

# Land and Water Boards of the Mackenzie Valley



## APPLICATION FOR LICENCE, AMENDMENT OF LICENCE, OR RENEWAL OF LICENCE IN NON-FEDERAL AREAS

Subsection 5(1) and Schedule C of the [Waters Regulations](#)

Use an "X" to indicate which Board the Application is being made to:	Mackenzie Valley Land and Water Board:	X	Sahtu Land and Water Board:	
	Wek'èezhii Land and Water Board:		Gwich'in Land and Water Board:	

To complete this form, please refer to the MVLWB [Guide to the Water Licensing Process](#) (Guide) and fill in the grey fields; attach additional pages, as necessary. Indicate N/A in the grey fields for Items or parts of Items that are not applicable. Review the following MVLWB guidance for formatting your Application Package:

- [Document Submission Standards](#)
- [Standard Outline for Management Plans](#)

If applicable, provide the existing or current Water Licence number:			
Use an "X" to indicate if this Application is accompanied by another Application for a Water Licence in a federal area and/or a Land Use Permit.	Water Licence:		
	Land Use Permit:	X	

### 1. NAME AND CONTACT INFORMATION – APPLICANT

Applicant's Name:	James Agate		
Position:	Manager, Reclamation - Canadian Natural Resources Limited		
Mailing Address:	2500, 855 - 2 Street S.W.		
Community:	Calgary	Telephone:	403) 514-7503
Prov/Terr:	AB	Email:	James.Agate@cnrl.com
Postal Code:	T2P 4J8	Other:	(403) 514-7677 (fax)

### 2. NAME AND CONTACT INFORMATION – APPLICANT'S HEAD OFFICE

Include a Certificate of Corporate Registration from the Government of the Northwest Territories to your Application Package.

Use an "X" to indicate if this information is the same as Item 1 above:		<b>X</b>	
Name:			
Position:			
Mailing Address:			
Community:		Telephone:	
Prov/Terr:		Email:	
Postal Code:		Other:	

### 3. LOCATION OF PROJECT

Use the grey fields below to provide or reference the following information:

Maps and Geographic Information System (GIS) Data: Include a map in your Application Package, identifying local geographic features, watercourses and water sources, project structures, and location(s) of any proposed waste deposits. Provide geographic coordinates (latitude and longitude) of project features, and the maximum and minimum project boundary in degrees, minutes, seconds, or decimal degrees. Include GIS data in your Application Package, if applicable. Refer to the MVLWB [Guideline for Geographic Information Systems \(GIS\) Submission Standard](#) for providing geographic information.

Minimum latitude:	N 60° 10' 00"	Maximum latitude:	N 60° 50' 00"
Minimum longitude:	W122° 40' 00"	Maximum longitude:	W123° 40' 00"

NTS Map Sheet No.: Provide the map sheet number:

95B

Land Types: Use an "X" to indicate the type(s) of land on which the activities are proposed:

Free Hold/ Private:		Commissioner's/ Territorial Lands:	<b>X</b>	Federal Land:		Municipal Land:	
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### 4. DESCRIPTION OF PROJECT

Describe your proposed activities in the grey field provided below and contact Board staff to determine whether additional information will be required. For proposed amendments to authorized activities, specify: the nature of the amendment, the condition(s) to be amended, and the rationale for the amendment.

Canadian Natural is applying for a Water Licence to support abandonment and reclamation activities at 13 wellsites primarily located in the Arrowhead and Netla regions, northeast of Fort Liard, Northwest Territories (NT). Water is required to construct access roads, for camp use (0.33m<sup>3</sup>/person/day), and for well abandonments (100m<sup>3</sup>/well).  
Canadian Natural holds a Land Use Permit (MV2019X0014) for these activities.

## 5. TYPE OF UNDERTAKING

Refer to Schedule B of the [Waters Regulations](#). Use an "X" to indicate which one type of undertaking applies:

1	Industrial	<b>X</b>	
2	Mining and milling		
3	Municipal		
4	Power		
5	Agriculture		
6	Conservation		
7	Recreation		
8	Miscellaneous		(describe):

## 6. WATER USE CRITERIA

Refer to Schedules D to H of the [Waters Regulations](#). Use an "X" to indicate which criteria apply:

	Type B	Type A	
To obtain water	<b>X</b>		
To cross a watercourse			
To modify the bed or bank of a watercourse			
Flood control			
To divert water			
To alter the flow of, or store, water			
Other			(describe):

## 7. PROPOSED QUANTITY OF WATER INVOLVED

Describe the purpose of each proposed water use, name, and type (e.g., lake, river) of the water source, the location, and the quantity of water that would be used in the grey fields below. Add more rows as needed.

