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March 14, 2023

Client File No. 5433.00
Licence No. 3055

Director
Environmental Approvals Branch
Environment and Climate
1007 Century Street
Winnipeg, MB R3H 0W4

Dear Director:

RE: Bipole III Transmission Project (Licence 3055) – Licence Condition # 4

Pursuant to condition 4 of the Bipole III Transmission Project *Environment Act* Licence #3055, please find attached for approval a revised Keewatinohk Converter Station Construction Environmental Protection Plan that has been updated for the decommissioning phase of Keewatinohk Converter Station construction infrastructure components.

Should you have any questions or require further clarification of our comments please do not hesitate to contact me at 204-360-3119.

Regards,

Original signed by

James Matthewson
Manager
Transmission & Distribution Environment and Engagement Department
Manitoba Hydro
360 Portage Ave (18)
Winnipeg, Manitoba
R3C 0G8

Attachments: 1

Bipole III Transmission Project
Decommissioning
Environmental Protection Plan

Keewatinohk Converter Station Construction
Infrastructure

February 2023

Prepared by Manitoba Hydro

Project Management Division

Transmission & Distribution Environment and
Engagement Department

Preface

Manitoba Hydro's Environmental Commitment

Manitoba Hydro is committed to protect and preserve natural environments and heritage resources affected by its projects and facilities. This commitment and a commitment to continually improve environmental performance is demonstrated through the company's Environmental Management System.

Environmental protection can only be achieved with the engagement of Manitoba Hydro employees, consultants, local communities and contractors at all stages of projects from planning and design through construction, operational and decommissioning phases.

As stated in the Manitoba Hydro Environmental Management Policy:

Manitoba Hydro strives to protect the environment by:

- ensuring that work performed by our employees and contractors meets environmental regulatory, contractual, and voluntary commitments
- recognizing the needs and views of our interested parties and ensuring that relevant information is communicated
- continuously assessing our environmental risks to ensure we are managing them effectively
- reviewing our environmental objectives regularly, seeking opportunities to improve our environmental performance
- considering the life cycle impacts of our products and services
- ensuring that our employees and contractors receive relevant environmental training, and
- fostering an environment of continual improvement

Manitoba Hydro's Environmental Management Policy has been used to guide the development of the Environmental Protection Program for the proposed project. Implementation of the program is the practical application of the policy and will demonstrate Manitoba Hydro's dedication to environmental stewardship.

Adaptive management is being implemented within the Decommissioning Environmental Protection Program to be responsive and adaptive to changes to the project and on the landscape, stakeholder, and indigenous concerns, as well as inputs from our inspection and monitoring programs.

Document Owner
Transmission & Distribution Environment and Engagement Department
Project Management Division
Manitoba Hydro

Version - Final 1.0

List of Revisions

NUMBER	NATURE OF REVISION	SECTION(S)	REVISED BY	DATE

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1.0 Introduction

The purpose of this Decommissioning Environmental Protection Plan (DEnvPP) is to provide the requirements for the decommissioning of infrastructure installed to support construction of the Keewatinohk Converter Station (KCS) in a manner that meets environmental legislation requirements. Areas included in the DEnvPP are the camp pad, work pads, borrow N8, excavated material placement areas and all other infrastructure required to support construction of the Keewatinohk Converter Station not required for operation (Figure 2).

This document provides general and specific mitigation measures to reduce the potential for environmental effects that may occur during decommissioning construction support infrastructure. It is designed to be a resourceful, user-friendly tool to guide onsite implementation of environmental protection measures.

1.1 Overview of the Environmental Protection Plan

Part of Manitoba Hydro's commitment to environmental protection includes a comprehensive Environmental Protection Program. This program includes the development of environmental protection plans specific to each project. These plans provide general and specific environmental protection information for project components and is intended for use by project contractors, Manitoba Hydro decommissioning field personnel and environmental staff.

1.2 Document Amendment Process

An amendment process has been established to communicate the most current versions of environmental protection documents. There will be changes and revisions to these documents, because of changing regulations and the ongoing adaptive management process to improve environmental protection measures.

Manitoba Hydro's Transmission & Distribution Environment and Engagement (T&DEE) department must approve all field decisions and/or changes outlined in this plan.

1.3 Roles, Responsibilities and Reporting

This section outlines the major roles and responsibilities of those involved in the implementation of this plan. A summary of roles and key responsibilities is found in Table 1. Communication and reporting on environmental issues, monitoring and compliance is outlined in Figure 1. A contact list for key staff involved in supporting this plan is found in Appendix A.

Table-1: Environmental roles and responsibilities

Role	Key responsibilities
Manitoba Hydro Project Manager	<ul style="list-style-type: none"> • Accountable for all aspects of the decommissioning components in the project. • Oversees the Manitoba Hydro Contract Administrator or delegate. • Ensures all environmental plans, permits, authorizations, licences and approvals are in place for the project. • Ensures that all project activities are conducted in accordance with the DEnvPP and other project related permits, authorizations, licences, approvals, regulations and guidelines. • Issues environmental improvement and stop work orders as required for non-compliances. • Solicits feedback and supports the Manitoba Hydro T&DEE Converter Station Business Partner or delegate.
Manitoba Hydro Contract Administrator	<ul style="list-style-type: none"> • Reports to the Manitoba Hydro Project Manager • Administers the decommissioning contracts. • Works with the Manitoba Hydro T&DEE Converter Station Business Partner or delegate to ensure implementation of the DEnvPP. • Solicits feedback and supports the Manitoba Hydro T&DEE Converter Station Business Partner or delegate. • Will be on-site daily during decommissioning activities to ensure they are conducted in accordance with the DEnvPP and other project related permits, authorizations, licences, approvals, regulations and guidelines. • Ensures that both Manitoba Hydro personnel and all contractors are aware of the contents of the DEnvPP and other environmental approvals and related legislation. • Ensures that decommissioning activities cease at a particular location if heritage resources are discovered and contacts the Manitoba Hydro T&DEE Converter Station Business Partner or delegate. • Ensures that appropriate authorities are notified in emergency or incident situations. • Determines action or response to incidents or non-compliance situations. • Has the authority to issue stop work orders and improvement orders to the contractor. • Participates, if required, in a post-decommissioning inspection of the decommissioned area with Manitoba Environment and Climate

Table-1: Environmental roles and responsibilities

Role

Key responsibilities

to confirm compliance with the Environment Act Licence and identifies any deficiencies addressed.

Table-1: Environmental roles and responsibilities

Role	Key responsibilities
Manitoba Hydro T&DEE Converter Station Business Partner or delegate	<ul style="list-style-type: none"> • Provides advice and guidance on environmental protection matters. • Participates in orientation of environmental requirements to the contractor(s), their staff and Manitoba Hydro personnel. • Liaises with regional regulatory authorities and other regulatory authorities where required or applicable. • Provides advice and guidance to the Project Manager and Contract Administrator for non-compliance situations, environmental incidents and emergencies. • Provides support and guidance to contractors regarding the DEnvPP. • Monitors the project for compliance of the DEnvPP, Environmental License and other environmental regulatory requirements and accurate reporting into the project SharePoint site. • Responsible for implementing and ongoing compliance monitoring to ensure consistent and accurate reporting. • Monitors inspection reports and monitoring information, and prepares reports as required. • Confirms that all Environmentally Sensitive Sites are correctly identified, delineated and flagged/marked by the Construction Contractor in the field. • Conducts site inspections regularly and ensures that reports containing information on activities carried out as well as effectiveness of actions and outstanding issues are submitted to the project SharePoint site. • Participates, if required, in a post-decommissioning inspection of the decommissioned area with Manitoba Environment and Climate to confirm compliance with the Environment Act Licence and identifies any deficiencies addressed.

Table-1: Environmental roles and responsibilities

Role	Key responsibilities
Role	<ul style="list-style-type: none"> • Accountable for all regulatory and environmental approvals (follows the DEnvPP and mitigation measures). • Responsible for other permits as outlined in the “Environmental Licences, Approvals and Permits” table (Appendix B). • Ensure all contractor project staff are adequately trained/informed of pertinent environmental requirements of the Project related to their position. • Report any discoveries of non-compliance, accidents or incidents to the Manitoba Hydro Contract Administrator. • Ensure that all remedial actions are carried out as per Manitoba Hydro instruction. • Ensure all discoveries of heritage resources, human remains, paleontological finds and environmentally sensitive sites are reported to the Manitoba Hydro Contract Administrator.
Contractor’s Personnel	<ul style="list-style-type: none"> • Accountable to follow the DEnvPP and mitigation measures. • Report any discoveries of non-compliance, accidents or incidents to their Supervisor (the Contractor). • Ensures all discoveries of heritage resources, human remains, paleontological finds, environmentally sensitive sites, etc. are reported to their Supervisor (the Contractor). • Ensures that all remedial actions are carried out as per Manitoba Hydro instruction.

Table-1: Environmental roles and responsibilities

Role	Key responsibilities
Contractor's environmental representative	<ul style="list-style-type: none"> • Responsible for implementation, coordination and verification of pre-project employee environmental orientation. • Ensures that the contractor employees adhere to all aspects of the DEnvPP. • Provides information and advice to the construction contractor employees on environmental protection matters. • Responsible for implementation of the emergency response and hazardous materials plans, and other related topics. • Liaises with the Manitoba Hydro T&DEE Converter Station Business Partner or delegate. • Delineate and flag/sign all environmentally sensitive sites as identified in the field as per flagging and signage standards. • Identify, delineate and flag or mark all access, and other applicable boundaries in the field. • Identify any previously unknown Environmentally Sensitive Sites to the Manitoba Hydro Contract Administrator.

1.3.1 Environmental Protection

Manitoba Hydro will provide copies of all available permits, licences, approvals and authorizations obtained for the Project to the Contractor. Prior to commencing associated work, the Contractor will provide Manitoba Hydro with copies of all available permits, licences, approvals and authorizations obtained for the Project. Appendix B outlines responsibilities for obtaining Environmental Licences, Permits and Approvals.

Manitoba Hydro staff and Contractors will comply with this Decommissioning Environmental Protection Plan. Environmental aspects of the work including applicable licence/permit conditions will be discussed during environmental pre-job orientations, weekly progress meetings, and daily job planning meetings.

Without limiting or otherwise affecting the generality or application of any other term or condition of the contract, the Contractor shall:

- Strictly comply with all environmental legislation and have suitable corrective and/or preventive measures in place to address any previous environmental warnings, fines or convictions issued by regulatory agencies and/or Manitoba Hydro
- Do or cause to be done all things required or ordered, to mitigate environmental damage caused, directly or indirectly, by itself or by its servants, agents, employees or subcontractors, accidentally or as a result of practices that are in contravention of the contract or any environmental legislation

1.3.2 Documentation and Reporting

There is a requirement for the Contractor to provide reports and documentation to Manitoba Hydro in an acceptable digital format. During the Pre-Job Orientation, Manitoba Hydro will provide a list of all reporting and documentation submission requirements, timelines for submission, acceptable digital formats, and method of transmittal (i.e. Project SharePoint Site, email).

Examples of reports and documents that may be required are listed below (not an exhaustive list):

- Weekly environmental monitoring reports
- Spill reports
- Bird survey forms
- Copies of all permits and approvals acquired by the contractor
- Copies of any contractor developed plans such as emergency response and hazardous materials plans
- Environmentally related incident reports

1.3.3 On-site environmental representative(s)

Before commencing the on-site work, the contractor shall identify its on-site environmental representative(s) who shall attend the pre-job meeting

(environmental component) to review environmental matters for the work. The on-site contractor environmental representative(s) shall be fully conversant with:

- Contractor's environmental practices and policies
- All applicable environmental legislation
- The mitigation measures outlined in the DEnvPP

The contractor will ensure environmental representatives are in place to fulfill the commitments of the plan and any associated regulatory conditions associated with a project.

