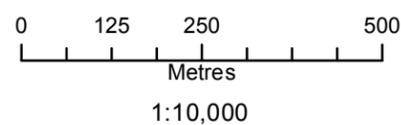


Coordinate System: UTM Zone 14N NAD83  
 Data Source: MB Hydro, ProvMB, NRCAN  
 Date Created: October 24, 2013



**Land Base**

- Provincial Highways
- Provincial Roads
- Watercourse
- Waterbodies

**Project Infrastructure**

- BPIII Final Preferred Route
- Keewatinooow Converter Station
- - Ground Electrode Line
- - Construction Power Line
- Ground Electrode
- Work Area Zone

- Manitoba Hydro & Contractor Work Area
- Borrow Deposits
- Excavated Material Placement Area
- Access Road Security Gatehouse

**ESS Legend**

- Ecosystem**
- Species of Concern
- Water**
- Water Crossing
- Water Crossing
- Land Use**
- Churchill WMA

**Bipole III Transmission Project  
 Construction Environmental Protection Plan  
 Keewatinooow C.S. and Infrastructure  
 and Ground Electrode Site  
 Environmentally Sensitive Site Locations**

MAP NUMBER : 6

ESS Group : Conservation

Sec ID	ESS ID	ESS Name	Location	Easting	Northing	UTM Zone
CP	CP-LUse-100	Churchill Wildlife Management Area	Entire Extent of Map 6	-	-	14N

**Potential Effects:**

*Within the Churchill Wildlife Management Area*

**Specific Mitigation:**

- Must not place food for the purpose of attracting, feeding or holding polar bears
- All project staff must record all polar bears encountered/observed on a daily basis, any observations of polar bears or polar bear tracks must be reported to the MH Site Environmental Officer or MH Environmental Inspector
- All garbage must be stored in bear proof containers or within electric fencing and removed from Wildlife Management Area
- Clearing within the ROW will be kept to a minimum and with non -non-hazard trees removed. Any trees that are cleared must be cut, piled and burned under safe conditions
- Carry out construction activities on well frozen ground in wetlands

ESS Group : Species of Concern

Sec ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
KW	KW-Eco-324	Species of Concern (plant)	811816	6285361	14N

**Potential Effects:**

*Loss of plants of conservation concern from clearing and construction activities.*

**Specific Mitigation:**

- Non-mitigable due to complete removal of all vegetation cover for site.

ESS Group : Species of Concern

Sec ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
KW	KW-Eco-325	Species of Concern (plant)	811147	6284064	14N
KW	KW-Eco-326	Species of Concern (plant)	811191	6284025	14N

**Potential Effects:**

*Potential loss of plants of conservation concern from clearing, construction, maintenance and decommissioning activities.*

**Specific Mitigation:**

- Identify and flag prior to start of work
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Provide 5m vegetated (shrub and herbaceous) buffer around site
- Remove trees by hand or other low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible

ESS Group : Water Crossing

Sec ID	ESS ID	ESS Name	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
KW	KW-Aqua-113	Swift Creek	-	-	N/A	N/A	N/A	N/A
KW	KW-Aqua-117	Unnamed Tributary of Swift Creek	-	-	N/A	N/A	N/A	N/A
KW	KW-Aqua-118	Unnamed Tributary of Swift Creek	-	-	N/A	N/A	N/A	N/A

**Potential Effects:**

*Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; damage to stream banks; loss of riparian vegetation; fish habitat disturbances and impeded fish movement; rutting of floodplain.*

**Specific Mitigation:**

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory vegetation will be maintained along with trees that do not violate Manitoba Hydro Vegetation Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream works or fording from April 15 - July 15