Purpose of Water Use	Name and Type of Water Source	Location (see att. map)	Geographic Coordinates		Proposed Water Use Volume/Rate, including units
			Northing (NAD 83)	Easting (NAD 83)	
Winter Road Construction and Well Abandonment	Muskeg River	H-29 (POD 281)	6685456	482481	budget 13,714 m <sup>3</sup> max 20,000 m <sup>3</sup>
Winter Road Construction and Well Abandonment	Unnamed Lake	D-21 (POD 282)	6707699	480995	budget 4,813 m <sup>3</sup> max 7,000 m <sup>3</sup>
Winter Road Construction and Well Abandonment	Unnamed Lake	O-06 (POD 283)	6699285	499396	budget 18,013 m <sup>3</sup> max 26,300 m <sup>3</sup>

Purpose of Water Use	Name and Type of Water Source	Location	Geographic Coordinates		Proposed Water Use Volume/Rate, including units
			Northing (NAD 83)	Easting (NAD 83)	
Winter Road Construction and Well Abandonment	Rabbit Creek	E-72 (POD 284)	6709579	486675	budget/max 99 m <sup>3</sup>
Winter Road Construction and Well Abandonment	Netla River	O-42 (POD 285)	6710352	492230	budget/max 99 m <sup>3</sup>
Winter Road Construction and Well Abandonment	Unnamed Lake	N-47 (POD 286)	6719990	505712	budget 8,213 m <sup>3</sup> max 12,000 m <sup>3</sup>
Winter Road Construction and Well Abandonment	Unnamed Lake	F-31 (POD 287)	6726422	507332	budget/max 99 m <sup>3</sup>
Winter Road Construction and Well Abandonment	Unnamed Lake	B-49 (POD 288)	6740932	519867	budget/max 99 m <sup>3</sup>
Winter Road Construction and Well Abandonment	Liard River	B-66	6679601	475177	max 45,149 m <sup>3</sup> (up to annual budget)

For each water source identified in the table above, provide a comparison of total proposed water use to the available capacity. Add more rows as needed.

Water Source	Capacity of Water Source, including units	Other Users of the Water Source	Comparison of Total Proposed Water Use to Available Capacity
Muskeg River	10% of instantaneous flow	N/A	Not To Exceed (NTE) 10% of Inst. Flow (max 20,000m <sup>3</sup> )
Unnamed Lake D-21 (POD 282)	Estimated surf. area 225,000m <sup>2</sup> x 0.1m= 22,500 m <sup>3</sup>	N/A	31% of available capacity (available capacity is 10% of water under ice) (max 7,000m <sup>3</sup> )
Unnamed Lake O-06 (POD 283)	Estimated surf. area 1,276,000m <sup>2</sup> x 0.1m= 127,600 m <sup>3</sup>	N/A	21% of available capacity (available capacity is 10% of water under ice) (max 26,300m <sup>3</sup> )
Rabbit Creek	TBD in field	N/A	(max 99m <sup>3</sup> )
Netla River	TBD in field	N/A	(max 99m <sup>3</sup> )

Water Source	Capacity of Water Source, including units	Other Users of the Water Source	Comparison of Total Proposed Water Use to Available Capacity
Unnamed Lake N-47 (POD 286)	Estimated surf. area 286,000m <sup>2</sup> x 0.1m= 28,600 m <sup>3</sup>	N/A	42% of available capacity (available capacity is 10% of water under ice) (max 12,000m <sup>3</sup> )
Unnamed Lake F-31 (POD 287)	TBD in field	N/A	(max 99m <sup>3</sup> )
Unnamed Lake B-49 (POD 288)	TBD in field	N/A	(max 99m <sup>3</sup> )
Liard River	10% of instantaneous flow	Community of Fort Liard	NTE 10% of Instantaneous Flow The lowest average daily measured flow taken near Fort Liard on March 19, 2017 was 240m <sup>3</sup> /s. The maximum water withdrawal from the Liard River will be less than 300m <sup>3</sup> /day (under a Type B Water Licence) which is a fraction of 10% at the lowest time of the year.

## 8. PROPOSED WASTE MANAGEMENT METHODS

Use the grey fields below to provide or reference the following information:

**Waste Management Plan:** Include your Waste Management Plan in your Application Package, if applicable, or for small-scale activities, describe your proposed waste management activities in the grey fields provided below. A template for the Plan is available in the MVLWB [Guidelines for Developing a Waste Management Plan](#).

If waste is proposed to be disposed of off-site within the NWT, written confirmation (e.g., an email, letter, etc.) from the facility/facilities indicating they will accept the waste is required. Include it/these in your Application Package. Please note this information will be required by the Board prior to commencement of activities.

**Municipalities:** Complete the relevant Operations and Maintenance Plans using the available [Templates](#) and include them in your Application Package. Please refer to Sections 4-8 of Environment and Climate Change Canada's [Solid Waste Management for Northern and Remote Communities: Planning and Technical Guidance Document](#).

**EQC and AEMP:** For activities that involve the deposit of waste into water, provide proposed effluent quality criteria (EQC) in accordance with the MVLWB [Water and Effluent Quality Management Policy](#) and Water Licence – Application – Non-Federal Areas

MVLWB/GNWT [Guidelines for Effluent Mixing Zones](#). Please refer to the MVLWB/GNWT [Guidelines for Effluent Mixing Zones](#) when mixing zones are being considered. Please refer to the MVLWB/GNWT [Guidelines for Aquatic Effects Monitoring Programs](#) for more information regarding the development of AEMP programs.