1.3.4 Environmental Improvement Orders

Failure to comply with the environmental protection section above or unsatisfactory performance regarding any other environmental-related matter may result in Manitoba Hydro issuing environmental improvement orders to the contractor.

The environmental improvement order, once communicated verbally or in writing, is considered "effective immediately." Manitoba Hydro will establish a compliance date for each environmental improvement order issued. The contractor must provide written documentation of the actions taken regarding the environmental improvement order as follows:

The contractor must:

- Within the expiry date of the period specified in the order or any extension thereof, prepare a written report on the measures taken to remedy the contravention, and on any measures yet to be taken.
- Send a copy of the report to the Manitoba Hydro representative who made the order as well as all individuals copied on the transmittal document.
- If applicable, provide a copy of the report to the employee(s) involved.
- Review the contravention with all employees at a regular weekly meeting and post in a prominent place at or near the worksite.

1.3.5 Manitoba Hydro Environmental Stop Work Order

Manitoba Hydro may issue an environmental stop work order where any activities which are being, or are about to be, carried on at a worksite, involve or are likely to involve an imminent risk of serious impact to the environment, or where a contravention specified in an environmental improvement order was not remedied and warning was given. The environmental stop work order, once communicated verbally or in writing is considered “effective immediately,” for any one or more of the following matters:

- The cessation of those activities
- That all or part of the worksite be vacated
- That no resumption of those activities be permitted by the contractor
- That a Manitoba Hydro issued stop work order remains in effect until it is withdrawn in writing by Manitoba Hydro
- That Manitoba Hydro will not be held responsible for delays to the work or be required to compensate the contractor for any matters arising as a result of the Manitoba Hydro issued environmental stop work order

Note: A Manitoba Hydro-issued environmental stop work order does not prevent the contractor from completing any work or activity that may be necessary to remove the risk of injury referred to above.

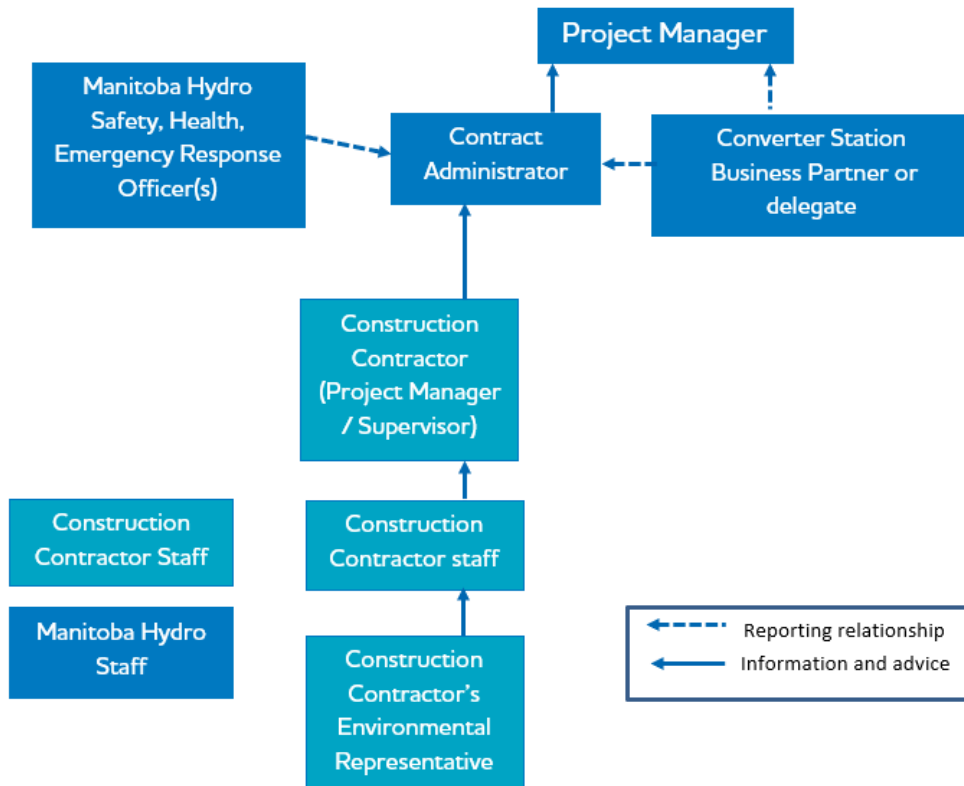


Figure 1: Environmental Communication Reporting Structure

1.4 Regulatory Requirements

All relevant regulatory approvals will be obtained by Manitoba Hydro prior to project activities. All documentation will be kept on-site by both the contractor and Manitoba Hydro personnel. Manitoba Hydro requires that its employees and contractors comply with all Federal and Provincial Regulatory requirements relating to the construction, operations and decommissioning of its projects and facilities. All decommissioning environmental licences, approvals and permits obtained can be found in Appendix B: Environmental Licences, Approvals and Permits.

2.0 Project Description/Decommissioning Scope of Work

2.1 Background

Manitoba Hydro was issued Environmental Act Licence (EAL) No. 3055 on August 14, 2013, for the Bipole III Transmission Project which includes the Keewatinohk Converter Station. The *Bipole III Transmission Project, Construction Environmental Protection Plan for Keewatinohk Converter Station Facilities and Infrastructure and Ground Electrode* includes mitigation for demobilizing and clean-up. The majority of the site rehabilitation work was completed shortly after the Converter Station went into commercial service in July 2018.

2.2 Scope of Work

The scope of work does not include operation of the Keewatinohk Converter Station (buildings, aggregate storage areas, staff housing and the maintenance of roads and yards). It includes the remaining Keewatinohk Converter Station Construction Infrastructure.

Wastewater Treatment & Collection System and Water Treatment and Distribution System

- Lift station components above the ground will be removed and disposed.
- Manholes will be cut off and removed to an elevation of 0.9 m below grade and the area backfilled with granular material. The below ground concrete chamber will be backfilled with granular material.
- Buried pipe will remain in place. All above ground portions of piping, connections, and fire hydrants that make up the wastewater collection and water distribution system will be cut off and removed to an elevation of 0.9 m below grade and backfilled with granular material.
- Water production and monitoring wells will be sealed by a certified well sealer, as per the Well Standards Regulation and documented as per the Groundwater and Water Well (General Matters) Regulation, both under the Groundwater and Well Water Act.

Main Camp Area

- Removing all temporary buildings from site.
- The steel piles (approximately 900) will be abandoned in place at an elevation 0.9 m below grade and backfilled with granular material or fully removed.
- Removing and disposing of concrete pads to Borrow N8.
- Power distribution and telecommunication services that are above the surface will be removed and all features below the surface will remain in place. All underground electrical service connections to buildings will be terminated 0.9 m below grade and area backfilled with granular material, or if cabling is less than 0.9 m below grade, will be removed entirely.
- Removing remaining infrastructure such as bollards and concrete traffic barriers.
- Remediation of any surface or subsurface soil contamination associated with the operation of KCS construction;
- Grading, site preparation or decompaction of ground to support revegetation of disturbed areas.
- Access will be retained.

Keewatinohk Converter Station Office Area

- Removing the above ground wastewater and water holding tanks.

EMPA 1A

- Removing all temporary buildings from site.
- Removing and disposing of concrete pads to Borrow N8.
- Remediation of any surface or subsurface soil contamination.
Grading, site preparation or decompaction of ground to support revegetation of disturbed areas. Access will be retained.

Borrow N8

- Concrete (with some embedded rebar and embedded hydronic heating poly piping) will be removed from main camp and EMPA 1A will be placed in N8 and covered over with existing pit fill.

