per waste management plan

Fuel caches and refuelling areas must have adequate secondary containment.

Spill contingency plan, spill kits will address potential spills

December 19, 2016:

Greywater will be treated with sewage in a wastewater facility (Kelvin Camp); processed kimberlite will be deposited into a quarry sump; process water will be recycled and deposited into a quarry sump; potentially acid generating (PAG) rock will be stored above-ground and eventually deposited in the quarry, the decline(s), or capped and covered in-place; if groundwater infiltrates the quarry or decline(s) it will likely be saline or high TSS; non-hazardous wastes will be incinerated on-site; hazardous wastes are stored and removed from site; large quantities of fuel will be stored on-site, and ammonia nitrate (AN) will be stored

Sewage at Kelvin Camp will be treated for discharge to land. Processed kimberlite is expected to be largely inert while the quality of process water is yet unknown, deposit into the quarry sump, however, is expected to mitigate the potential of infiltration to the surrounding environment. Classification, verification, appropriate management and regular monitoring of PAG rock will mitigate the risk of acid and metal leaching during project operations. KDI has committed to submitting an updated Rock Management Plan prior to decline development. For long-term closure, PAG rock will be isolated and sequestered under water (quarry), underground (decline), or under cap and cover. Any groundwater infiltration in the decline(s) will be captured and transferred to the quarry sump. Sump waters will be tested regularly for total suspended sediments, total dissolved solids, pH, major ions, ammonia, nitrate, nitrite and metals and treated to remove residual hydrocarbons prior to closure or discharge, if necessary. Ash from incineration will be back-hauled for disposal with all hazardous wastes generated on-site. Fuel storage locations will be within a lined area capable of holding 110% of the largest tank capacity, and an AN storage pad with space for 400 tonnes of AN will be constructed to hold lined 1.5 tonne totes. Including a condition requiring update and re-submittal of the Explosives MGMT Plan in a Licence will ensure mitigation of this potential impact.

A Spill Contingency plan will address the response in the event of any unauthorized discharges and preventative measures to avoid any accidental releases to the environment, Rock Management and Quarry Management Plans will address contact water management, and a monitoring plan will identify regular monitoring required to confirm the isolation of impacted waters. Inclusion of effluent quality criteria (EQCs) in a licence for all direct discharges will mitigate potential impacts.

☑ water quantity changes	<u>January 27, 2016 (previously screened activities):</u> The total quantity of water withdrawn from all water bodies shall not exceed 299 cubic metres per day.
	Total water withdrawal condition will mitigate this impact.
	<u>December 19, 2016:</u> Including a condition in a licence requiring that the total quantity of water withdrawn from all water bodies shall not exceed 299 cubic metres per day will mitigate this potential impact. KDI has committed to ensuring that water withdrawals will remain within the 10% lake volume recommended by DFO. Process waters will flow in a closed loop system so that water can be recycled for operation of the bulk sample processing plant.
☑ drainage pattern changes	<u>December 19, 2016:</u> Surface runoff may be temporarily diverted around the quarry prior to start-up and operation of the bulk sample processing plant and completion of the quarry sump. Erosion and sediment control practices will reduce the risk of changes to the receiving environment. The construction of infrastructure will avoid wet areas and water crossings will be constructed so as to facilitate water flow.
☑ temperature	<u>December 19, 2016:</u> Exposure of underground surfaces could result in temperature changes (thermal impacts) in permafrost groundwater and surface-waters. KDI expect that the local permafrost regime will be maintained to mitigate against excessive changes in the natural hydrologic system. Requiring regular monitoring in a licence to confirm this assumption and requiring a contingency plan in a licence to respond to unforeseer changes will mitigate this potential impact.
wetland changes/loss	
other:	
□ N/A	
Impact 3) Noise	Mitigation
⊠ noise in/near water	<u>January 27, 2016 (previously screened activities):</u> No mitigation, noise disturbance is temporary in nature.
⊠ noise increase	January 27, 2016 (previously screened activities): No mitigation, noise disturbance is temporary in nature.
	<u>December 19, 2016:</u> There is potential for noise disturbance to caribou/wildlife from blasting, and operation of heavequipment. KDI will suspend blasting operations when wildlife are observed within the danger zone prescribed for humans, to avoid hazards to caribou and other wildlife. An Aboriginal Community Monitor will be employed on site to monitor wildlife and ensure mitigation techniques are working, and suggest changes to the camp manager as required.
other:	
□ N/A	
Impact 4) Land	Mitigation
☑ geologic structure changes	December 19, 2016: Quarrying and decline development will result in changes to geologic structure directly affected by these activities. The entrance of the decline will be barricaded or sealed with rock to prevent any wildlife or person access. PAG materials may be backhauled into the decline prior to closure. The Quarry will be filled with waste rock and potentially PAG material as well, and overburden and oversize piles will be sloped and contoured. Oversize materials may be placed inside the quarry if suitable space is available to accommodate.
⊠ soil contamination	January 27, 2016 (previously screened activities): Drilling waste will be deposited in a sump such that they do not enter any body of water, or spread to surrounding lands. Any drilling waste containing toxic substances is to be removed to an approved facility. Spill contingency plan will address any potential spills. Waste to be incinerated or flown off site as per waste management plan Fuel caches and refuelling areas must have adequate secondary containment. Any parked equipment must have drip trays.