See WMP submitted for LUP MV2019X0014.

### 9. EXISTING WATER USERS AFFECTED BY THIS PROJECT

Describe pre-Application engagement efforts with any existing water users and associated possible claims for water compensation or compensation agreements. Include the names and locations of existing water users (e.g., persons or organizations) in the grey fields below. An additional table should be added for each water user.

Name:	Community
Community:	Fort Liard
Province/Territory:	NT
Describe Engagement Completed:	<p>Canadian Natural has initiated engagement with the community of Fort Liard and will ensure that the withdrawal of water from the Liard River does not affect their needs.</p> <p>The lowest average daily measured flow taken near Fort Liard on March 19, 2017 was 240m<sup>3</sup>/s.</p> <p>The maximum water withdrawal from the Liard River will be less than 300m<sup>3</sup>/day (under a Type B Water Licence) which is much less than 10% at the lowest time of the year.</p>

### 10. POTENTIAL ENVIRONMENTAL IMPACTS OF THE PROJECT AND PROPOSED MITIGATIONS

Using the Impact-Mitigation Table below, or the more detailed Table in Appendix F of the [Guide](#), identify all potential impacts and possible mitigations that are relevant to the proposed project, and indicate whether any of the mitigation measures have been developed as a result of input from affected parties. Applicants for type A water licences must use the detailed Table in the Guide; other applicants may choose either the Table below or the Table in the Guide. Possible potential impacts are listed below; however, these lists are not exhaustive and may not apply to all projects. All information provided should reflect the size, scale, and nature of the proposed project. Cumulative impacts and climate change must be considered. Attach additional pages if needed.

Potential Impacts <i>Use an "X" to indicate which apply</i>	X	Potential Project Impacts and Proposed Mitigations <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i>
<b>ABIOTIC COMPONENTS</b>		
<b>Land</b>		
Soil contamination	X	<ul style="list-style-type: none"> <li>• Fuel vehicles will be equipped with well maintained hoses, nozzles and pumps to prevent accidental spillage.</li> <li>• Parked equipment will be inspected during a daily walk-around to identify and manage signs of spills or leaks.</li> <li>• Care will be taken during refuelling. Drip tray and absorbent pans will be used to capture minor spills and drips while fuelling</li> </ul>



<p style="text-align: center;"><b>Potential Impacts</b> Use an "X" to indicate which apply</p>	X	<p style="text-align: center;"><b>Potential Project Impacts and Proposed Mitigations</b> <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i></p>
	X	<p>equipment. The drip trays will be monitored for fluid levels and replaced as necessary.</p> <ul style="list-style-type: none"> <li>• Fuel caches will be set-back a minimum of 100m from the high-water mark of any water body or watercourse.</li> <li>• Canadian Natural has developed an Emergency Response Plan and Corporate Spill Response Contingency Manual (refer to <b>Appendix 5 of LUP Application</b>) that will be adhered to throughout the course of the Program.</li> <li>• Spill kits will be kept on-site during operations. Spill response equipment includes waste bags, absorbent pads, and shovels.</li> <li>• In the event of a spill, Canadian Natural will implement spill reporting, clean-up and sampling as per regulations and requirements.</li> <li>• Should a spill occur, Canadian Natural will endeavour to clean-up the spill before infiltration occurs.</li> <li>• Spills, regardless of volume, will be documented and records kept by Canadian Natural.</li> <li>• Should a regulatory reportable spill occur, the NT/NU 24-hour Spill Report Line will be contacted at (867) 920-8130, or alternatively the NT/NU Spill Report Form will be completed and emailed to <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a>.</li> </ul>
Soil compaction	X	<ul style="list-style-type: none"> <li>• Program activities are to take place on previously cleared locations, minimizing additional vegetation removal and related potential effects to terrain, soils and vegetation.</li> <li>• Canadian Natural is proposing to conduct abandonment activities during appropriate weather conditions (e.g. frozen ground and snow cover) to prevent risk of impacts to the ground.</li> <li>• Reclamation activities will be conducted upon successful completion of abandonment activities.</li> <li>• Canadian Natural is proposing to conduct summer Program activities using heli-portable equipment supplemented by pick-up trucks, ATVs, and other construction equipment.</li> </ul>
Destabilization/erosion	X	<ul style="list-style-type: none"> <li>• Only existing crossings will be utilized.</li> <li>• If ground disturbance does occur, it will be re-contoured and reseeded with an approved mix and inspected within one full growing season.</li> <li>• Where the potential for erosion exists, erosion protection materials (such as coconut matting, silt fencing, and/or rip-rap) will be installed.</li> </ul>
Change in soil structure		
Inability to support vegetation	X	<ul style="list-style-type: none"> <li>• Program activities are to take place on previously cleared locations, minimizing additional vegetation removal and related potential effects to terrain, soils and vegetation.</li> <li>• Canadian Natural is proposing to conduct abandonment activities during appropriate weather conditions (e.g. frozen ground and snow cover) to prevent risk of impacts to the ground.</li> <li>• Reclamation activities will be conducted upon successful completion of abandonment activities.</li> <li>• Canadian Natural is proposing to conduct summer Program activities using heli-portable equipment supplemented by pick-up trucks, ATVs, and other construction equipment.</li> </ul>
Other		