Location Map

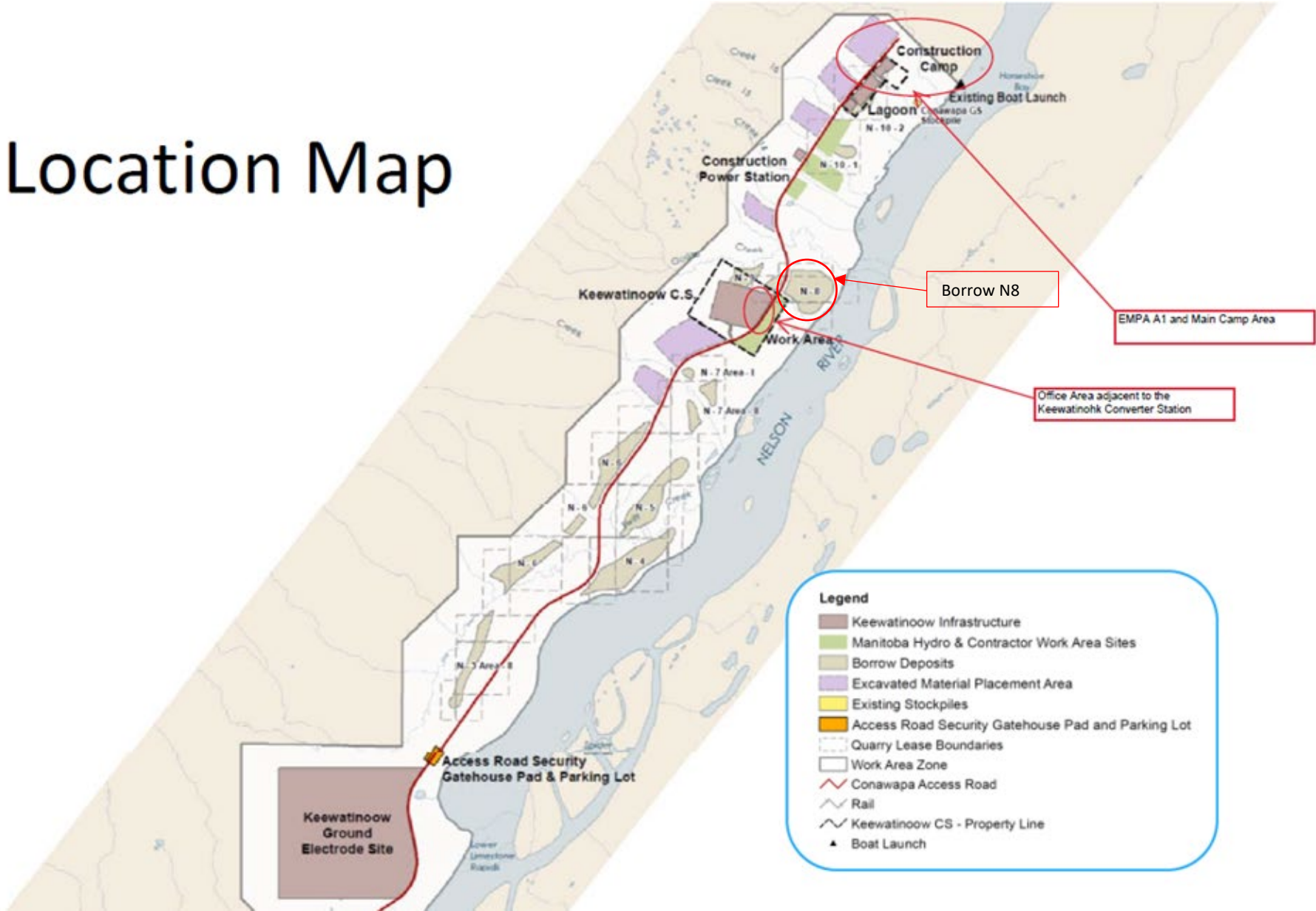


Figure 2: Location Map

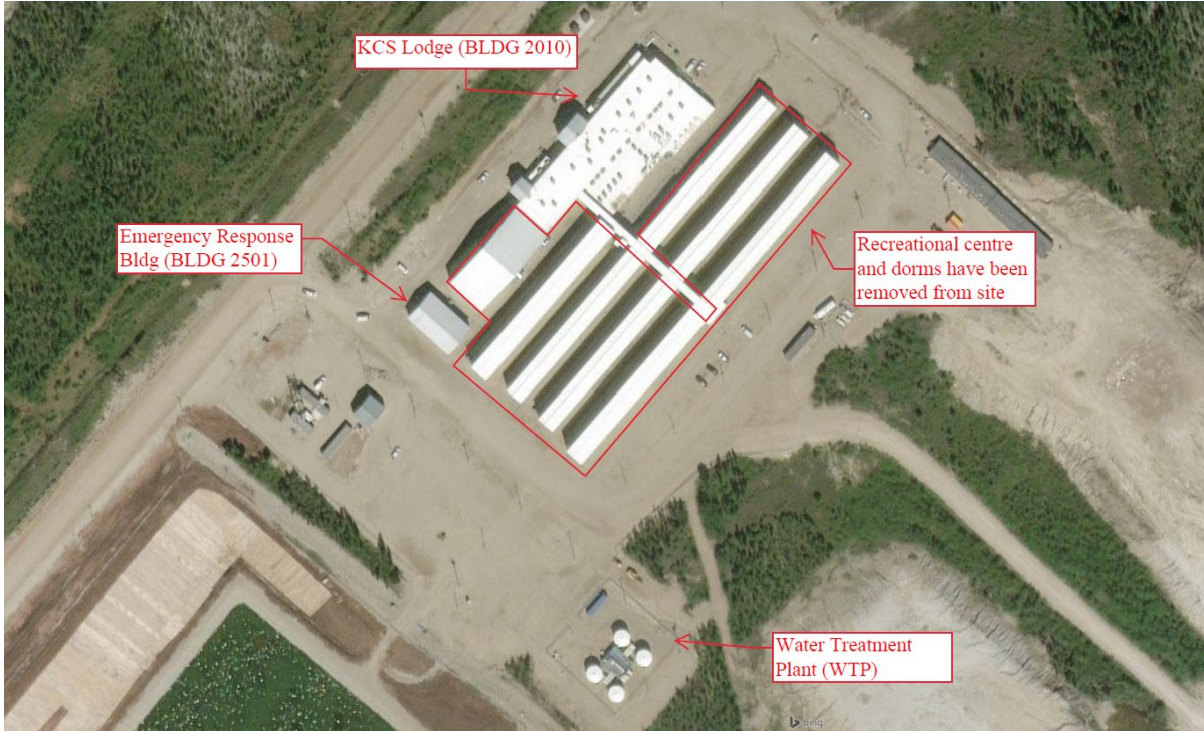


Figure 3: Aerial View of Main Camp Area



Figure 4: Front View of the Keewatinohk Lodge



Figure 5: Rear View of Main Camp Area as of July 2021

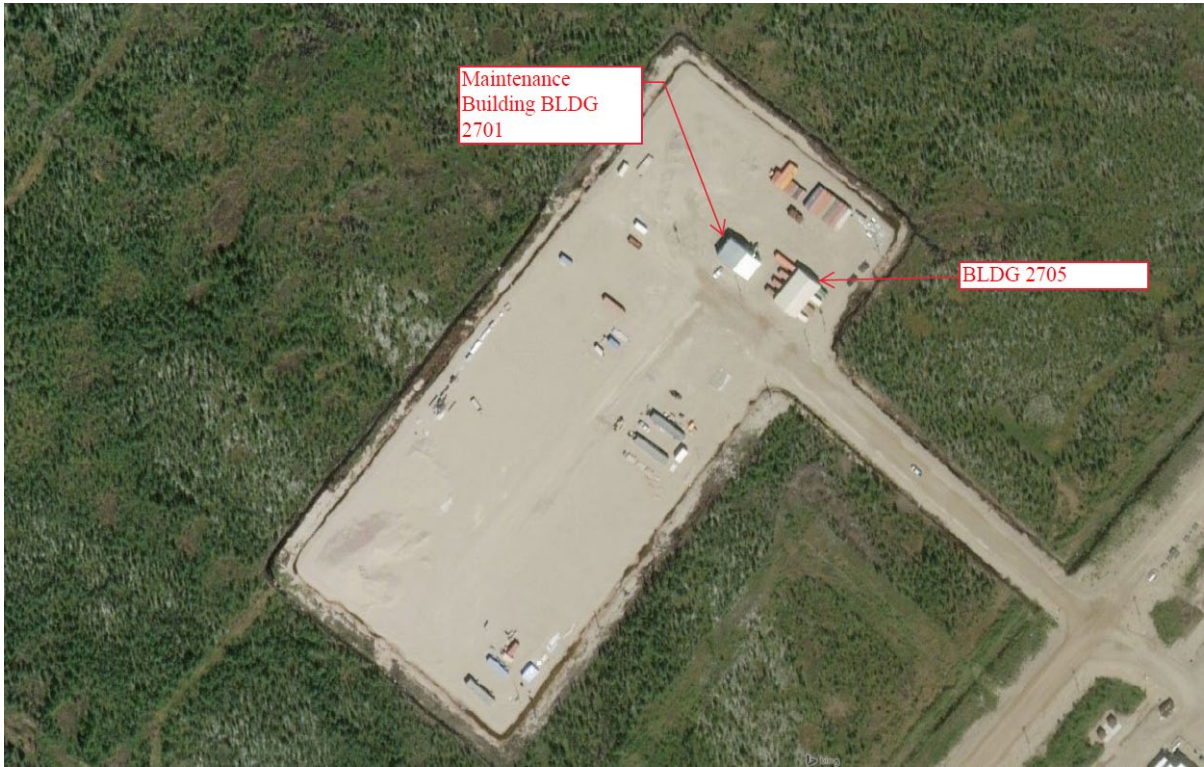


Figure 6: EMPA A1 Area



Figure 7: Office Area

3.0 Environmental Considerations

Important environmental considerations for pre-construction planning and construction activities are required at environmental sensitive sites (ESS), which include locations, features, areas, activities or facilities that were identified in the Bipole III Transmission Project Environmental Impact Statement to be ecologically, socially, economically or culturally important or sensitive to disturbance. These ESS require protection and mitigation during decommissioning of the Project. ESS include riparian areas, valued and protected vegetation, wildlife and habitats, cultural (heritage/archaeological and spiritual sites), unique terrain features, erosion- and compaction-prone soils, permafrost, and other important locations requiring specific protection (e.g., resource use, access).

3.1 Wildlife and Habitat

3.1.1 Timing windows

Appendix C outlines wildlife reduced risk work windows applicable to the Site. These windows are based on Federal and Provincial Regulatory requirements as well as best management practices. Timing periods may be expanded or refined based on further data collection and work permits to be issued for the project.

The recommended reduced risk timing windows table demonstrates periods of the year when wildlife species are sensitive to disruptive operations during calving, nesting, hibernation, etc. The "Timing windows" table (Appendix C) is intended to assist in scheduling decommissioning activities for times of year when risks and impacts are minimized. Where conflicting timing restraints with decommissioning activities exist, appropriate mitigation will be implemented to reduce effects.

3.1.2 Birds and habitat

Birds and their habitat are particularly vulnerable during the breeding season when they mate, lay eggs and raise their young, as they are not able to relocate away from areas of disturbance. Migratory birds, such as geese, ducks, songbirds, water birds and their habitat are protected by federal regulation, which prohibits killing, harassing, disturbance or destroying birds, nests and eggs.

Should decommissioning activities be required during breeding bird timing windows (see "Timing windows" table in Appendix C), refer to the avian protection documents found in Appendix F. This decision tree will help to apply the appropriate approach (Appendix F-3) and the management document (Appendix F) will assist in what to do before, during and after a nest is detected. Through this process, Manitoba Hydro and its contractors will reduce the effects to birds and continue to meet regulatory compliance requirements.

3.1.3 Reptiles/amphibians

Areas where reptiles and amphibians, such as garter snakes, frogs and toads, mate and lay eggs (i.e. breed) are sensitive to ground disturbance. Heavy equipment traffic and ground clearing activities that coincide with breeding activities can have a measurable effect on local populations. Further, Manitoba is home to unique and endangered reptiles and amphibians, that are protected by legislation and policy. Mortality could increase during decommissioning activities, due to increased road traffic.

Amphibians should be assumed present in all wetland or shallow water areas supporting emergent vegetation (cattails, bulrushes, lily pads) during the amphibian emergence and breeding period (April 1st to August 15th). Where decommissioning activities occur during this period, mitigation measures will be prescribed on a site-by-site basis, such as those found in the Reptile and Amphibian protection document found in Appendix G.

3.1.4 Wildlife

If there are encounters with wildlife they will be reported to the Contractor Administrator and Transmission & Distribution Environment and Engagement Department. Problem wildlife should be reported directly to the local Manitoba Environment, Climate & Parks district office in The Pas at (204) 627-8287.

The risk of wildlife-vehicle collisions may be probable, care should be taken when driving on the access roads and highways. Interactions with polar bears, while infrequent, do occur near the Site. Care and caution should be taken, and if a polar bear is spotted, report the occurrence directly to the local Manitoba Environment, Climate & Parks district office in The Pas at (204) 627-8287.

3.1.5 Species of concern

Species of concern can include rare vascular plants, rare non-vascular plants, rare wildlife species, and rare ecological communities. Additional mitigation measures may be developed by Manitoba Hydro in consultation with a qualified biologist and, when necessary, the appropriate regulatory authority.

3.1.5.1 Species of concern discovery

If rare plants, wildlife species or rare ecological communities are discovered during the decommissioning activities, suspend work immediately in the vicinity of any newly discovered species of concern and follow the measures outlined in "Species of Concern contingency measures" document found in Appendix H. Further information regarding the discovery of bird nests can be found in Appendix F.

3.1.6 Setbacks and Buffers

Setbacks and buffer distances from sensitive environmental features are provided in Appendix D.

The setbacks and buffers may be expanded or refined based on further data collection and work permits to be issued for the project.

Setbacks are areas to be maintained from a given environmental feature where no work shall occur unless authorized by the Contract Administrator or Manitoba Hydro Converter Station Business Partner or delegate.

Buffers are work areas where restricted activities such as low impact vegetation management are permitted. Where applicable, site specific setbacks and buffers are prescribed in specific mitigation measures.

See Appendix D for flagging and signage standards.

Where applicable, site specific setback and buffers will be prescribed in specific mitigation measures for each Environmentally Sensitive Site.

3.2 Soils

Nearly all portions of the project footprint are already disturbed. Topsoil and peat are largely absent. Decommissioning activities must remain on previously disturbed areas unless approved by Manitoba Hydro in writing.

During the rehabilitation of the construction phase of the Keewatinohk Converter Station and associated facilities a number of areas underwent re-vegetation and erosion and sedimentation control. Travel, equipment staging, etc. is not permitted in re-vegetated areas. Any new areas that become disturbed during the decommissioning phase of the site will also be subject to erosion and sedimentation control as outlined in the general mitigation tables (See Section 6 Mitigation Table EI-3).

3.2.1 Encountering unexpected contamination

While working on the Site, Manitoba Hydro or contractors may encounter contamination during decommissioning activities. Contamination at Manitoba Hydro project sites may have resulted from historical spills or leaks of fuels, oils, lubricants, and coolants. Manitoba Hydro may conduct environmental site assessments at the camp area prior to decommissioning to determine if contamination exists within the decommissioning area. If contamination exists, remedial action plans will be prepared.

See “Guidance for contaminated soils or groundwater identification and disposal” found in the Appendix I for more information.

3.3 Cultural and heritage resources

Archaeological sites, or sites where historic and pre-historic artefacts of human activity are found, are sensitive to disturbance and loss from ground disturbance activities, such as clearing and excavation. Artefacts may include tools and objects, such as arrowheads, pottery shards or bottles or burial sites and human remains. These sites and objects are protected under legislation as a part of our common heritage. Manitoba Hydro is committed to protecting and preserving the

environment including cultural landscapes and heritage resources affected by decommissioning activities.