**ESS Group :** Wetland

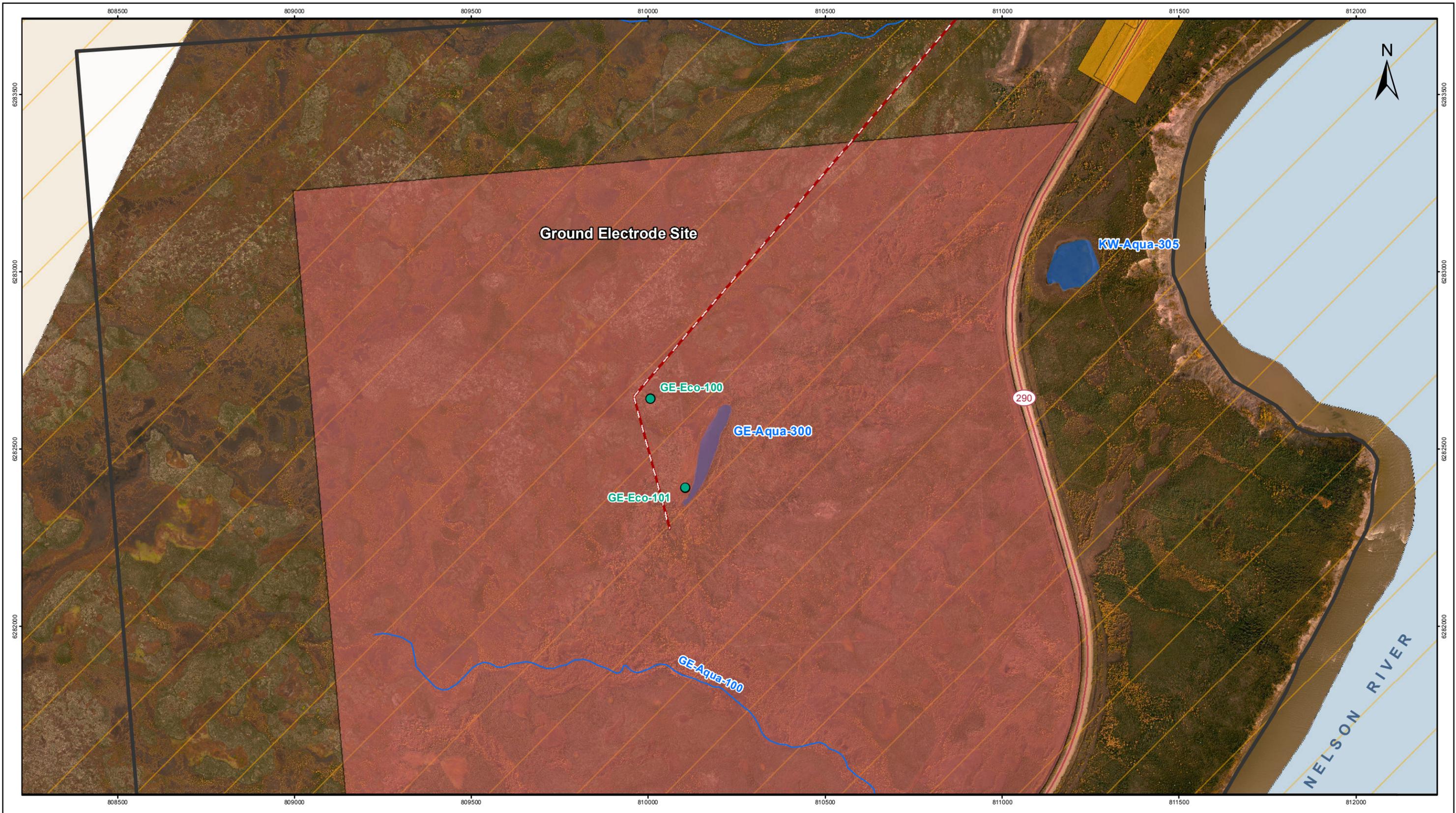
Sec ID	ESS ID	ESS Name	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
KW	KW-Aqua-303	Unnamed wetland	-	-	N/A	N/A	N/A	N/A
KW	KW-Aqua-304	Unnamed wetland	-	-	N/A	N/A	N/A	N/A

**Potential Effects:**

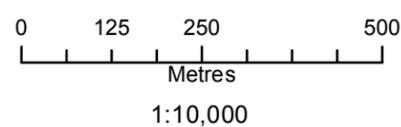
*Loss of riparian vegetation, rutting, altered surface water flows, contamination.*

**Specific Mitigation:**

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods within buffer
- The application of herbicides is prohibited within buffer



Coordinate System: UTM Zone 14N NAD83  
 Data Source: MB Hydro, ProvMB, NRCAN  
 Date Created: October 24, 2013



**Land Base**

- Provincial Highways
- Provincial Roads
- Watercourse
- Waterbodies

**Project Infrastructure**

- BPIII Final Preferred Route
- Keewatinow Converter Station
- Ground Electrode Line
- Construction Power Line
- Ground Electrode
- Work Area Zone

