POST-EA INFORMATION PACKAGE INCLUDING
AN UPDATED PROJECT DESCRIPTION
ALL SEASON ROAD TO PRAIRIE CREEK MINE

APPENDIX 1-15

SUBMITTED IN SUPPORT OF:
Water Licences MV/PC2014L8-0006, and
Land Use Permits MV/PC2014F0013

SUBMITTED TO:
Mackenzie Valley Land and Water Board
Yellowknife, NT X1A 2N7

Parks Canada,
Nahanni National Park Reserve
Fort Simpson, NT X0E 0N0

SUBMITTED BY:
Canadian Zinc Corporation
Vancouver, BC, V6B 4N9

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Hoverbarge
What is a Hoverbarge?

A standard cold weather marine steel barge, built to marine rules with an air cushion system to provide lift.

Hovering 1.8m in the air, the Hoverbarge is amphibious enabling it to traverse, wetlands & mudflats etc.
Hovercraft v Hoverbarge

Hovercraft reach a speed where the skirt lifts out of the water (over hump) and then hover just above the water surface.

The Hoverbarge travelling a slower speed of 5 knots will always remain under hump speed with the tip of the skirts in the water. This results in less spray than high speed Hovercraft.
Air is fed into the skirt plenum chamber and the skirt creates a flexible seal around the periphery of the barge.
Air feeds into the skirt that seals the periphery

Cold weather marine steel hull

The base is flat with no feet or protrusions
Minimal Environmental Footprint
The Hoverbarge only exerts 1psi ground pressure when on hover, compared to a human footprint of 7-8psi, thus the Hoverbarge has minimal impact to the terrain it travels over.

Large Flat top deck
The Hoverbarge has a large cargo deck, clear of any equipment, along with being flat top (rather than in a well deck) the Hoverbarge provides huge flexibility in the type of operations it can be deployed on.
Redundancy
In soft mud / water conditions, the Hoverbarge has 100% redundancy built into its lift fan capacity, ensuring minimal disruption to operations in the event of an engine failure.

Engine Enclosures
Engine enclosures are designed to ensure the engine, fuel tank and lift fans are protected from extreme temperature. The housing also reduces sound levels and shore power can supply heaters in the enclosures whilst the craft is not in service.
# Hoverbarge Sound Levels

## LOUDNESS COMPARISON CHART (dBA)

<table>
<thead>
<tr>
<th>Common Outdoor Activities</th>
<th>Noise Level (dBA)</th>
<th>Common Indoor Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snow Mobile</td>
<td>110</td>
<td>Rock Band</td>
</tr>
<tr>
<td>Self Propelled Hoverbarge</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Gas Lawn Mower at 3 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Propelled Hoverbarge</td>
<td>90</td>
<td>Food Blender at 3 ft</td>
</tr>
<tr>
<td>Diesel Truck at 50 ft at 50 mph</td>
<td></td>
<td>Garbage Disposal at 3 ft</td>
</tr>
<tr>
<td>Noisy Urban Area, Daytime</td>
<td>80</td>
<td>Vacuum Cleaner at 10 ft</td>
</tr>
<tr>
<td>Gas Lawn Mower at 100 ft</td>
<td></td>
<td>Normal Speech at 3 ft</td>
</tr>
<tr>
<td>Commercial Area</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Heavy Traffic at 300 ft</td>
<td>60</td>
<td>Large Business Office</td>
</tr>
</tbody>
</table>
Hoverbarge
Hoverbarge: Navigation

Liard River

<table>
<thead>
<tr>
<th>Liard Crossing Facility</th>
<th>Barge/ ice bridge</th>
<th>Hoverbarge/ ice bridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPEN (wks/yr)</td>
<td>28</td>
<td>37</td>
</tr>
<tr>
<td>CLOSED (wks/yr)</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>REDUCED LOADS (wks/yr)*</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

* to improve this Highway 7 requires upgrading
The all season road route at the Liard River Crossing: Location of Barge and Ice Bridge

Facing East

All season road route

Lindberg's Landing

Ice Bridge

Barge Crossing

Liard River