The Cultural and Heritage Resources Protection Plan (CHRPP; Appendix E) is part of the environmental protection program. The CHRPP includes a resources identification guide to help determine if objects found on site might be cultural or heritage resources. Upon the discovery of unrecorded cultural and heritage resources, Manitoba Hydro and contractors will follow the steps outlined in Section 1.8 and applicable Protocols of the CHRPP.

The CHRPP sets out Manitoba Hydro's commitment to safeguard cultural and heritage resources and appropriately handle human remains or cultural and heritage resources discovered or disturbed during the lifecycle of the project.

There are existing cultural and heritage sites identified within the converter station boundaries.

3.4 Environmentally Sensitive Sites

Environmentally sensitive sites (ESS) have been identified for the Site, see Part B Map books. ESS are locations, features, areas, activities or facilities that were identified in the Project Environmental Impact Statement (EIS) to be ecologically, socially, economically or culturally important or sensitive to disturbance and require protection during construction, operation and decommissioning of the project. The determination of the Environmentally Sensitive Sites has included the consideration of Indigenous traditional knowledge.

Map books have been developed for the project to present the location and spatial extent of Environmentally Sensitive Sites. Each map will have corresponding tabular summary information including Environmentally Sensitive Site feature information and relevant mitigation measures to address the potential environmental effects at each site.

4.0 Decommissioning Environmental Protection Plan Orientation and Awareness

4.1 Pre-job meeting (environmental component)

A pre-job meeting will be held between the contractor (Contractor, Contractor Personnel and Contractor Environmental/Safety representative(s)) and Manitoba Hydro (Project Manager, Contract Administrator, T&DEE Converter Station Business Partner and/or delegate, and the Manitoba Hydro Project Safety Officer). Upon completion of the meeting, all individuals present at the orientation, both Manitoba Hydro and the contractor representatives, will sign the "Environmental pre-work orientation record" found in the Appendix J.

The environmental portion of this meeting will include the following:

- A review of Manitoba Hydro's environmental principles and key environmental specifications of the contract
- Transfer of further relevant information or precautions that Manitoba Hydro is aware of, and which pertain to the job
- Procedures/requirements for dealing with environmental stop work orders or improvement orders
- Reporting of environmental incidents and emergencies
- Documentation needs including the review of all pertinent forms (i.e. job planning form; environmental checklist)
- Requirement to educate/train all project employees with respect to the requirements of the DEnvPP

The contractor shall communicate to all field supervisors, sub-contractors and work crews the work specifications, environmental requirements and information provided during the pre-job meeting and notify the T&DEE Converter Station Business Partner and Contract Administrator in writing when it has been completed.

4.2 Contractor start-up meeting

A pre-work orientation meeting is held by the contractor with field crews prior to the initiation of work to ensure that they are aware of the environmental requirements of work at that location. Should project conditions dictate a change in work location, another start-up meeting may be convened.

The contractor is required to ensure minutes, attendance records, and all other pertinent information is recorded and distributed. Manitoba Hydro will attend and if asked could provide an overview of the environmental concerns / Environmentally Sensitive Sites.

In situations where a new employee joins the project, it is the responsibility of the contractor's environmental representative to ensure that that employee has been provided with the necessary information and/or training related to the environmental aspects of the project. The contractor will be required to document all instances of new employees to demonstrate that they have received the necessary training.

4.3 Weekly progress meetings

Senior field staff will meet on a weekly basis to review and discuss progress to date and planned upcoming work. These meetings will also review environmental requirements of the job and environmental precautions necessary. Manitoba Hydro will be responsible for the maintenance of meeting notes/documents related to these meetings.

4.4 Daily job planning meetings

Field crew job planning meetings will be held daily prior to the commencement of any work. The daily job-planning meeting will include a review of environmental requirements of the planned work and the applicable environmental precautions. All job planning meetings, including the environmental content, shall be documented by the contractor.

5.0 Contractor-Developed Environmental Management Plan

Decommissioning contractors will be required to develop environmental management plans as part of the Environmental Protection Program for this project component.

The contractor shall be responsible to develop and implement specific plans for its work as follows:

- Emergency response plan
- Hazardous substances management plan
- Spill response plan
- Waste management plan
- Erosion and sediment control plan

These plans will be included as Appendix K when approved by the Manitoba Hydro T&DEE Converter Stations Business Partner or delegate.

6.0 Environmental mitigation requirements

Contractors must follow all mitigation measures identified to protect the environment, including environmental sensitive sites (ESS). Two types of mitigation measures must be followed:

- General mitigation measures apply to all project areas
- Specific mitigation measures apply to individual ESS

NOTE: Site specific mitigation measures found in Map sheets will override the general mitigation measures found below.

6.1 General mitigation requirements

Manitoba Hydro has developed general mitigation measures for a variety of activities that can impact the environment. Decommissioning considerations required for all Site areas are considered general mitigation and are applicable to all decommissioning areas.

There is overlap and duplication of mitigation measures amongst the below categories; this allows the user to look up actions they must perform by different categories. The general mitigation measures are provided under the following five categories:

- 1) Management (MM)
- 2) Project activity (PA)
- 3) Project component (PC)
- 4) Environment component (EC)
- 5) Environmental issue (EI)

(MM) Management environmental protection measures include management, contractual, administrative and other measures that are common to all environmental protection categories and topics.

(PA) Project activity environmental protection measures include decommissioning activities that are likely to cause direct environmental effects.

Project activities are action words or phrases that are carried out during decommissioning of the Project.

(PC) Project component environmental protection measures relate to major components of the Project. The project includes decommissioning activities occurring on the footprint of the main camp, EMPA 1A, KCS office area and Borrow N8.

(EC) Environmental component protection measures include important or vulnerable components of the environment that are subject to environmental effects of the Project. An environmental component particularly vulnerable to decommissioning is the heritage site.

(EI) Environmental issue and topic protection measures include important issues and topics identified for the Project. Environmental issues and topics include emergency response, erosion/sediment control, hazardous substances, petroleum products and soil contamination.

6.2 General mitigation tables

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Access roads and trails (PC-1)AA	
ID	Mitigation
PC-1.02	Access roads and trails required for future monitoring, inspection or maintenance will be maintained.
PC-1.05	Access roads and trails will be provided with erosion and sediment control measures in accordance with the Erosion and Sediment Control Plan.
PC-1.09	Contractors will be restricted to established roads, trails and cleared construction areas.
PC-1.11	Equipment, machinery and vehicles will only travel on cleared access roads and trails.
PC-1.14	No chemical melting agents are to be utilized.
PC-1.15	Only water and approved dust suppression products will be used to control dust on access roads where required. Oil or petroleum products are not permitted.
PC-1.19	Surface water runoff will be directed away from disturbed and erosion-prone areas but not directly into waterbodies.
PC-1.20	Vegetation control will occur along access roads and trails. Noxious and invasive vegetation must be controlled in these areas.
PC-1.25	Heavy equipment will not be allowed access to MI roadways without the appropriate protection and permits.
PC-1.26	For access roads and trails that use or cross MI roadways, care will be taken to ensure excessive amounts of material are not tracked onto the roadway, with the contractor being responsible for cleanup.
PC-1.31	The contractor is required to install and maintain access road signage indicating road or trail number as per signage standards.

Borrow Pits And Quarries (PC-2)	
ID	Mitigation
PC-2.03	Borrow pits and quarries will be operated in compliance with Mines and Minerals Act.
PC-2.08	Fuel storage will not be permitted near stockpiles or within quarry areas as outlined in PC 2.21.
PC-2.09	Garbage, debris or refuse will not be discarded into borrow pits and quarries.
PC-2.10	Only water and approved dust suppression products will be used to control dust on access roads where required. Oil or petroleum products will not be used.
PC-2.13	Signs will be posted at borrow pits and quarries to warn all persons of safety hazards.
PC-2.18	Worked out borrow pits and granular quarries will be left with maximum 4:1 (horizontal to vertical) side slopes.
PC-2.23	Borrow pits will be accessed using existing access routes and rights-of-way. Acceptance of the access location by the Project Manager will be required.

Burning (PA-2)	
ID	Mitigation
PA-2.01	All occurrences of fire spreading beyond the debris pile will be reported immediately to the Contract Administrator in accordance with work permit conditions.
PA-2.02	Any residue or unburned materials remaining post-burn must be kept separate from operations or re-vegetating activities.
PA-2.03	Burning of slash on permafrost soils should be avoided. If it is unavoidable, approval from the Project Manager or delegate in consultation with the Manitoba Hydro T&DEE Converter Station Business Partner must be obtained.
PA-2.04	Burning of solid wastes including kitchen wastes and treated wood will not be permitted.
PA-2.05	Burning will be monitored to ensure that fires are contained and subsequent fire hazards are not present. All burn piles will be scanned for hot spots using infrared scanning technology.
PA-2.07	Burning will only be carried out in accordance with provincial work permits. A Burn Permit is required between April 1 and November 15.
PA-2.08	Debris and wood chip piles located near habitation or highways will only be burned when weather conditions are favourable to ensure the safe dispersal of smoke and in accordance with burn permits when applicable.
PA-2.09	Debris piles scheduled for burning will be piled on mineral soils or exposed bedrock where possible.
PA-2.10	Firefighting equipment required by legislation, guidelines and contract specifications will be kept on site and maintained in serviceable condition during burning.

Burning (PA-2)	
	Monitor and obey all Manitoba Environment and Climate burn bans that they may enact during decommissioning activities.

Construction Camps (PC-3) (if applicable)	
ID	Mitigation
PC-3.01	A food handling permit will be obtained from the local public health inspector prior to the operation of kitchens.
PC-3.02	Animal and bear-proof garbage containers with regular removal of food waste to approved waste management facilities will be used to manage food waste.
PC-3.03	Construction camp sites will be kept tidy at all times. Waste materials including litter will be collected for disposal.
PC-3.04	Construction camps will be located based on criteria that consider soil type, topography, land form type, wildlife habitat and other environmental factors.
PC-3.05	Crown land permits will be obtained for construction camps as required.
PC-3.06	Erosion sediment control in accordance with the Erosion and Sediment Control Plan and drainage management measures will be put in place prior to construction where applicable.
PC-3.07	Feeding or harassment of any wildlife is prohibited.
PC-3.08	Firebreaks will be constructed around camp locations where there is a risk of fire.
PC-3.09	Hunting and harvesting of wildlife and fish by project staff will not be permitted while working on the project sites.
PC-3.10	Liquid and solid sewage wastes held in tanks will be removed in accordance with the Waste and Recycling Management plan by a licensed contractor and taken to licensed or approved disposal areas.
PC-3.11	Problem wildlife will be reported immediately to Manitoba Hydro and the nearest Manitoba Environment and Climate office.

Construction Camps (PC-3) (if applicable) A	
PC-3.12	Propane tanks for camp use will be stored in dedicated, vehicle protected and secure areas at a safe distance from kitchen and sleeping quarters in accordance with provincial legislation and national codes.
PC-3.13	Sewage and grey water holding tanks will be sited in accordance with provincial legislation, and federal and provincial guidelines, and a minimum of 100 m from the ordinary high water mark of any waterbody.
PC-3.14	Sewage and grey water will be collected in holding tanks and chemical toilets.
PC-3.15	Spill control and clean-up equipment and materials will be provided for construction camps in accordance with the Contractor's Emergency Preparedness and Response Plan.
PC-3.18	Waste and recyclables will be sorted, segregated and removed in accordance with the Waste and Recycling Management Plan to a licensed or approved waste management facilities site and/or recycling facility.
PC-3.19	Food, greases and wastes will be stored in sealed, air-tight containers and managed as per PA-3.2.
PC-3.21	As marshalling yards, borrow sources, temporary workspaces, work camps are identified or route changes required, additional heritage monitoring activities may be required to be conducted prior to approval.
PC-3.22	Burning of solid wastes including kitchen wastes will not be permitted.