- Manitoba Hydro & Contractor Work Area
- Borrow Deposits
- Excavated Material Placement Area
- Access Road Security Gatehouse

**ESS Legend**

- |   |   |
|---|---|
| <span style="color: green;">●</span> Species of Concern | <span style="border: 1px solid orange; display: inline-block; width: 10px; height: 10px;"></span> Churchill WMA |
| <span style="color: blue;">—</span> Water Crossing      |   |
| <span style="color: lightblue;">—</span> Water Crossing |   |

**Bipole III Transmission Project  
 Construction Environmental Protection Plan  
 Keewatinow C.S. and Infrastructure  
 and Ground Electrode Site  
 Environmentally Sensitive Site Locations**

MAP NUMBER : 7

ESS Group : Conservation

Sec ID	ESS ID	ESS Name	Location	Easting	Northing	UTM Zone
CP	CP-LUse-100	Churchill Wildlife Management Area	Entire Extent of Map 7	-	-	14N

**Potential Effects:**

*Within the Churchill Wildlife Management Area*

**Specific Mitigation:**

- Must not place food for the purpose of attracting, feeding or holding polar bears
- All project staff must record all polar bears encountered/observed on a daily basis, any observations of polar bears or polar bear tracks must be reported to the MH Site Environmental Officer or MH Environmental Inspector
- All garbage must be stored in bear proof containers or within electric fencing and removed from Wildlife Management Area
- Clearing within the ROW will be kept to a minimum and with non -non-hazard trees removed. Any trees that are cleared must be cut, piled and burned under safe conditions
- Carry out construction activities on well frozen ground in wetlands

ESS Group : Species of Concern

Sec ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
GE	GE-Eco-100	Species of Concern (plant)	810005	6282643	14N
GE	GE-Eco-101	Species of Concern (plant)	810104	6282391	14N

**Potential Effects:**

*Loss of plants of conservation concern from clearing and construction activities.*

**Specific Mitigation:**

- Identify and flag prior to start of work
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Provide 5m vegetated (shrub and herbaceous) buffer around site
- Remove trees by hand or other low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible

ESS Group : Wetland

Sec ID	ESS ID	ESS Name	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
GE	GE-Aqua-300	Unnamed wetland	-	-	N/A	N/A	N/A	N/A
KW	KW-Aqua-305	Unnamed wetland	-	-	N/A	N/A	N/A	N/A

**Potential Effects:**

*Loss of riparian vegetation, rutting, altered surface water flows, contamination.*

**Specific Mitigation:**

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods within buffer
- The application of herbicides is prohibited within buffer

ESS Group : Water Crossing

Sec ID	ESS ID	ESS Name	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
GE	GE-Aqua-100	Unnamed Tributary of Nelson River	-	-	N/A	N/A	Marginal	Low

**Potential Effects:**

*Instream works & diversion effects; increased erosion and sedimentation of stream; contamination of a watercourse from leaching of embedded coke; stream crossing effects.*

**Specific Mitigation:**

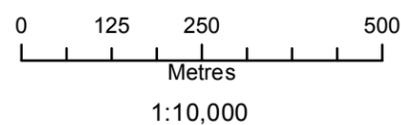
- No instream work or fording between April 15 and July 15
- Construction will be postponed under adverse weather (i.e., storm events), to minimize potential sediment introduction into the aquatic environment
- All instream construction activities will be conducted in isolation of flowing water using a temporary diversion
- Temporary diversions will be constructed and operated using the best management practices outlined in Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (DFO and MNR 1996) and DFO Operational Statement for Isolated or Dry Open Cut Stream Crossings
- During pump around diversions, pump intakes will be screened according to DFO guidelines (DFO 1991). Water will be discharged downstream from the worksite, onto a splash pad to prevent channel and bank erosion
- Any diversions channels will be designed to accommodate high flows due to storm events, be lined with erosion-resistant lining, be passable by fish under all flow conditions, & will be backfilled & stabilized upon completion of construction
- Flow to downstream areas will be maintained at all times while diversions are in place
- Turbid water generated from the isolated work site will be pumped away from the watercourse to a vegetated area, filter fabric dam or other acceptable area that will provide filtration and/or settling time prior to entering watercourses
- A fish salvage will be conducted following isolation of the worksite. Fish will be relocated to an area downstream from the site
- Turbidity monitoring will be conducted during instream construction activities. Turbidity measurements will detect changes in turbidity resulting from construction activities and monitor effectiveness of mitigation measures.
- Diversions will be removed following completion of works. The site will be restored and all disturbed surfaces stabilized (i.e. re-vegetated)
- Disturbed areas will be re-vegetated following completion of works