<b>Potential Impacts</b> <i>Use an "X" to indicate which apply</i>	<b>X</b>	<b>Potential Project Impacts and Proposed Mitigations</b> <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i>
<b>Water</b>		
<b>Groundwater</b>		
Water table alteration		
Infiltration changes		
Changes in water quality		
Temperature changes		
Other		
<b>Permafrost</b>		
Loss or change in extent	X	<ul style="list-style-type: none"> <li>• The worksites will be monitored for melting permafrost from solar exposure and rutting.</li> <li>• Repairs will be made as required to protect the permafrost.</li> <li>• Program activities are to take place on previously cleared locations, minimizing additional vegetation removal and related potential effects to terrain, soils and vegetation.</li> <li>• During winter activities, frozen ground conditions will mitigate potential damage to surface soils and permafrost.</li> <li>• Canadian Natural is proposing to conduct summer reclamation activities using heli-portable equipment supplemented by pick-up trucks, ATVs, and other construction equipment.</li> </ul>
Changes in seasonal fluctuations		
Change in persistence		
Other		
<b>Surface Water</b>		
Water flow or level changes (permanent, temporary, seasonal)	X	<ul style="list-style-type: none"> <li>• Domestic water may be drawn from the Liard River or acquired from an approved supplier, such as the Water Treatment Plant in Fort Liard. Bottled drinking water will be purchased and transported to the Program site.</li> <li>• The proposed Program is not anticipated to affect the flow or level of surface water or groundwater.</li> <li>• All watercourse crossing construction and repair will adhere to the <i>Northern Land Use Guidelines – Access: Roads and Trails</i> (GNWT, 2015d).</li> <li>• Water withdrawal in excess of 99m<sup>3</sup>/source/year will be limited to approved volumes from approved sources.</li> <li>• Water withdrawal will follow               <ul style="list-style-type: none"> <li>• the Interim Code of Practice: End-of-pipe fish protection screens for small water intakes in freshwater  <a href="https://www.dfo-mpo.gc.ca/pnw-ppc/codes/screen-ecran-eng.html">https://www.dfo-mpo.gc.ca/pnw-ppc/codes/screen-ecran-eng.html</a></li> <li>• the DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in Northwest Territories and Nunavut (June 21, 2010)</li> </ul> </li> <li>• Canadian Natural has followed the MVLWB April 27, 2020 DRAFT Method for Determining Available Winter Water Volumes for Small-Scale Projects to supplement the DFO information.</li> </ul>
Drainage pattern changes		
Temperature changes		
Changes in water quality	X	<ul style="list-style-type: none"> <li>• Materials will not be stored on the surface ice of water bodies or within 100m of the normal high-water mark to minimize the potential for contamination of water resources.</li> </ul>



<p align="center"><b>Potential Impacts</b> Use an "X" to indicate which apply</p>	<p align="center"><b>X</b></p>	<p align="center"><b>Potential Project Impacts and Proposed Mitigations</b> <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i></p>
		<ul style="list-style-type: none"> <li>• Parked equipment will be inspected during a daily walk-around to identify and manage signs of spills or leaks.</li> <li>• Drip trays and absorbent pans will be used to capture minor spills and drips while fuelling equipment. The drip trays will be monitored for fluid levels and replaced as necessary. Care will be taken during refuelling.</li> <li>• Fuel caches will be set-back a minimum of 100m from the high-water mark of any waterbody or watercourse.</li> <li>• Canadian Natural has developed an Emergency Response Plan and Corporate Spill Response Contingency Manual (refer to <b>Appendix 5 in the LUP Application</b>) that will be adhered to throughout the course of the Program.</li> <li>• Spill kits will be kept on-site during operations. Spill response equipment includes waste bags, absorbent pads, and shovels.</li> <li>• If a spill occurs, Canadian Natural will implement spill reporting, clean-up and sampling as per regulations and requirements.</li> <li>• Spills, regardless of volume, will be documented and records kept by Canadian Natural.</li> <li>• Should a regulatory reportable spill occur, the NT/NU 24-hour Spill Report Line will be contacted at (867) 920-8130, or alternatively the NT/NU Spill Report Form will be completed and emailed to <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a>.</li> <li>• If a spill does occur, Canadian Natural will endeavour to clean-up the spill before infiltration occurs.</li> <li>• Effort will be made to avoid wetlands during summer operations.</li> <li>• Ice thickness will be tested prior to watercourse crossings during winter operations.</li> <li>• Operations will not be conducted within 30m of any waterbodies not being crossed.</li> <li>• Waste will be managed in accordance with the Program WMP (refer to <b>Appendix 6 in the LUP Application</b>).</li> </ul>
<p>Wetland impairment</p>	<p align="center">X</p>	<ul style="list-style-type: none"> <li>• Effort will be made to avoid wetlands during summer operations.</li> </ul>
<p>Changes to aquatic habitat (see Biotic section below)</p>	<p align="center">X</p>	<ul style="list-style-type: none"> <li>• Effort will be made to avoid wetlands during summer operations. Materials will not be stored on the ice surface of waterbodies or within 100m of the normal high-water mark to minimize the potential for contamination of water resources.</li> <li>• Parked equipment will be inspected during a daily walk-around to identify and manage signs of spills or leaks.</li> <li>• Drip trays and absorbent pans will be used to capture minor spills and drips while fuelling equipment. The drip trays will be monitored for fluid levels and replaced as necessary. Care will be taken during refuelling.</li> <li>• Fuel caches will be set-back a minimum of 100m from the normal high-water mark of any water body or watercourse.</li> <li>• Canadian Natural has developed an Emergency Response Plan and Corporate Spill Response Contingency Manual (refer to <b>Appendix 5 of the LUP Application</b>) that will be adhered to throughout the course of the Program.</li> <li>• Spill kits will be kept on-site during operations. Spill response equipment includes waste bags, absorbent pads, and shovels.</li> </ul>