Demobilizing and Cleaning Up (PA-4)A	
ID	Mitigation
PA-4.01	Temporary buildings, structures, trailers, equipment, utilities, waste materials, foundations, etc. will be removed from decommissioning areas and sites when work is completed.
PA-4.03	After demobilizing and clean-up, decommissioning areas and sites will be assessed by Manitoba Hydro for rehabilitation.
PA-4.05	Petroleum product and other temporary hazardous material storage areas will be cleaned up, assessed and, if necessary, remediated in accordance with provincial guidelines and Manitoba Hydro guidelines.
PA-4.06	Water crossings, ditches and drains will be left free of obstructions so as not to impede water flow.
PA-4.07	Manitoba Hydro will inspect decommissioned construction areas and sites after demobilization and clean-up for adherence to environmental protection measures and effectiveness.

Draining (PA-5)	
ID	Mitigation
PA-5.04	Drainage water from decommissioning areas will be diverted through vegetated areas, existing drainage ditch(s) or a means of sediment control prior to entering a waterbody.
PA-5.05	Erosion protection and sediment control will be provided in accordance with the Erosion Protection and Sediment Control Plan.
PA-5.06	Existing, natural drainage patterns and flows will be maintained to the extent possible.
PA-5.07	No debris or slash is allowed to be placed in drainage channels/ditches.
PA-5.08	Drainage ditches will be provided with elevation controls to prevent water ponding.
PA-5.10	Drainage channels and ditches will be identified and flagged prior to construction.
PA-5.11	Disturbance of natural drainages including seepage areas, discharge and recharge areas, wetlands, and ephemeral and permanent watercourses will be avoided.
PA-5.12	Where decommissioning must be carried out within a drainage channel, water will be diverted around the work until completed in accordance with the contract specifications.
PA-5.13	Dewatering of excavations or alterations to existing drainage patterns will be done so that it avoids entering natural water systems unless sediment is controlled.

Drilling (PA-6)A	
ID	Mitigation
PA-6.01	Abandoned wells and drill holes will be sealed with bentonite or other effective sealers to prevent interconnection and cross-contamination of ground and surface waters. Wells are to be sealed by a certified well sealer, as per the Well Standards Regulation, under the Groundwater and Well Water Act.
PA-6.03	Sealing equipment and machinery will not be serviced within 100 m of waterbodies or riparian areas.
PA-6.04	Sealing fluids and waste materials will be contained and not allowed to drain into waterbodies, riparian areas or wetlands.
PA-6.08	Spill control and clean-up equipment will be provided at all well sealing locations.
PA-6.10	The sealing contractor will inspect drilling equipment and machinery for fuel and oil leaks prior to arrival at the project site and will inspect for fuel and oil leaks and spills regularly.

Emergency Response (EI-2)AA	
ID	Mitigation
EI-2.01	All fires will be reported in accordance with fire reporting procedures in the Emergency Preparedness and Response Plan.
EI-2.02	All spills at decommissioning sites will be immediately reported in accordance with provincial legislation and Manitoba Hydro guidelines. All releases will be reported to the Manitoba Hydro Contract Administrator. The Contractor will also report provincially reportable spills to Manitoba Environment and Climate.
EI-2.03	All vehicles hauling petroleum products will carry spill containment and clean-up equipment.
EI-2.04	Clean-up and disposal of contaminated materials will be managed in accordance with provincial guidelines and Manitoba Hydro guidelines.
EI-2.05	Contractor Emergency Preparedness and Response Plans and procedures will be communicated to all project staff and a copy will be made available at the project site.
EI-2.06	Emergency spill response and clean-up materials and equipment will be available at construction sites, marshaling yards, fuel storage facilities and standby locations.
EI-2.07	Fire extinguishers will be mounted on buildings, equipment and vehicles where they will be most readily accessible. Safety officers will conduct monthly and annual inspections of fire extinguishers.
EI-2.08	Orientation for contractor and Manitoba Hydro employees working in decommissioning areas will include emergency response awareness.
EI-2.09	Contractor to conduct investigations of all provincially reportable spills and fires to ensure that procedures are followed and plans remain effective. Incident reports are required for all spills.

Emergency Response (EI-2)AA	
ID	Mitigation
EI-2.10	Project emergency response and evacuation procedures in the Emergency Preparedness and Response Plan will be adhered to in the event of forest fires.
EI-2.11	Reasonable precautions will be taken to prevent fuel, hydraulic oil, lubricant, fluids or other products from being spilled during equipment operation, fueling and servicing.
EI-2.12	Spill response and clean up equipment will be available for responding to releases for a site location.
EI-2.13	Temporary construction camps will have a designated fire marshal in accordance with the Emergency Preparedness and Response Plan.
EI-2.14	The Emergency Preparedness and Response Plan will be prepared by the contractor, approved by the Manitoba Hydro T&DEE Converter Station Business Partner or delegate prior to decommissioning and updated annually.
EI-2.15	The hazardous materials incident report form will be completed when reporting a spill.
EI-2.16	Should a forest fire be caused by project activities, it must be reported to Manitoba Environment and Climate and to Manitoba Hydro immediately.
EI-2.17	Firefighting equipment required by legislation, guidelines, contract specifications and work permits will be kept on site and maintained in serviceable condition.

Erosion and sediment control (EI-3)AA	
ID	Mitigation
EI-3.01	Accumulated sediment will be removed from silt fences and other barriers in accordance with the Erosion and Sediment Control Plan to ensure proper functioning.
EI-3.03	Contractor specific Erosion Protection and Sediment Control Plans will be prepared by the contractor, approved by the Project Manager or delegate, prior to construction and updated annually.
EI-3.04	Erosion and sediment control installations will only be removed after disturbed areas are protected and sediments are disposed of in accordance with Erosion and Sediment Control Plan.
EI-3.05	Erosion and sediment control measures will be left in place and maintained until either natural vegetation or permanent measures are established.
EI-3.06	Erosion and sediment control measures will be put in place in accordance with the Erosion and Sediment Control Plan prior to commencement of construction activities and will remain intact for the duration of the project.
EI-3.08	The contractor will be responsible for implementing the Erosion and Sediment Control Plan with procedures put in place prior to commencement of applicable decommissioning activities.
EI-3.09	The contractor will be responsible for monitoring and, if required, maintaining and/or modifying erosion and sediment control installations to ensure continued effectiveness.
EI-3.10	The contractor will communicate the requirement to follow the Erosion and Sediment Control Plan to all project staff and a copy will be made available at the project site.

Erosion and sediment control (EI-3)AA	
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EI-3.11	The Manitoba Hydro Contract Administrator will make inspections of erosion and sediment control measures to confirm implementation and continued effectiveness.
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Grading (PA-7)A	
ID	Mitigation
PA-7.01	A thick gravel layer (1.2 m) or compacted snow layer (0.6 m) will be used in temporary workspaces or marshalling yards located in permafrost areas where required to prevent damage to surface materials.
PA-7.02	Grading for gravel pads for construction areas and access roads will be limited to areas where it is needed for the safe and efficient operation of vehicles, machinery and construction equipment.
PA-7.04	Grading will not be permitted within established buffer zones and setback distances from waterbodies.
PA-7.05	Grading will only be permitted within construction areas.
PA-7.06	Gravel pads will be graded so the surface runoff is directed away from waterbodies, riparian areas and wetlands.
PA-7.07	Required erosion protection and sediment control measures will be put in place prior to grading in accordance with the Erosion Protection and Sediment Control Plan.

Groundwater (EC-4)AA	
ID	Mitigation
EC-4.02	Well locations will be marked with flagging tape prior to decommissioning.
EC-4.03	Where there is potential for a mixing of surface and groundwater, precautions will be taken to prevent the interconnection of these waters.
EC-4.04	The Contractor must submit a plan to the Manitoba Hydro T&DEE Converter Station Business Partner describing how former potable production groundwater wells will be sealed and decommissioned. This should include surface water requirements and control and disposal of drill flush and excess waste grout. The Contractor must also submit certified Sealing Certificates to the Manitoba Hydro T&DEE Converter Station Business Partner from the decommissioned wells. The Contractor must inform the province that the well is decommissioned.

Hazardous materials (EI-4)AA	
ID	Mitigation
EI-4.01	A contractor specific Hazardous Substances Management Plan will be prepared by the contractor and approved by the Manitoba Hydro T&DEE Converter Station Business Partner or delegate prior to decommissioning.
EI-4.02	Access to hazardous materials storage areas will be restricted to authorized and trained contractors and Manitoba Hydro personnel.
EI-4.03	An inventory of WHMIS controlled substances will be prepared by the contractor and maintained at each project site and updated as required by provincial legislation.
EI-4.04	Bulk waste oil will be stored in approved aboveground tanks provided with secondary containment in accordance with provincial legislation.
EI-4.05	Containers of hazardous substances stored outside will be labeled, weatherproof, placed on spill containment pallets, inside a berm and/or collision protection.
EI-4.06	Contractor personnel will be trained and certified in the handling of hazardous materials, including emergency response procedures in accordance with provincial legislation.
EI-4.07	Contractor personnel will receive WHMIS training in accordance with provincial legislation.
EI-4.08	Controlled substances will be labeled in accordance with WHMIS requirements. Required documentation will be displayed and current Safety Data Sheets will be available at each project site in accordance with the Hazardous Substances Management Plan.
EI-4.09	Empty hazardous waste containers will be removed to a licensed or approved disposal site by the contractor.

Hazardous materials (EI-4)AA	
EI-4.10	Hazardous materials storage sites will be secured, and signs will be posted that include hazard warnings, contacts in case of a release, access restrictions and under whose authority access is restricted.
EI -4.11	Hazardous materials will be adequately contained and will be protected from wind and rain to prevent entry of fine particles into streams through runoff of dust deposition.
EI-4.13	Hazardous substances management procedures will be communicated to all project staff and a copy will be made available at the project site.
EI-4.14	Hazardous substances storage areas will be located a minimum of 100 m from the ordinary high water mark of a waterway and above the 100-year flood level.
EI-4.15	All hazardous materials including petroleum products will be transported according to the procedures prescribed by provincial and federal legislation.
EI-4.16	Hazardous waste materials will be segregated and stored by type in approved containers within a secondary containment system.
EI-4.17	Indoor storage of flammable and combustible substances will be in fire resistant and ventilated enclosed storage area or building in accordance with national codes and standards.
EI-4.18	Contractor to provide Manitoba Hydro Contract Administrator with a list of all hazardous materials prior to their arrival on-site.
EI-4.19	Non-hazardous products will be used in place of hazardous substances to the extent possible.
EI-4.20	Orientation for contractors and Manitoba Hydro employees working in construction areas will include hazardous substance awareness.

Hazardous materials (EI-4)AA	
EI-4.22	The contractor will be responsible for the safe use, handling, storage and disposal of hazardous materials including waste as well as procedures for emergency conditions in accordance with provincial and federal legislation and standards.
EI-4.23	The contractor will monitor hazardous substance containers regularly for leaks and ensure that labels are legible and prominently displayed.
EI-4.24	The Manitoba Hydro Contract Administrator or delegate will make routine inspections of hazardous substance storage sites to confirm that environmental protection measures are implemented and effective.
EI-4.25	Waste oil will be transported by licensed carriers to licensed or approved waste oil recycling facilities.
EI-4.26	Wet batteries will be stored and transported to licensed or approved waste recycling facilities.
EI-4.27	Hazardous waste can be stored temporarily for no longer than 30 days before removal to a licensed or approved disposal site.
EI-4.28	Temporary hazardous material storage containers will be located on level ground and within a structure that is covered by roofing preventing precipitation from entering the storage area or the secondary containment system

Heritage Resources (EC-5)A	
ID	Mitigation
EC-5.01	All archaeological finds discovered during site decommissioning will be left in their original position until the Contract Administrator is contacted and further direction is provided.
EC-5.03	Environmental protection measures for heritage resources will be reviewed with the contractor and employees prior to commencement of any decommissioning activities.
EC-5.04	Orientation for project staff working in construction areas will include heritage resource awareness and training including the nature of heritage resources and the management of any resources encountered.
EC-5.05	Orientation information will include typical heritage resource materials and reporting procedures.
EC-5.06	The contractor will report heritage resource materials immediately to the construction supervisor. Construction activities will cease in the immediate vicinity until the project archaeologist is contacted and provides further instruction.
EC-5.07	The Culture and Heritage Resource Protection Plan will be adhered to during decommissioning activities.
EC-5.09	Additional heritage monitoring activities may be required should previously undisturbed areas be required for project purposes.