December 19, 2016:

Greywater will be treated with sewage in a wastewater facility (Kelvin Camp); processed kimberlite will be deposited into a quarry sump; process water will be recycled and deposited into a quarry sump; potentially acid generating (PAG) rock will be stored above-ground and eventually deposited in the quarry, the decline(s), or capped and covered in-place; if groundwater infiltrates the quarry or decline(s) it will likely be saline or high TSS; non-hazardous wastes will be incinerated on-site; hazardous wastes are stored and removed from site; large quantities of fuel will be stored on-site, and ammonia nitrate (AN) will be stored on-site.

Sewage at Kelvin Camp will be treated for discharge to land. Processed kimberlite is expected to be largely inert while the quality of process water is yet unknown, deposit into the quarry sump, however, is expected to mitigate the potential of infiltration to the surrounding environment. Classification, verification, appropriate management and regular monitoring of PAG rock will mitigate the risk of acid and metal leaching during project operations. KDI has committed to submitting an updated Rock Management Plan prior to decline development. For long-term closure, PAG rock will be isolated and sequestered under water (quarry), underground (decline), or under cap and cover. Any groundwater infiltration in the decline(s) will be captured and transferred to the quarry sump. Sump waters will be tested regularly for total suspended sediments, total dissolved solids, pH, major ions, ammonia, nitrate, nitrite and metals and treated to remove residual hydrocarbons prior to closure or discharge, if necessary. Ash from incineration will be back-hauled for disposal with all hazardous wastes generated on-site. Fuel storage locations will be within a lined area capable of holding 110% of the largest tank capacity, and an AN storage pad with space for 400 tonnes of AN will be constructed to hold lined 1.5 tonne totes. Including a condition requiring update and re-submittal of the Explosives MGMT Plan in a Licence will ensure mitigation of this potential impact.

A Spill Contingency plan will address the response in the event of any unauthorized discharges and preventative measures to avoid any accidental releases to the environment, Rock Management and Quarry Management Plans will address contact water management, and a monitoring plan will identify regular monitoring required to confirm the isolation of impacted waters. Inclusion of effluent quality criteria (EQCs) in a licence for all direct discharges will mitigate potential impacts.

☐ buffer zone loss

Soil compaction and settling

January 27, 2016 (previously screened activities):

Overland winter roads must have minimum of 10cm packed snow

Conditions preventing vehicular travel without snow covered surfaces, prevention of rutting will mitigate this impact.