**Specific Mitigation cont'd**

- Coke may be rinsed or leached (aged), will be stored >100 m from the ordinary high water mark, & will be adequately contained & protected from wind & rain to prevent entry of fine particulates into streams through runoff or dust deposition
- Appropriate erosion and sediment control measures will be implemented to mitigate sediment introduction into watercourses
- Where crossing a stream is necessary, fording or construction of temporary stream crossings will follow DFO's operational statements for Temporary Stream Crossings &, if appropriate conditions exist, Ice Bridges and Snow Fills



Coordinate System: UTM Zone 14N NAD83  
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 Date Created: October 24, 2013



**Land Base**

- Provincial Highways
- Provincial Roads
- Watercourse
- Waterbodies

**Project Infrastructure**

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- - - Ground Electrode Line
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- Work Area Zone
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- Borrow Deposits
- Excavated Material Placement Area
- Access Road Security Gatehouse

**ESS Legend**

- Water**
- Water Crossing
- Water Crossing
- Land Use**
- Churchill WMA

**Bipole III Transmission Project  
 Construction Environmental Protection Plan  
 Keewatinow C.S. and Infrastructure  
 and Ground Electrode Site  
 Environmentally Sensitive Site Locations**

**MAP NUMBER :** 8

**ESS Group :** Conservation

Sec ID	ESS ID	ESS Name	Location	Easting	Northing	UTM Zone
CP	CP-LUSe-100	Churchill Wildlife Management Area	Entire Extent of Map 1	-	-	14N

**Potential Effects:**

*Within the Churchill Wildlife Management Area*

**Specific Mitigation:**

- Must not place food for the purpose of attracting, feeding or holding polar bears
- All project staff must record all polar bears encountered/observed on a daily basis, any observations of polar bears or polar bear tracks must be reported to the MH Site Environmental Officer or MH Environmental Inspector
- All garbage must be stored in bear proof containers or within electric fencing and removed from Wildlife Management Area
- Clearing within the ROW will be kept to a minimum and with non -non-hazard trees removed. Any trees that are cleared must be cut, piled and burned under safe conditions
- Carry out construction activities on well frozen ground in wetlands

**ESS Group :** Water Crossing

Sec ID	ESS ID	ESS Name	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
GE	GE-Aqua-100	Unnamed Tributary of Nelson River	-	-	N/A	N/A	Marginal	Low

**Potential Effects:**

*Instream works & diversion effects; increased erosion and sedimentation of stream; contamination of a watercourse from leaching of embedded coke; stream crossing effects.*

**Specific Mitigation:**

- No instream work or fording between April 15 and July 15
- Construction will be postponed under adverse weather (i.e., storm events), to minimize potential sediment introduction into the aquatic environment
- All instream construction activities will be conducted in isolation of flowing water using a temporary diversion
- Temporary diversions will be constructed and operated using the best management practices outlined in Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (DFO and MNR 1996) and DFO Operational Statement for Isolated or Dry Open Cut Stream Crossings
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- Coke may be rinsed or leached (aged), will be stored >100 m from the ordinary high water mark, & will be adequately contained & protected from wind & rain to prevent entry of fine particulates into streams through runoff or dust deposition
- Appropriate erosion and sediment control measures will be implemented to mitigate sediment introduction into watercourses
- Where crossing a stream is necessary, fording or construction of temporary stream crossings will follow DFO's operational statements for Temporary Stream Crossings &, if appropriate conditions exist, Ice Bridges and Snow Fills

**ESS Group :** Wetland

Sec ID	ESS ID	ESS Name	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
KW	KW-Aqua-306	Unnamed wetland	-	-	N/A	N/A	N/A	N/A
KW	KW-Aqua-307	Unnamed wetland	-	-	N/A	N/A	N/A	N/A

**Potential Effects:**

*Loss of riparian vegetation, rutting, altered surface water flows, contamination.*

**Specific Mitigation:**

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods within buffer
- The application of herbicides is prohibited within buffer