Management Measures (MM)AA	
ID	Mitigation
MM-01	All licenses, permits, contracts, project specifications, guidelines and other applicable documents will be in the possession of both the Contractor and Manitoba Hydro prior to commencement of work.
MM-02	All project participants will ensure that project activities are carried out in compliance with applicable legislation, guidelines, contractual obligations and environmental protection plan provisions.
MM-03	Environmental concerns will be identified and discussed at project execution meetings on an as required basis.
MM-04	Manitoba Hydro will notify First Nations leadership of active construction schedules, prior to project start-up as per project Communication Plan.
MM-05	Manitoba Hydro will contact Town of Gillam representatives prior to project start-up as per project Communication Plan.
MM-06	Manitoba Hydro will contact local resource users, lodge operators, outfitters and recreational resource users and associations to the extent feasible and practical prior to project start-up as per project Communication Plan.
MM-08	Manitoba Hydro will meet the contractor at the beginning of each new contract to review environmental protection requirements including mitigation measures, inspections and reporting.
MM-11	Project construction update meetings will be held weekly and include discussion of environmental and safety issues.
MM-12	Relevant documents including licenses, permits, approvals, legislation, guidelines, environmental protection plans, orthophotos maps, etc. will be made available to project participants.

Management Measures (MM)AA	
MM-14	The contractor will obtain all licenses, permits, contracts and approvals other than those that are Manitoba Hydro's responsibility prior to project start-up.
MM-15	The contractor will review terms and conditions of all authorizations, contract specifications, agreements, etc. prior to project start-up or as authorizations are acquired and will discuss any questions or concerns with Manitoba Hydro.
MM-16	In areas of active construction, the contractor must provide Manitoba Hydro representatives with full and unrestricted access to the decommissioning site and all project related work areas so that inspections can occur.
MM-17	The DEnvPP and Map Sheets will be available at the project sites.
MM-18	The contractor's environment representative is responsible for the delineation and flagging of all identified project environmentally sensitive sites as per DEnvPP.
MM-19	The contractor must submit all contractor developed environmental plans to Manitoba Hydro before work on the project can commence, the plan may be updated as required.
MM-20	Aside from service animals, pets are not permitted on active construction project sites.
MM-22	Temporary workspaces are prohibited from being placed within ESS without written approval from Manitoba Hydro, exceptions may be subject to Manitoba Environment and Climate approval.

Marshaling Yards (PC-5)AA	
(These measures may also apply to temporary workspaces, staging areas, material placement areas etc.)	
ID	Mitigation
PC-5.01	Contractor employees responsible for receipt and distribution of hazardous substances will be trained in handling and transportation of dangerous goods, and WHMIS.
PC-5.02	Emergency Preparedness and Response Plan and procedures for marshaling yards will be developed.
PC-5.03	Erosion, sediment control and drainage management measures will be put in place in accordance with the Erosion and Sediment Control Plan.
PC-5.04	Fire breaks will be established at a minimum of 6 m around marshaling yards in areas where there is a risk of fire.
PC-5.05	Garbage and debris will be stored in approved containers, sorted for recycling and disposed of at a licensed or approved waste management facilities site.
PC-5.06	Hazardous materials entering and leaving the marshaling yards will be inventoried and accounted for.
PC-5.07	Hazardous materials will be stored in accordance with provincial legislation, and provincial and national codes and standards.
PC-5.08	Marshaling yards will be located based on criteria that consider soil type, topography, land form type, wildlife habitat and other environmental factors.
PC-5.09	Marshaling yards will be located in existing clearings.
PC-5.10	Marshaling yards will be located, constructed, operated and decommissioned in accordance with contract specifications and in

Marshaling Yards (PC-5)AA	
	accordance with the Rehabilitation and Invasive Species Management Plan.
PC-5.11	Once marshaling yards are no longer required, structures, equipment, materials, fences, etc. will be dismantled and moved to storage or a new location.
PC-5.13	Petroleum products will only be stored, handled and dispensed in designated areas within marshaling yards in accordance with provincial legislation and guidelines.
PC-5.14	Spill control and clean-up equipment to be located at designated areas within marshaling yards.
PC-5.17	Vehicle, machinery and equipment maintenance and repairs will be carried out in designated areas within marshaling yards.
PC-5.18	Hazardous waste materials, fuel containers and other materials will be stored in approved containers and transported to licensed or approved waste management facilities by a licensed carrier.
PC-5.19	Welding mats will be used to minimize the risk of fire.
PC-5.21	The contractor will assess lands required for marshaling yards, camps or petroleum storage, dispensing areas and hazardous materials storage areas for potential contamination following Canadian Standards Association Environmental Site Assessment (CSA Z768- 01) procedures.
PC-5.22	As marshaling yards, borrow sources, temporary workspaces, work camps are identified or route changes required, additional heritage monitoring activities may be required to be conducted prior to approval.

Petroleum products (EI-5)AA	
ID	Mitigation
EI-5.01	Aboveground tanks will be equipped with overfill protection, spill containment and collision protection as per legislation.
EI-5.02	All aboveground petroleum product tanks with a capacity greater than 5,000 L will be registered with Manitoba Environment and Climate and have a valid operating permit posted onsite.
EI-5.03	Construction, installation or removal of petroleum product storage tank systems will only occur under the supervision of a registered licensed petroleum technician.
EI-5.04	Containment measures, such as secondary containment (i.e., double wall tank, bermed liner) will be used at all locations where stationary equipment is used.
EI-5.05	Contractors will inspect all mobile and stationary equipment using petroleum products on a regular basis to ensure that measures are taken immediately to stop any leakage discovered.
EI-5.06	Fueling of equipment or portable storage tanks will be a minimum of 100 m from the ordinary high water mark of any waterbody. Unless approved by Manitoba Hydro Converter Station Business Partner or delegate, additional mitigations measures will apply.
EI-5.07	Fueling operations require the operator to visually observe the process 100% of the time.
EI-5.08	Containment areas (berms/dykes/trays, etc.) will be dewatered after precipitation events and the containment water disposed of as specified in contract specifications.

Petroleum products (EI-5)AA	
EI-5.10	Only approved aboveground petroleum storage tanks and piping will be used during the decommissioning phase of the project. No underground tanks or piping will be permitted.
EI-5.11	Orientation for contractors and Manitoba Hydro employees working in construction areas will include petroleum product storage and handling awareness.
EI-5.13	Petroleum product inventories will be taken and reconciled weekly by the owner/operator on all aboveground tanks greater than 5,000 L and retained for inspection by Manitoba Hydro or Manitoba Environment and Climate upon request. All petroleum storage tanks, including those with volume <5000 L, must be inspected daily for signs of impact, rust, uneven settlement, deterioration, leakage into interstitial space, or releases to ground. Inspections must be documented with records shared with MH's environmental inspector.
EI-5.14	Petroleum product storage containers more than 230 L will be located on level ground and will incorporate secondary containment with a capacity of 110% of the largest container volume. Water collected in the containment shall be removed regularly so as not to diminish the capacity of the containment.
EI-5.15	Petroleum product storage sites and mobile transportation units will be equipped with fire suppressant equipment and products.
EI-5.17	Petroleum product storage will be located a minimum of 100 m from waterbodies, riparian areas or wetlands.
EI-5.18	Petroleum products stored outside will be in waterproof and labeled containers, placed on spill containment pallets.
EI-5.20	Petroleum products will display required signage, placards and labeling, and will be transported, handled and stored in accordance with provincial and federal legislation.

Petroleum products (EI-5)AA	
EI-5.21	Petroleum products will only be stored and handled within designated areas at construction camps and marshaling yards.
EI-5.22	Portable petroleum product containers will be placed on spill trays with a capacity of 110% of the largest container when not in use. Accumulated precipitation collected in the containment shall be removed regularly so as not to diminish the capacity of the containment.
EI-5.23	Slip tanks and barrels will be securely fastened to the vehicle during transport and fueling operations. Slip tanks must conform to federal TDG requirements. Slip tanks must be certified with certification dates within the most recent five years.
EI-5.24	Spill control and clean-up equipment and materials will be available at all petroleum product storage and dispensing locations.
EI-5.26	The contractor will be responsible for the safe use, handling, storage and disposal of petroleum products including waste as well as procedures for emergency conditions in accordance with provincial and federal legislation and standards.
EI-5.27	The contractor will inspect all petroleum product storage tanks and containers daily for leaks, and weekly product inventories will be recorded and retained for inspection by Manitoba Hydro and Environment, Climate and Parks.
EI-5.28	Ignition sources (i.e. smoking) must remain at least 7.5m away from petroleum product storage areas.
EI-5.29	Transfer of petroleum products between storage areas and work sites will not exceed daily requirements and will be in accordance with provincial legislation and guidelines.

Petroleum products (EI-5)AA	
EI-5.30	Used petroleum products (including empty containers, oil filters, and oily rags) will be collected and transported to a licensed oil recycling facility in approved storage containers.
EI-5.31	Vehicles hauling petroleum products will carry equipment and materials for emergency spill containment and clean-up.
EI-5.32	Warning signs will be posted in visible locations around petroleum product storage areas. Signs will indicate hazard warning, contact in case of a spill, access restrictions and authority.
EI-5.33	All slip tanks are to meet ASTM or ISO or CSA or FMCSA (Federal Motor Carrier Safety Administration) certification. Compliant (CAN/CGSB-43.146) slip tanks must bear a certification sticker dated within the last 5 years to comply with TDG regulations OR display a manufacturing date within the last 5 years.
EI-5.34	Drip containers will be placed beneath all slip tank nozzles when not in use and regularly monitored, any accumulation removed and appropriately disposed.
EI-5.35	Nozzles used for dispensing petroleum products will have their lever catches (trigger locks) removed so that the operator will be present while product is being dispensed.
EI-5.36	When a spill or release is identified, it shall be flagged off to prevent disruption of that area until clean up takes place.
EI-5.37	The contractor is responsible for reporting a spill to Manitoba Hydro of any quantity within 2 hours, with a written report due in 24 hours.
EI-5.38	In the case of an externally reportable release, the contractor is required to immediately report the release to Manitoba Environment and Climate as well as immediately contact the Manitoba Hydro Contract

Petroleum products (EI-5)AA	
	Administrator to inform them that the release has been reported and cleaned up.

Potable Water (EI-11)AA	
ID	Mitigation
EI-11.01	Drinking water holding tanks and distribution piping will be designed for potable water.
EI-11.02	Drinking water holding tanks and distribution piping will be cleaned and disinfected before use.
EI-11.03	Potable water used to fill the drinking water holding tanks will be in compliance with provincial and federal legislation. Water haulers must hold a valid Manitoba Health licence. The contractor should periodically collect water supplier reports demonstrating passing water quality for potable use.
EI-11.05	Leaking fixtures will be repaired in a timely manner.

Preservative Treated Wood (EI-8)A	
ID	Mitigation
EI-8.01	Salvage and disposal of treated wood products will be in accordance with Manitoba Hydro guidelines.
EI-8.02	Small quantities of surplus or unwanted treated wood products may be disposed of as domestic waste products at licensed or approved waste disposal sites.
EI-8.03	Treated wood products will not be used indoors and will not be burned.
EI-8.04	Treated wood will be delivered to project locations or decommissioning sites on an as required basis to reduce storage time in the field.
EI-8.05	Use of treated wood will be in accordance with provincial legislation and guidelines, and Manitoba Hydro guidelines.
EI-8.06	If treated wood products are sold the purchaser will be advised about potential adverse effects and will sign a release.
EI-8.08	Creosote-treated & PCP-treated wood will not be used. If existing creosote-treated wood is encountered, it will be disposed of as hazardous waste by a licensed contractor at an approved waste disposal site.
EI-8.10	Treated wood will be kept in use for as long as possible or reused for other projects.