December 19, 2016:

Site compaction will occur as a result of site development for pads, roads, airstrip, decline, etc. The area of land disturbed will be minimized where practical. At closure, the site roads and airstrip will be stripped of material to be more consistent with surrounding landforms and scarified with two-pass ripping. Overburden from the quarry site may be placed over the scarified surface to promote natural revegetation.

□ destabilization/erosion

December 19, 2016:

Permafrost melting and removal of vegetation could cause destabilization/erosion. Conditions in a land use permit requiring insulation of the ground surface beneath all structures associated with this land-use operation to prevent any vegetation present from being removed; the melting of Permafrost; and the ground settling and/or eroding will mitigate this potential impact. Conditions in a land use permit requiring installation of erosion control structures as the land-use operation progresses will mitigate this potential impact.

permafrost regime alteration

January 27, 2016 (previously screened activities):

Overland winter roads must have minimum of 10cm packed snow

Conditions preventing vehicular travel without snow covered surfaces and, prevention of rutting will mitigate this impact.

December 19, 2016:

Exposure of underground surfaces could result in temperature changes (thermal impacts) in permafrost, groundwater and surface-waters. KDI expect that the local permafrost regime will be maintained to mitigate against excessive changes in the natural hydrologic system. Requiring regular monitoring in a licence to confirm this assumption and requiring a contingency plan in a licence to respond to unforeseen changes will mitigate this potential impact. Conditions in a land use permit requiring insulation of the ground surface beneath all structures associated with this land-use operation to prevent any vegetation present from being removed; the melting of Permafrost; and the ground settling and/or eroding will mitigate this potential impact.

January 27, 2016 (previously screened activities):

Permittee is required to backfill any trenches with overburden at the end of operations

December 19, 2016:

Quarrying and decline development will result in scarring of the landscape. The entrance of the decline will be barricaded or sealed with rock to prevent any wildlife or person access. PAG materials may be backhauled into the decline prior to closure. The Quarry will be filled with waste rock and potentially PAG material as well, and overburden and oversize piles will be sloped and contoured. Oversize materials may

	be placed inside the quarry if suitable space is available to accommodate.
other:	
□ N/A	
Impact 5) Non-renewable natural resources	Mitigation
☐ resource depletion	January 27, 2016 (previously screened activities): No mitigation – removal of sample material
	<u>December 19, 2016:</u> KDI will need to apply for a quarry permit with the Government of the Northwest Territories, and pay the required royalties, prior to extracting rock.
	Decline - no mitigation – removal of sample material.
other:	
□ N/A	
Impact 6) Air/climate/atmosphere	Mitigation
☑ other: dioxins/furans	<u>January 27, 2016 (previously screened activities):</u> Dual chambered incinerator to be used to minimize air pollution from dioxins/furans.
☑ other: carbon dioxide/GHG	<u>January 27, 2016 (previously screened activities):</u> Air quality will be temporarily affected by vehicle, aircraft and equipment use – no mitigation.
	<u>December 19, 2016:</u> Air quality will be temporarily affected by additional vehicle, aircraft and equipment use. Costs associated with transport of fuel, and land use permit limits on the volume of fuel stored on site, lead to efficiencies in fuel use and limiting greenhouse gas emissions. Diesel use can be reduced by sizing generators appropriately to demand.
□ N/A	
BIOLOGICAL ENVIRONMENT	
<i>Impact</i> 1) Vegetation	Mitigation
species composition	
species introduction	
⊠ toxin/heavy accumulation	December 19, 2016: Potentially acid generating (PAG) rock will be stored above-ground and eventually deposited in the quarry, the decline(s), or capped and covered in-place. Licence conditions requiring classification, verification, appropriate management and regular monitoring of PAG rock will mitigate the risk of acid and metal leaching during project operations. KDI has committed to submitting an updated Rock Management Plan prior to decline development. For long-term closure, PAG rock will be isolated and sequestered under water (quarry), underground (decline), or under cap and cover. Requiring update and resubmittal of the Rock Management Plan will mitigate impacts associated with contact water management. Requiring monitoring in a licence to confirm the isolation of impacted waters, with a contingency plan to respond to unforeseen changes will mitigate this impact.
other: Linear Migration routes, habitat fragmentation	
□ N/A	
Impact 2) Wildlife and Fish	Mitigation
☑ effects on rare, threatened or endangered species	<u>January 27, 2016 (previously screened activities):</u> KDI has committed to minimum setbacks from identified species. Permittee is required to take all reasonable measures to prevent damage to wildlife and fish Habitat during the land-use operation.
	<u>December 19, 2016:</u> Eight species of concern were identified to potentially interact with KDI's advanced exploration program