<b>Potential Impacts</b> <i>Use an "X" to indicate which apply</i>	<b>X</b>	<b>Potential Project Impacts and Proposed Mitigations</b> <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i>
		<ul style="list-style-type: none"> <li>• If a spill occurs, Canadian Natural will implement spill reporting, clean-up and sampling as per regulations and requirements.</li> <li>• Spills, regardless of volume, will be documented and records kept by Canadian Natural.</li> <li>• Should a regulatory reportable spill occur, the NT/NU 24-hour Spill Report Line will be contacted at (867) 920-8130, or alternatively the NT/NU Spill Report Form will be completed and emailed to <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a>.</li> <li>• If a spill does occur, Canadian Natural will endeavour to clean-up the spill before infiltration occurs.</li> <li>• Ice thickness will be tested prior to watercourse crossings during winter operations.</li> <li>• Domestic water may be drawn from the Liard River or acquired from an approved supplier, such as the Water Treatment Plant in Fort Liard. Bottled drinking water will be purchased and transported to the Program site.</li> <li>• Program activities will be conducted during appropriate seasons to minimize activity during critical periods for wildlife (fall spawning).</li> <li>• Operations will not be conducted within 30m of any waterbodies not being crossed.</li> <li>• Waste will be managed in accordance with the Canadian Natural's WMP (refer to <b>Appendix 6 of the LUP Application</b>).</li> </ul>
Other		
<b>Air</b>		
Changes in air quality		
Harm to living things		
Increased greenhouse gases		
Other		
<b>BIOTIC COMPONENTS</b>		
<b>Vegetation</b>		
Direct loss of vegetation	X	<ul style="list-style-type: none"> <li>• Program activities are located on previously cleared locations, minimizing additional vegetation removal and related potential effects to terrain, soils and vegetation.</li> <li>• Any required seeding and/or follow-up inspections will be performed at the direction of GNWT Department of Land's Land Use Inspector.</li> <li>• Activity will be restricted to the defined Program area, which will limit the area being disturbed.</li> <li>• Frozen ground conditions during the winter Program activities will mitigate potential damage to ground vegetation.</li> </ul>
Loss of Species at Risk or may-be-at-risk plants		
Change in species composition		
Introduction of non-native (invasive) species	X	<ul style="list-style-type: none"> <li>• Care will be taken to clean equipment prior to mobilization into the Program area to limit the likelihood of the introduction of non-native species.</li> </ul>
Effects on plant health (dust, metals, toxins)		
Increased risk of fire	X	<ul style="list-style-type: none"> <li>• Firefighting equipment will be maintained at fuel storage locations.</li> </ul>