Soil contamination (EI-7)AA	
ID	Mitigation
EI-7.01	A closure report will be prepared for completed soil remediation projects in accordance with provincial guidelines.
EI-7.02	A remediation plan will be prepared by the contractor and submitted to Manitoba Hydro Converter Station Business Partner for sites contaminated by project activities and will remediate soils according to provincial standards.
EI-7.05	Contractor personnel will take all reasonable steps to prevent soil, groundwater and surface water contamination.
EI-7.07	If laboratory results show that the soil is contaminated the soil must be transported to an approved, licensed landfill or land farm for remediation in accordance with a Manitoba Hydro approved remediation plan.
EI-7.10	The contractor will assess lands required for marshaling yards, camps or petroleum storage, dispensing areas and hazardous materials storage areas for potential contamination following Canadian Standards Association Environmental Site Assessment (CSA Z768- 01) procedures.
EI-7.12	The Manitoba Hydro Contract Administrator/ Manitoba Hydro T&DEE Converter Station Business Partner or delegate will inspect contaminated site assessment and remediation work regularly to confirm that environmental protection measures are implemented and effective.
EI-7.13	When a spill or release is identified, it shall be flagged off to prevent disruption of that area until clean up takes place.

Vehicle and equipment maintenance (EI-9)AA	
ID	Mitigation
EI-9.01	An Emergency Preparedness and Response Plan and spill control and clean-up equipment will be provided at all designated vehicle, equipment and machinery maintenance areas.
EI-9.02	Vehicle, equipment and machinery maintenance repair procedures will include containing waste fluids and will use preventative measures such as spill trays and tarps where required.
EI-9.03	Unnecessary idling of vehicles, equipment and machinery will be avoided to the extent practical.
EI-9.04	Vehicle, equipment and machinery maintenance, washing and repairs will be carried out in designated areas located at least 100 m from the ordinary high water mark of a waterbody, riparian area or wetland.
EI-9.05	Vehicle, equipment and machinery operators will perform a daily inspection for fuel, oil and fluid leaks and will immediately shut down and repair any leaks found. All machinery working near watercourses will be kept clean and free of leaks.
EI-9.06	Vehicles transporting dangerous goods or hazardous products will display required placards and labeling in accordance with provincial legislation.
EI-9.07	Vehicles, equipment and machinery must arrive on site in clean condition, free from fluid leaks and weed seeds.
EI-9.08	Vehicles, equipment and machinery that carry fuel, hydraulic oil and other petroleum products will also carry spill control and clean-up equipment and materials.

Waste Management (EI-10)A	
ID	Mitigation
EI-10.01	A Contract specific Waste and Recycling Management Plan will be prepared by the Contractor. The Contractor will share this document with Manitoba Hydro prior to decommissioning work. This plan will be updated annually.
EI-10.02	Animal and bear-proof garbage containers with regular removal of food waste to approved waste management facility grounds will be used to manage food waste.
EI-10.03	Decommissioning sites will be kept tidy at all times and bins will be provided wherever solid wastes are generated.
EI-10.04	Indiscriminate burning, dumping, littering or abandonment will not be permitted.
EI-10.05	Kitchen waste will be stored in animal and bear-proof containers to deter wildlife interactions.
EI-10.06	Waste materials will be collected and transported to a licensed or approved waste management facility in accordance with the Waste and Recycling Management Plan.
EI-10.07	Waste materials remaining at snow disposal sites after melting will be disposed of at a licensed landfill.
EI-10.08	The Contract Administrator will make regular inspections of waste collection, storage and handling at decommissioning sites to ensure that environmental protection measures are implemented and effective.
EI-10.09	The Contractor must demonstrate that sufficient capacity exists at waste disposal grounds by obtaining approval from the operator prior to use of that facility.

Wastewater (EI-12)A	
ID	Mitigation
EI-12.01	All sewage haulers will be registered with Manitoba Environment and Climate. A copy of the hauler registration will be provided to the Contract Administrator upon request.
EI-12.02	Wastewater holding tanks will be installed as per provincial legislation and regulation and a minimum of 100 m from the ordinary high water mark of any waterbody.
EI-12.03	Wastewater will be removed from holding tanks when they are no more than 90% full by a registered sewage hauler and disposed of at a licensed wastewater treatment facility.
EI-12.04	Sewage and grey water will be collected in holding tanks and chemical toilets.

Wetlands (EC-8)AA	
ID	Mitigation
EC-8.01	Clearing waste and other construction debris or waste will not be placed in wetland areas. Existing logs, snags and wood debris will be left in place.
EC-8.02	Wetland areas will be prescribed riparian buffers in site specific mitigation tables in which understory low-growth vegetation will be maintained where possible. Environmental protection measures for working in and around wetlands will be reviewed with the contractor and employees prior to commencement of any construction activities.
EC-8.03	Natural vegetated buffer areas of 30 m will be established around wetlands and riparian zones will be maintained to the extent possible.
EC-8.04	Disturbance of wetlands will only be carried out under frozen ground conditions. If frozen ground conditions do not exist alternate mitigation measures such as construction matting and oversized equipment tires may be used to minimize surface damage, rutting and erosion if approved by the Manitoba Hydro T&DEE Converter Station Business Partner or delegate.
EC-8.05	Cleared trees and woody debris will not be pushed into or adjacent to standing timber, or within the high-water mark of wetlands or waterbodies.

Wildlife Protection (EC-9)A	
ID	Mitigation
EC-9.01	Any injured or killed wildlife encountered will be reported by the Contractor to the Manitoba Hydro Contract Administrator and Manitoba Environment and Climate.
EC-9.03	Boundaries of important wildlife habitats will be identified in Map Sheets and flagged prior to decommissioning activities.
EC-9.04	Decommissioning activities are allowed only within the reduced risk time period for wildlife. If clearing within the sensitive time period for wildlife, further mitigation and approvals would be required.
EC-9.06	Animal and bear-proof garbage containers with regular removal of food waste to approved waste management facility will be used to manage food waste.
EC-9.07	Hunting, fishing and harvesting of wildlife by project staff will not be permitted while working on the project sites.
EC-9.09	If animal traps or bait sites are encountered within the project footprint they are to be removed for the safety of workers and construction equipment. If found on Crown land the materials will be released to Manitoba Environment and Climate.
EC-9.11	No firearms will be permitted at decommissioning sites.
EC-9.12	Orientation for contractors and Manitoba Hydro employees will include awareness of environmental protection measures for wildlife and wildlife habitat.
EC-9.13	Problem wildlife will be reported immediately to the Manitoba Hydro Contract Administrator and Manitoba Environment and Climate.
EC-9.15	Trees containing large nests of sticks and areas where active animal dens or burrows are encountered will be left undisturbed until unoccupied.

Wildlife Protection (EC-9)A	
	Artificial structures for nesting may be provided if unoccupied nests must be removed.
EC-9.16	Vehicles will not exceed posted speed limits and wildlife warning signs may be installed in high density areas and at known crossings locations.
EC-9.18	Wildlife and wildlife habitat will be protected in accordance with provincial and federal legislation and provincial and federal guidelines.
EC-9.19	Wildlife will not be fed, befriended or harassed.
EC-9.20	Decommissioning activities will not be carried out within established buffer zones and setback distances for wildlife species.
EC-9.23	New occurrences of any listed rare, threatened or endangered species will be documented and provided to Manitoba Environment and Climate.

6.3 Map sheets and mitigation tables

The map sheets and specific mitigation tables are presented in Part 2 in a “map book” format. The map sheets provide an overview of environmentally sensitive sites (ESS), while the associated mitigation tables provide specific mitigation requirements related to these ESS.

PART 2
Decommissioning
Environmental Protection Plan Mapbook




































**Bipole III Transmission Project,AA
Keewatinohk Converter Station
Construction Infrastructure
Decommissioning ProjectAA**



February 14, 2023

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ESS NAMING CONVENTION				
SYMBOL	CATEGORY	Mitigation Key Series	GROUP (Number Series Representing Group)	ESS ID (Category-Number)
 Intersection	RecUse	100	Intersection (100)	RecUse-100
 Habitat	Ecosystem	200	Habitat (100)	Eco-100
 Permafrost Monitoring Site			Research (200)	Eco-200
 Species of Concern  Species of Concern			Species of Concern (300)	Eco-300
 Invasive Species of Concern			Invasive Species (400)	Eco-400
 Species of Traditional Use			Traditional Use (500)	Eco-500
 Archaeological	Heritage	300	Archaeological (100)	Hert-100
 Cultural or Historic			Cultural (200)	Hert-200
 Historic			Historic (300)	Hert-300
 Historic				
 Conservation	Land Use	400	Conservation (100)	LUse-100
 Crown Land Encumbrance			Crown Land Encumbrance (200)	LUse-200
 Recreation			Recreation (300)	LUse-300
 Residential			Residential (400)	LUse-400
 Agriculture	Resource Use	500	Agriculture (100)	RUse-100
 Food/Medicinal			Food/Medicinal (200)	RUse-200
 Forestry  Forestry			Forestry (300)	RUse-300
 Hunting			Hunting/Fishing (400)	RUse-400
 Trapping			Trapping (500)	RUse-500
 Permafrost	Soils and Terrain	600	Permafrost (100-200)	Soils-100-200
 Erosion			Erosion (300)	Soils-300
 Terrain			Terrain (400)	Soils-400
 Water Crossing  Water Crossing  Water Crossing  Waterbody/Riparian Buffer	Water	700	Water Crossing (100)	Aqua-100
 Groundwater			Groundwater (200)	Aqua-200
 Wetland			Wetlands (300)	Aqua-300
 Invasive Species			Aquatic Invasive Species (400)	Aqua-400
 Birds and Habitat	Wildlife	800	Birds and Habitat (100)	Wild-100
 Mammals and Habitat			Mammal and Habitat (200)	Wild-200
 Reptiles/Amphibians			Reptiles/Amphibians and Habitat (300)	Wild-300
 Line of Sight Buffer			Line of Sight Buffer (400)	Wild-400



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**Bipole III Transmission Project,
Keewatinohk Converter Station
Construction Infrastructure
Decommissioning Project
Environmental Protection Plan**

* MAP SHEET FULLY WITHIN CP-LUSE-100 FEATURE
CHURCHILL WILDLIFE MANAGEMENT AREA

Project Infrastructure

-  EMPA 1A
-  Keewatinohk Construction Camp

Landbase

-  Access Road

ESS Sites

-  Conservation

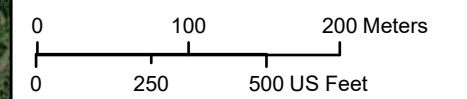
EMPA 1A

CP-LUse-100

Keewatinohk
Construction
Camp

Imagery Source: Maxar

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: February 14, 2023



1:5,000

**Keewatinohk Camp and Excavated
Material Placement Area (EMPA 1A)
Environmentally Sensitive Sites**

ESS Group: Conservation

**Features represented as polygons*

ESS ID	ESS Name	Location
CP-LUse-100	Churchill Wildlife Management Area	*See Map

Potential Effects:

Intersects Churchill Wildlife Management Area

Specific Mitigation (ID# 1008):

A work permit is required prior to any maintenance activities taking place within the boundary of the WMA
There is no herbicide application permitted within the boundaries of the WMA

ESS Group: Conservation**Features represented as polygons*

ESS ID	ESS Name	Location
CP-LUse-100	Churchill Wildlife Management Area	*See Map

Potential Effects:*Intersects Churchill Wildlife Management Area***Specific Mitigation (ID# 1008):**