(Grizzly bear, wolverine, Horned grebe, Peregrine falcon, Rusty blackbird, Short-eared owl, Red-necked phalarope, and Bank swallow). Barrenground caribou may also be impacted by the project. To minimize the impacts on wildlife populations, harvesting by employees and contractors at site will be prohibited, wildlife will have the right-of-way on all roads, speed limits will be enforced, wildlife presence will be communicated to employees, wildlife observations are to be reported to an on-site manager, land clearing activities will be completed outside of breeding season for migratory birds (or sweeps will be conducted prior to clearing), existing nests will not be disturbed but further nesting on infrastructure will be discouraged, wildlife fencing will be erected around the camps, any physical or chemical hazards to wildlife will be isolated and removed, camps will be kept clean and food waste frequently incinerated, staff will undergo environmental sensitivity training, feeding and harassment of wildlife is prohibited, and all incidents, raptor nests, and problem wildlife will be reported to ENR. Including conditions related to protection of wildlife habitat in a permit as per paragraph 26(1)h of the Mackenzie Valley Land Use Regulations will mitigate habitat-related impacts. KDI will suspend blasting operations when wildlife are observed within the danger zone prescribed for humans, to avoid hazards to caribou and other wildlife. An Aboriginal Community Monitor will be employed on site to monitor wildlife and ensure mitigation techniques are working, and suggest changes to the camp manager as required.

☐ fish population changes

December 19, 2016:

Fish entrainment will be mitigated by using water intake designs meeting Fisheries and Oceans Canada quidelines.

□ waterfowl population changes

January 27, 2016 (previously screened activities):

The Permittee shall not operate any vehicle or equipment within 30 metres of a known or suspected migratory bird nesting site.

December 19, 2016:

Land clearing activities will be completed outside of breeding season for migratory birds (or sweeps will be conducted prior to clearing). Including conditions related to protection of wildlife habitat in a permit as per paragraph 26(1)h of the Mackenzie Valley Land Use Regulations will mitigate habitat-related impacts.

□ population reduction

January 27, 2016 (previously screened activities):

Permittee is not allowed to move equipment or commence drilling when caribou are within 500 metres. This will help to prevent caribou/vehicle/equipment interactions.

December 19, 2016:

To minimize the impacts on wildlife populations, harvesting by employees and contractors at site will be prohibited, wildlife will have the right-of-way on all roads, speed limits will be enforced, wildlife presence will be communicated to employees, wildlife observations are to be reported to an on-site manager, land clearing activities will be completed outside of breeding season for migratory birds (or sweeps will be conducted prior to clearing), existing nests will not be disturbed but further nesting on infrastructure will be discouraged, wildlife fencing will be erected around the camps, any physical or chemical hazards to wildlife will be isolated and removed, camps will be kept clean and food waste frequently incinerated, staff will undergo environmental sensitivity training, feeding and harassment of wildlife is prohibited, and all incidents, raptor nests, and problem wildlife will be reported to ENR. Including conditions related to protection of wildlife habitat in a permit as per paragraph 26(1)h of the Mackenzie Valley Land Use Regulations will mitigate habitat-related impacts. KDI will suspend blasting operations when wildlife are observed within the danger zone prescribed for humans, to avoid hazards to caribou and other wildlife. An Aboriginal Community Monitor will be employed on site to monitor wildlife and ensure mitigation techniques are working, and suggest changes to the camp manager as required.

species diversity change

December 19, 2016:

Exposure to contaminates could impact wildlife and fish health. These potential impacts will be managed by isolating waste and hazardous materials, treating contact water where necessary, responding appropriately to any unauthorized discharges, and managing PAG/ML. There will be no direct discharges to surface waters.