<b>Potential Impacts</b> <i>Use an "X" to indicate which apply</i>	<b>X</b>	<b>Potential Project Impacts and Proposed Mitigations</b> <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i>
		<ul style="list-style-type: none"> <li>• Fire prevention methods include designated smoking areas and fire bans as conditions warrant.</li> <li>• As per section 10 and 19 (1) of the Forest Protection Act, Canadian Natural will adhere to Forest Fire Prevention and Suppression Guidelines for Industrial Activities.</li> <li>• In the event of a forest fire, the GNWT Forest Fire Management Division hotline will be called at 1-877-698-3473.</li> </ul>
Compaction of vegetation	X	<ul style="list-style-type: none"> <li>• Frozen ground conditions during the winter Program activities will mitigate potential damage to ground vegetation.</li> <li>• Access ground surface will be monitored for erosion and rutting and damage.</li> </ul>
Other		
<b>Terrestrial Wildlife Habitat</b>		
Direct loss or removal of habitat, dens, or nests	X	<ul style="list-style-type: none"> <li>• Den, dam, lodge, and nest sites will be actively avoided.</li> <li>• Program operations will avoid damaging nests (active or inactive). Destruction, or disruption of eggs and/or nests, including inactive nests, is prohibited by the <i>Wildlife Act</i> (s. 51(1)).</li> </ul>
Loss or removal of keystone species and/or Species at Risk habitat		
Fragmentation of wildlife corridor		
Direct injury or mortality	X	<ul style="list-style-type: none"> <li>• Vehicles and other equipment will be limited to travelling 40km/h, will be required to communicate approach and hazards using radios, and will be instructed to slow down when passing wildlife or on-coming traffic.</li> </ul>
Disturbances to key lifecycle stages: breeding, feeding, nesting, staging	X	<ul style="list-style-type: none"> <li>• Program activities will be conducted during appropriate seasons to minimize activity during critical periods for wildlife (spring and fall).</li> <li>• Helicopter flights within the region will adhere to the minimum flight altitude and vertical distances as recommended in the publication <i>Flying Low? Think Again...</i> (GNWT, 2013b), unless safety is a concern.</li> </ul>
Effects on population abundance		
Change in species diversity		
Effects on wildlife health (toxins, metals, etc.)	X	<ul style="list-style-type: none"> <li>• The deposition of any substance into waters or areas frequented by migratory birds is prohibited under the <i>Migratory Birds Convention Act (Section 5.1)</i>.</li> <li>• Substances harmful to migratory birds will not be placed in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.</li> <li>• Operations will not be conducted within 30m of any waterbodies not being crossed.</li> </ul>
Changes to migratory movement patterns		
Changes to predator-prey relationships		
Human-wildlife conflicts	X	<ul style="list-style-type: none"> <li>• The Wildlife Monitor will observe, and document wildlife and potential wildlife impacts to ensure that appropriate environmental protection measures are being implemented. Species at risk mammal and amphibian observations will be reported to <a href="mailto:WILDLIFEOBS@gov.nt.ca">WILDLIFEOBS@gov.nt.ca</a>. Species at risk bird</li> </ul>

<b>Potential Impacts</b> <i>Use an "X" to indicate which apply</i>	<b>X</b>	<b>Potential Project Impacts and Proposed Mitigations</b> <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i>
		<p>observations will be reported to <a href="mailto:NWTchecklist@ec.gc.ca">NWTchecklist@ec.gc.ca</a>.  Species at risk insect observations will be reported to <a href="mailto:NWTBugs@gov.nt.ca">NWTBugs@gov.nt.ca</a>.</p> <ul style="list-style-type: none"> <li>• Work crews will be encouraged to support the work of the Wildlife Monitors.</li> <li>• Wildlife will not be approached or fed by Program personnel and Program personnel will not be permitted to hunt on the worksites.</li> <li>• Waste will be managed in accordance with the Program WMP (refer to <b>Appendix 6 of the LUP Application</b>). Food will be stored securely, and garbage disposed of frequently.</li> </ul>
Other		
<b>Aquatic Habitat</b>		
Breeding disturbances		
Change in species diversity		
Effects on health (toxins, metals, sediment, etc.)	<b>X</b>	<ul style="list-style-type: none"> <li>• Effort will be made to avoid wetlands during summer operations. Materials will not be stored on the ice surface of waterbodies or within 100m of the normal high-water mark to minimize the potential for contamination of water resources.</li> <li>• Parked equipment will be inspected during a daily walk-around to identify and manage signs of spills or leaks.</li> <li>• Drip trays and absorbent pans will be used to capture minor spills and drips while fuelling equipment. The drip trays will be monitored for fluid levels and replaced as necessary. Care will be taken during refuelling.</li> <li>• Fuel caches will be set-back a minimum of 100m from the normal high-water mark of any water body or watercourse.</li> <li>• Canadian Natural has developed an Emergency Response Plan and Corporate Spill Response Contingency Manual (refer to <b>Appendix 5 of the LUP Application</b>) that will be adhered to throughout the course of the Program.</li> <li>• Spill kits will be kept on-site during operations. Spill response equipment includes waste bags, absorbent pads, and shovels.</li> <li>• If a spill occurs, Canadian Natural will implement spill reporting, clean-up and sampling as per regulations and requirements.</li> <li>• Spills, regardless of volume, will be documented and records kept by Canadian Natural.</li> <li>• Should a regulatory reportable spill occur, the NT/NU 24-hour Spill Report Line will be contacted at (867) 920-8130, or alternatively the NT/NU Spill Report Form will be completed and emailed to <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a>.</li> <li>• If a spill does occur, Canadian Natural will endeavour to clean-up the spill before infiltration occurs.</li> <li>• Effort will be made to avoid wetlands during summer operations.</li> <li>• Ice thickness will be tested prior to watercourse crossings during winter operations.</li> <li>• Domestic water may be drawn from the Liard River or acquired from an approved supplier, such as the Water Treatment Plant in Fort Liard. Bottled drinking water will be purchased and transported to the Program site.</li> </ul>