□ behavioural changes

January 27, 2016 (previously screened activities):

Permittee is not allowed to move equipment or commence drilling when caribou are within 500 metres. This will help to prevent caribou/vehicle/equipment interactions.

Certain animals may avoid areas of operations due to noise/activity. This impact is temporary in nature.

December 19, 2016:

Sensory disturbances from the exploration site may contribute to avoidance of the area and thereby contribute to indirect habitat loss. Alternatively, the buildings, sounds, smells, etc. could attract wildlife causing a threat to their safety and worker safety. These impacts may have overlapping effects with the Gahcho Kue Mine. To minimize the impacts surrounding the project area, KDI will follow minimum flying altitude guidelines where applicable, prohibit recreational vehicle use by personnel, and apply dust suppression techniques to site roads in the summer. The camp and exploration activity footprint will be minimized and wildlife monitoring will be designed to document wildlife presence, behaviour and identify mitigation, as required.

⋈ habitat changes / effects

January 27, 2016 (previously screened activities):

Permittee is required to take all reasonable measures to prevent damage to wildlife and fish Habitat during the land-use operation.

December 19, 2016:

Construction of infrastructure required for advanced exploration will result in the direct disturbance of wildlife habitat. The camp and exploration activity footprint will be minimized, where practical and when complete, drill sites will be progressively reclaimed and covered with natural surrounding soil to promote natural revegetation. Land clearing activities will be completed outside of breeding season for migratory birds (or sweeps will be conducted prior to clearing). Habitat loss/change will occur to a total of less than 50 hectares. Following closure of the project, restored areas will return to being used as wildlife habitat over time. Including conditions related to protection of wildlife habitat in a permit as per paragraph 26(1)h of the Mackenzie Valley Land Use Regulations will mitigate habitat-related impacts.

☐ game species eπects	
☐ toxins/ heavy metals	
forestry changes	
agricultural changes	
other:	
□ N/A	
Interacting Environment	
Impact 1) Habitat and Communities	Mitigation
☐ predator-prey	
	December 19, 2016: Construction of infrastructure required for advanced exploration will result in the direct disturbance of wildlife habitat. The camp and exploration activity footprint will be minimized, where practical. Land clearing activities will be completed outside of breeding season for migratory birds (or sweeps will be conducted prior to clearing). Habitat loss/change will occur to a total of less than 50 hectares. Including conditions related to protection of wildlife habitat in a permit as per paragraph 26(1)h of the Mackenzie Valley Land Use Regulations will mitigate habitat-related impacts.
☑ reduction/removal of keystone or endangered species	December 19, 2016: Eight species of concern were identified to potentially interact with KDI's advanced exploration program (Grizzly bear, wolverine, Horned grebe, Peregrine falcon, Rusty blackbird, Shorteared owl, Red-necked phalarope, and Bank swallow). Barrenground caribou may also be impacted by the project. To minimize the impacts on wildlife populations, harvesting by employees and contractors at site will be prohibited, wildlife will have the right-of-way on all roads, speed limits will be enforced, wildlife presence will be communicated to employees, wildlife observations are to be reported to an on-site manager, land clearing activities will be completed outside of breeding season for migratory birds (or sweeps will be conducted prior to clearing), existing nests will not be disturbed but further nesting on infrastructure will be discouraged, wildlife fencing will be erected around the camps, any physical or chemical hazards to wildlife will be isolated and removed, camps will be kept clean and food waste frequently incinerated, staff will undergo environmental sensitivity training, feeding and harassment of wildlife is prohibited, and all incidents, raptor nests, and problem wildlife will be reported to ENR. Including conditions related to protection of wildlife habitat in a permit as per paragraph 26(1)h of the Mackenzie Valley Land Use Regulations will mitigate habitat-related impacts. KDI will suspend blasting operations when wildlife are observed within the danger zone prescribed for humans, to avoid hazards to caribou and other wildlife. An Aboriginal Community Monitor will be employed on site to monitor wildlife and ensure mitigation techniques are working, and suggest changes to the camp manager as required.
☑ removal of wildlife corridor or buffer zone	January 27, 2016 (previously screened activities): Conditions are included in the LUP to mitigate wildlife habitat concerns. December 19, 2016: Sensory disturbances from the exploration site may contribute to avoidance of the area and thereby contribute to indirect habitat loss. To minimize the impacts surrounding the project area, KDI will follow minimum flying altitude guidelines where applicable, prohibit recreational vehicle use by personnel, and apply dust suppression techniques to site roads in the summer.
other:	
□ N/A	