<b>Potential Impacts</b> <i>Use an "X" to indicate which apply</i>	<b>X</b>	<b>Potential Project Impacts and Proposed Mitigations</b> <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i>
		<ul style="list-style-type: none"> <li>• Program activities will be conducted during appropriate seasons to minimize activity during critical periods for wildlife (fall spawning).</li> <li>• Operations will not be conducted within 30m of any waterbodies not being crossed.</li> <li>• Waste will be managed in accordance with the Canadian Natural's WMP (refer to <b>Appendix 6 of the LUP Application</b>).</li> </ul>
Changes to migratory movement patterns		
Changes to predator-prey relationships		
Effects on population abundance		
Change in species diversity		
Other		
<b>CULTURAL COMPONENTS</b>		
<b>Wildlife Harvesting</b>		
Loss or reduction in game species populations		
Effects on traditional land use, subsistence, and harvesting rights		<ul style="list-style-type: none"> <li>• Renewed engagement was initiated in March of 2019 to support the LUP Application for the 13-Well Abandonment and Reclamation Program. Only the Acho Dene Koe (ADK) Band Land Services and the Hamlet of Fort Liard provided a formal, written response. The ADK response requested Canadian Natural list ADKFN Corporate on the Engagement Package to be notified when any business, employment, or training opportunities are available relating to the project. The Hamlet of Fort Liard requested additional time for the project to be reviewed at the next scheduled Council meeting (April 11, 2019) and an additional two weeks to provide a response. Council had no issues with the project.</li> </ul>
Other		
<b>Cultural Integrity and Heritage Resources</b>		
Change to or loss of cultural integrity	<b>X</b>	<ul style="list-style-type: none"> <li>• During historical community consultation, Canadian Natural solicited input from the Chief and community members present in the meeting to comment on areas around the Program area that are of cultural value. Given that the Project area is on existing sites and that the proposed project activities intend to reclaim the sites to equivalent land capability, no concerns were raised.</li> <li>• Canadian Natural will request current information on land use prior to abandonment and reclamation activities to reduce the potential for conflicts and ensure community members are aware of Canadian Natural's planned activities and vice versa.</li> </ul>
Change to or loss of traditional lifestyle		
Change to or loss of heritage resource		
Other		
<b>Social and Economic Well-being</b>		
Increased human health hazard and risk		
Economic opportunities or losses (employment, training)	<b>X</b>	<ul style="list-style-type: none"> <li>• Canadian Natural recognizes the importance of providing employment and business opportunities to local businesses and individuals. The Program will create seasonal jobs, training opportunities and revenue for local contractors.</li> <li>• Canadian Natural will use local contractors as much as possible.</li> </ul>

<b>Potential Impacts</b> <i>Use an "X" to indicate which apply</i>	<b>X</b>	<b>Potential Project Impacts and Proposed Mitigations</b> <i>Describe the potential impact(s) and the proposed measure(s) to reduce each of these impacts.</i>
		<ul style="list-style-type: none"> <li>It is anticipated that approximately 8-15 personnel will be required to conduct the abandonment and reclamation activities.</li> </ul>
Change in ecological, cultural, social, or economic values identified for protection in approved Land Use Plans		
Impairment of the recreational or traditional uses of the land or water	X	<ul style="list-style-type: none"> <li>Canadian Natural will request current information on land use prior to abandonment and reclamation activities to reduce the potential for conflicts and ensure community members are aware of Canadian Natural's planned activities and vice versa.</li> </ul>
Impairment of the aesthetic quality of the land or water		
Changes to the use of the area by other non-Indigenous people (e.g. trappers, outfitters, residents, hunters, forest harvesters, other authorized projects)	X	<ul style="list-style-type: none"> <li>Canadian Natural will request current information on land use prior to abandonment and reclamation activities to reduce the potential for conflicts and ensure community members are aware of Canadian Natural's planned activities and vice versa.</li> </ul>
Other		

**Spill Contingency Plan:** Include your Spill Contingency Plan in your Application Package, if applicable, or for small-scale activities, provide relevant details in the grey field provided below. An example of this Plan can be found in the INAC [Guidelines for Spill Contingency Planning](#).

See Spill Contingency Plan previously submitted with the application for MV2019X0014 LUP.

### 11. NAME AND CONTACT INFORMATION – CONTRACTORS AND SUB-CONTRACTORS

Include relevant names, responsibilities, and contact information in the grey fields below. An additional table should be added for each contractor and sub-contractor.

Name:	Rob Oliver		
Responsibilities:	CNRL Construction Supervisor		
Company Name:	CNRL		
Mailing Address:	Bag 6450		
Community:	Fort St. John	Telephone:	250-261-1250
Prov/Terr:	BC	Email:	<a href="mailto:rob.oliver@cnrl.com">rob.oliver@cnrl.com</a>
Postal Code:	V1J 4H9	Other:	

Name:	ADK Holdings Ltd. / Beaver Enterprises LP		
Responsibilities:	Ice bridge construction, winter road construction, reclamation services		
Company Name:	Beaver Enterprises LP		
Mailing Address:	General Delivery		
Community:	Fort Liard	Telephone:	867-770-4571
Prov/Terr:	NWT	Email:	<a href="mailto:tomwezelman@adkcorporate.ca">tomwezelman@adkcorporate.ca</a>
Postal Code:	X0G 0A0	Other:	



Name:	TBD		
Responsibilities:	Hauling water from source location to storage tanks to rigs		
Company Name:			
Mailing Address:			
Community:		Telephone:	
Prov/Terr:		Email:	
Postal Code:		Other:	

## 12. STUDIES UNDERTAKEN TO DATE

In the grey field below list any relevant studies that support the proposed activities and include them in your Application Package.