<u>December 19, 2016:</u> Any potential effects to waters exceeding the Canadian Drinking Water Quality Guidelines will be mitigated by regularly monitoring lake water quality. Water for camp use will be treated as required.
<u>December 19, 2016:</u> Increased project activities may increase job availability. Employment opportunities with the project may increase income and increase time away from home. This could impact the time spent on traditional land use activities and in the community. Employment schedules have been developed through community engagement and KDI has committed to providing other resources for family/community wellness.
January 27, 2016 (previously screened activities): YKDFN has raised concerns about engagement. A condition has been added to the LUP and WL requiring re-submittal of the Engagement Plan. KDI is being instructed to meet with YKDFN to discuss their concerns.
<u>December 19, 2016:</u> Increased activities associated with the exploration program could cause a disruption in traditional land use through changes in the aesthetic value of the area and through changes to the availability of wildlife. Disruption to traditional land use will be mitigated through community engagement. Land users will not be inhibited from using lands associated with KDI claims unless there are safety concerns, and all contact water will be managed and isolated.
Mitigation
January 27, 2016 (previously screened activities): KDI has committed to perform an Archaeological Overview for previously undisturbed areas. Permittee is required to maintain a buffer zone around known or suspected archaeological sites. Permittee shall not knowingly remove, disturb, or displace any archaeological specimen or site Site discovery and notification condition will also help mitigate any impacts. December 19, 2016: KDI has committed to perform an Archaeological Overview for previously undisturbed areas. Through land use permit conditions, KDI will be required to maintain a buffer zone around

⊠ increased pressure on January 27, 2016 (previously screened activities): KDI has committed to perform an Archaeological Overview for previously undisturbed areas. archaeological sites Permittee is required to maintain a buffer zone around known or suspected archaeological Permittee shall not knowingly remove, disturb, or displace any archaeological specimen or Site discovery and notification condition will also help mitigate any impacts. December 19, 2016: KDI has committed to perform an Archaeological Overview for previously undisturbed areas. change to or loss of aesthetically important sites December 19, 2016: Increased activities associated with the exploration program could cause a disruption in traditional land use through changes in the aesthetic value of the area and through changes to the availability of wildlife. Disruption to traditional land use will be mitigated through community engagement. Land users will not be inhibited from using KDI claims unless there are safety concerns, and all contact water will be managed and isolated. Employment opportunities with the project may increase income and increase time away from home. This could impact the time spent on traditional land use activities and in the community. Employment schedules have been developed through community engagement and KDI has committed to providing other resources for family/community wellness. □ other: □ N/A

known or suspected archaeological sites.

- Pursuant to Schedule 4.1 of the Northwest Territory Métis Nation (NWTMN) Interim Measures Agreement, the MVLWB determined that written notice was given to the NWTMN and that a reasonable period of time was allowed for NWTMN to make representations with respect to the application.
- Pursuant to subsection 1.6, paragraphs (a) and (b) of the **Akaitcho Territory Dene First Nations** (ATDFN) Interim Measures Agreement, the MVLWB determined that written notice was given to the ATDFN and that a reasonable period of time was allowed for ATDFN to make representations with respect to the Application.