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## 13. PROPOSED PROJECT SCHEDULE AND TERM

Indicate the proposed project start and completion dates, and the time of year the project activities are planned to occur. Describe any anticipated temporary closure(s) or seasonal shutdowns. Indicate the term requested.

Start Date:	Nov 1, 2021	Completion Date:	Aug 25, 2024
See LUP MV2019X0014. Winter access construction to start as soon as possible in late 2021 based on winter conditions and permits. Downhole abandonment program – Winter 2021/22 as directed by OROGO.			
Term of Licence Requested:	Expiry date aligned with LUP MV2019X0014		

## 14. ADDITIONAL SUPPORTING INFORMATION

Use the grey field below to provide or reference the following information:

**Engagement:** Conduct engagement, prepare an Engagement Record and Engagement Plan in accordance with the MVLWB [Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits](#), and include them in your Application Package. Templates are provided in the Guidelines. Please also refer to [Information for Proponents on MVLWB's Engagement Requirements](#).

**Eligibility:** Contact federal, territorial, and Indigenous governments, and other parties to ensure all appropriate authorizations have been obtained or are in the process of being obtained. Obtain permission from the landowner(s), if necessary (e.g., obtain and reference licences of occupation, leases, access authorizations, etc.) and attach it/them to the Application.

Land Use Plans: Contact the applicable Land Use Planning Board or the Tłjchq Government to discuss conformity with the relevant Land Use Plan(s). Include a Land Use Plan Conformity Table in your Application Package, demonstrating how the project meets the requirements of the Land Use Plan, if applicable.

Traditional (Environmental) Knowledge (TEK/TK): Provision of TEK/TK is mandatory for Applications to the Sautu Land and Water Board. Other applicants are strongly encouraged to include TEK/TK.

Facilities: Include the supporting information required under subsection 5(2) of the [Waters Regulations](#) if the project includes the following: dam(s); storage reservoir(s); watercourse crossing(s); camp(s) or lodge(s); use of water for industrial use or mining and milling; deposit of waste; or handling or storage of petroleum products or hazardous materials.

Closure and Reclamation: Describe your plans for closure and reclamation, including any temporary closures and seasonal shutdowns. Include your Closure and Reclamation Plan in your Application Package, or for small-scale activities, describe the proposed activities in the grey field provided below. Please also refer to the MVLWB/AANDC [Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories](#) and Environment and Climate Change Canada's [Solid Waste Management for Northern and Remote Communities: Planning and Technical Guidance Document](#).

Closure Cost Estimate: Prepare a Closure Cost Estimate and include it in your Application Package. Applicants are encouraged to contact the Board, prior to applying, to determine which closure-cost-estimate template is most suited to the project activities being applied for. Guidance is provided in section 2.2 of the MVLWB/AANDC/GNWT [Guidelines for Closure and Reclamation Cost Estimates for Mines](#). If your Application is submitted concurrently with a Land Use Permit Application, the estimate should include a breakdown of water- and land-related activities and liabilities.

Financial Capacity: Provide information relating to your financial capacity, as outlined in paragraph 26(5)(d) of the [Waters Act](#). Please note this information will be required by the Board prior to issuance.

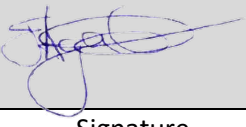
Engagement – see Appendix 1A – Stakeholder Engagement Information
Eligibility – see attached OROGO document
Land Use Plans, TEK/TK, Facilities – N/A
Closure and Reclamation – see LUP MV2019X0014
Closure Cost Estimate - see attached RECLAIM model
Financial Capacity – see attached summary

## 15. FEES

Refer to the following guidance for assistance with determining relevant fees: [Water Use Fee Policy](#); [Water Use Fee Calculator](#); and [Water Licence Application Fee, Water Use Fee, and Security Deposit Information](#).

Type of Fee	Amount (\$)
Application fee:	\$30.00
Water use fee deposit:	\$451.49
Total Fees:	\$481.49

## 16. SIGNATURE

James Agate (Canadian Natural Resources Limited)	Manager, Reclamation
Applicant's Name (print) or Company Name	Position (print)
	November 13, 2020
Signature	Date

Please submit completed applications to the Regulatory Manager or Executive Director identified on the "Contact Us" pages of the respective Land and Water Board ([www.mvlwb.com](http://www.mvlwb.com), [www.wlwb.ca](http://www.wlwb.ca), [www.slwb.com](http://www.slwb.com), [www.glwb.com](http://www.glwb.com)).