Preliminary Screener / Referring Body Information

Organization	Organization
Akaitcho IMA Implementation Office	Town of Fort Smith
Bathurst Inlet Development Ltd.	Town of Hay River
Bathurst Inlet Lodge	True North Safaris Ltd.
Boxxer Gold Corp.	West Point First Nation
Canadian Northern Economic Development Agency	Workers' Safety and Compensation Commission
CanNor NWT Region	Yellowknives Dene First Nation
City of Yellowknife	Salt River First Nations
Dene Nation	Smith Landing First Nation
Deninu K'ue First Nation	Snap Lake Environmental Monitoring Agency -
Ecology North	Tlicho Government
Environment and Climate Change Canada	
Fisheries and Oceans Canada	
Fort Resolution Metis Council	
Fort Smith Metis Council	
GNWT - DOT	
GNWT - ENR	
GNWT - Health	
GNWT - ITI	
GNWT - Lands	
GNWT - MACA	
GNWT - Prince of Wales Northern Heritage	
GNWT- OROGO	
Golder Associates	
Gov of Canada	
Hamlet of Fort Resolution	
Hay River Metis Council	
INAC - Contaminants and Remediation	
INAC - NWT Inspectors	
Katlodeeche First Nation	
Lutsel K'e Dene First Nation - Chief or Wildlife,	
Mackenzie Valley Environmental Impact Review	
Manitoba Denesuline	
MVLWB	
National Energy Board	
Ni Hadi Xa	
North Slave Métis Alliance	
Northwest Territory Métis Nation	
Parks Canada	
Racher Consulting	

Reasons For Decision

(List all reasons and supporting rationales for preliminary screening decision)

DECISION

The Mackenzie Valley Land and Water Board (the Board) is satisfied that the preliminary screening of Applications MV2016C0030 and MV2013L2-0005, Kennady Diamonds Inc., Advanced Exploration, Kennady North Property has been completed in accordance with section 125 of the *Mackenzie Valley Resource Management Act* (MVRMA).

The Board is satisfied that communities and First Nations affected by the Application have been notified and provided adequate time to provide comment on the Application as required by land claim and self-government agreements, the MVRMA, policy directions relating to Interim Measures Agreements, and any other applicable legislation and agreements.

Having reviewed all relevant evidence on the Public Registry, including the submissions of the Applicant, the written comments received by the Board and any Staff Reports prepared for the Board, the Board has decided that in its opinion:

- The proposed development will not have a significant adverse impact on the environment; and
- The proposed development is not a cause of public concern.

The Board is also of the opinion that the Application can proceed through the regulatory process and that any impacts of the development on the environment can be mitigated through the imposition of the terms and conditions in a Land Use Permit and Water Licence.

As a result, the Board, having due regard to the facts and circumstances, the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the Mackenzie Valley Land Use Regulations and the *Waters Act* and Waters Regulations has decided that these Applications can proceed with the regulatory process, and a Permit and Licence containing necessary conditions to mitigate any impacts the development may have on the environment be presented to the Board for decision.

	Preliminary Screening Decision	
\boxtimes	Outside Local Government Boundaries	
	The development proposal might have a significant adverse impact on the environment, refer it to the EIRB.	
\boxtimes	Proceed with regulatory process and/or implementation.	
	The development proposal might have public concern, refer it to the EIRB.	
\boxtimes	Proceed with regulatory process and/or implementation.	
	Wholly Within Local Government Boundaries	
	The development proposal is likely to have a significant adverse impact on air, water or renewable resources, refer it to the EIRB.	
	Proceed with regulatory process and/or implementation.	
	The development proposal might have public concern, refer it to the EIRB.	
	Proceed with regulatory process and/or implementation.	
Broliminary Sergening Organization Signetures		

Preliminary Screening Organization	Signatures	
Mackenzie Valley Land and Water Board	~ Colondin	
	_	
December 19, 2016	Violet Camsell-Blondin, A/Chair	