A work permit is required prior to any maintenance activities taking place within the boundary of the WMA
 There is no herbicide application permitted within the boundaries of the WMA

ESS Group: Archaeological**Features represented as points*

ESS ID	ESS Name	Location
KW-Hert-100	Registered Archaeological Site	E-815541 - N-6291342
KW-Hert-101	Registered Archaeological Site	E-815242 - N-6290660

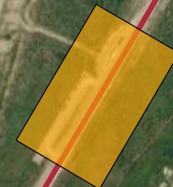
Potential Effects:*Potential disturbance to Heritage Resources***Specific Mitigation (ID# 5):**

Minimize surface disturbance around the site to the extent possible
 Do not impede access to the site
 Carry out activities on frozen or dry ground to minimize surface damage, rutting and erosion
 Should perimeter fencing require repair or replacement consult with Fox Lake First Nation and the
 Heritage Resources Branch

**Bipole III Transmission Project,
Keewatinohk Converter Station
Construction Infrastructure
Decommissioning Project
Environmental Protection Plan**

* MAP SHEET FULLY WITHIN CP-LUSE-100 FEATURE
CHURCHILL WILDLIFE MANAGEMENT AREA

KGEL-Eco-325b
KGEL-Eco-325
KGEL-Eco-326



Access Road Security
Gatehouse Pad
& Parking Lot

CP-LUse-100

NELSON RIVER



Ground
Electrode
Site

Project Infrastructure

Access Road Security Gatehouse Pad and Parking Lot

ESS Sites

Species of Concern

Conservation

Landbase

Access Road

Imagery Source: Maxar

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: February 14, 2023



0 250 500 Meters
0 500 1,000 US Feet

1:15,000

**Access Road Security Gatehouse
Environmentally Sensitive Sites**

ESS Group: Species of Concern**Features represented as points*

ESS ID	ESS Name	Location
KGEL-Eco-325	Species of Concern	E-811147 - N-6284064
KGEL-Eco-325b	Species of Concern	E-811151 - N-6284058
KGEL-Eco-326	Species of Concern	E-811190 - N-6284025

Potential Effects:

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

Specific Mitigation (ID# 2):

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

ESS Group: Conservation**Features represented as polygons*

ESS ID	ESS Name	Location
CP-LUse-100	Churchill Wildlife Management Area	*See Map

Potential Effects:

Intersects Churchill Wildlife Management Area

Specific Mitigation (ID# 1008):

- A work permit is required prior to any maintenance activities taking place within the boundary of the WMA
- There is no herbicide application permitted within the boundaries of the WMA

APPENDICES

Appendix A

Contact List

Appendix A: Contact list

Contact	Name	Phone Number(s)
Construction Contractor		
Contractor Project Manager		
Contractor field lead		
Contractor safety		
Environmental representative		
Manitoba Hydro		
Project Manager		
Contract Administrator		
T&DEE Converter Station Business Partner		
FSO: field safety officer		
Hazardous materials officer		
Area spill response coordinator		
Emergency response services		
Archaeological contact (Primary contact)		

Contact	Name	Phone Number(s)
Manitoba Environment, Climate & Parks contacts		
24 hr environmental emergency response reporting line		1-204-944-4888 or Toll free at 1-855-944-4888
District office		
Environment Officer		
First Nations contacts		

Appendix B

Environmental Licences, Approvals and Permits

Appendix B: Environmental Licences, Approvals and Permits

Approval required (Applicable Legislation/Regulation)	Type of Approval needed	Responsibility
Crown Lands Act (General Permit)	Permit	Property Department/ T&DEE
Dangerous Goods Handling and Transportation Act-Storage and Handling of Gasoline and Associated Products Regulation (registration of petroleum tanks)	Permit	Contractor
Environment Act Licence (Class 3)	Licence	T&DEE
Heritage Resources Act (application to conduct work if artifact is found)	Permit	T&DEE
Highways Protection Act (transportation of large loads)	Permit	Contractor
Mines and Minerals Act (quarry lease or permit)	Lease or Permit	Property Department/ T&DEE
Water Rights Act	Licence	Contractor
Wildfires Act (Work Permit)	Permit	Contractor
Wildfires Act (permit to burn wood- outside of timing windows only)	Permit	Contractor
Wildlife Act (Wildlife Management Area Use Permit)	Permit	TDEE

Note: Permits, Licences and Approvals are the sole responsibility of those groups indicated in this table

TDEE - Manitoba Hydro Transmission & Distribution Environment and Engagement Department

Appendix B1

Environment Act Licence No.3055

LICENCE

Licence No. / Licence n° 3055

Issue Date / Date de délivrance August 14, 2013

In accordance with *The Environment Act* (C.C.S.M. c. E125) /
Conformément à la *Loi sur l'environnement* (C.P.L.M. c. E125)

Pursuant to Section 12(1) / Conformément au Paragraphe 12(1)

THIS LICENCE IS ISSUED TO: / CETTE LICENCE EST DONNÉE À:

MANITOBA HYDRO:
"the Licencee"

for the construction, operation and maintenance of the Development being the Bipole III Transmission Project, consisting of a new 500 kV HVdc transmission line connecting two new converter stations, one in the north near Gillam (Keewatinoow Converter Station) and one in the south near Winnipeg (Riel Converter Station), two new ground electrodes connected to each of the new converter stations, and new 230 kV ac transmission collector lines to connect the new northern converter station to existing northern converter stations, in accordance with the Proposal dated December 14, 2009, the Bipole III Transmission Project Environmental Impact Statement (EIS) filed under The Environment Act in December 2011, supporting information filed in association with the EIS dated June 22, July 31, August 8, September 17 and 20, October 2, 23, and 19, 2012, January 28, February 19, and 25, 2013, in consideration of the June 2013 Clean Environment Commission Report on Public Hearings, and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence:

“**bog**” means a peat-covered wetland in which the vegetation shows the effects of a high water table and a general lack of nutrients. The surface is often raised relative to the surrounding landscape and isolated from mineralized soil waters. At least 40 cm of peat are present. The plant community is dominated by cushion-forming Sphagnum mosses (peat mosses), ericaceous shrubs and black spruce trees;

“**Director**” means an employee referred to in this licence, so designated pursuant to *The Environment Act*, who is the Director of the Environmental Approvals Branch of the Department of Conservation and Water Stewardship (CWS), unless otherwise specified;

“**Environment Officer**” means an employee so designated pursuant to *The Environment Act*;

“**native habitat**” means grasses, wildflowers, shrubs, trees, and other vegetation that occur naturally and support fauna indigenous to the area;

“**Minister**” means the Minister of Conservation and Water Stewardship;

“**quarry**” means a mine that is an open excavation from which quarry mineral is removed;

“**quarry mineral**” means a mineral, other than a diamond, ruby, sapphire or emerald, that is obtained from a quarry, and includes sand, gravel, clay, shale, kaolin, bentonite, gypsum, salt, peat, peat moss, coal and amber, and rock or stone that is used for a purpose other than as a source of metal, metalloid or asbestos;

“**record drawings**” means engineering drawings complete with all dimensions which indicate all features of the pipeline as it has actually been built;

“**Region**” means the geographic areas of the Province of Manitoba in which the Department of Conservation and Water Stewardship has been divided;

“**Regional Director**” means an employee so designated by the Department of Conservation and Water Stewardship;

“**Regional Forester**” means an employee so designated by the Department of Conservation and Water Stewardship;

“**riparian area**” means an area of land on the banks or in the vicinity of a waterbody, which due to the presence of water supports, or in the absence of human intervention would naturally support, an ecosystem that is distinctly different from that of adjacent upland areas (*The Water Protection Act 2005*);

“**rutting**” means a sunken track or groove made by the passage of vehicles;

“**slash**” means branches and other woody debris that result from forest clearing;

“**transmission line right-of-way**” means the corridor for the proposed 500 kV HVdc transmission line, as defined and described in the EIS;

“**waterbody**” means any body of flowing or standing water, whether naturally or artificially created, and whether the flow or presence of water is continuous, intermittent or occurs only during a flood, including but not limited to a lake, river, creek, stream, and wetland (slough, marsh, swamp, etc.), including ice on any of them (*The Water Protection Act 2005*); and

“**wetland**” means land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation, and various kinds of biological activity which are adapted to a wet environment. They are generally less than approximately 2 metres in depth (National Wetland Working Group 1997).

GENERAL TERMS AND CONDITIONS

This Section of the Licence contains requirements intended to provide guidance to the Licencee in implementing practices to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

1. The Licencee shall, in addition to any of the following specifications, limits, terms and conditions specified in this Licence, upon the request of the Director:
 - a) sample, monitor, analyse or investigate specific areas of concern regarding any segment, component or aspect of the Development for such duration and at such frequencies as may be specified;
 - b) determine the environmental impact associated from the Development; and
 - c) provide the Director, within such time as may be specified, with such reports, drawings, specifications, analytical data, descriptions of sampling and other information as may from time to time be requested.
2. The Licencee shall submit all information required to be provided to the Director under this Licence, in writing, in such form (including number of copies) and of such content as may be required by the Director and each submission shall be clearly labeled with the Licence Number and Client File Number associated with this Licence.
3. The Licence shall adhere to the commitments made in the EIS and supporting information filed in association with the EIS during construction and operation of the Development.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Respecting Pre-Construction

4. The Licencee shall submit a complete Environmental Protection Plan (EPP) for approval of the Director prior to construction of the Development. The EPP shall describe the approach to be used by the Licencee to ensure that mitigative measures are applied systematically, and in a manner consistent with the commitments made in the EIS, including commitments for mitigation measures to address concerns raised by First Nations, Metis communities and local Aboriginal communities about potential adverse effects on the exercise of Aboriginal treaty rights as summarized in the EIS commitment table. If prior approval is given by the Director, separate EPPs may be submitted for the construction and operation phases, as well as for different reaches or components of the Development. Specifically, the EPP shall:
 - a) describe the environmental management system and protocol for internal reporting on monitoring and compliance for the construction of the project;
 - b) provide field construction personnel with clear instructions on the mitigation measures to be implemented and on the appropriate lines of communication and means of reporting to be followed throughout the full-life cycle of the project;
 - c) summarize environmental sensitivities and mitigation actions and emergency response plans and reporting protocols;

- d) provide specific information on waste management practices to be used during the construction phase of the project, including consideration of all liquid and solid wastes generated;
 - e) identify how Aboriginal Traditional Knowledge will be enhanced and used in activities addressed in the EPP; and
 - f) address issues and concerns identified by representatives of First Nations, Metis, and local Aboriginal communities relating to the environmental effects of the project as described above.
5. The Licencee shall, prior to construction of the Development in a Wildlife Management Area (WMA), obtain a WMA Use Permit from the Director of the Wildlife Branch of CWS.
 6. The Licencee shall, prior to construction of the Development in agricultural areas, consult with agricultural land owners to determine the tower placement that would have the least impact on agricultural operations, and incorporate those changes into the final design of the Development unless there is compelling rationale to depart.
 7. Where routing is along existing drains, the Licencee shall place towers for the Development in or immediately adjacent to the grass swales along the field side of drains, unless there is compelling reason to depart.
 8. The Licencee shall follow the recommended routing changes cited in recommendation 9.3 in the Clean Environment Commission's report unless there is compelling reasons not to do so. Any proposed deviations from the route changes recommended by the Clean Environment Commission's recommendation 9.3 shall be provided to the Director, for approval prior to construction in those areas, providing compelling rationale for the final route preferred.
 9. The Licencee shall, prior to construction of the Development in the areas cited in the Clean Environment Commission's recommendations 10.1, 10.2, and 10.3, incorporate the changes recommended in the transmission line route into the final design of the development for those specific locations.
 10. The Licencee shall, prior to construction of the Development, submit maps of the final route to the Director with a description of any changes from the Final Preferred Route identified in the EIS. Maps may be submitted all at once for the entire route or in several separate submissions for portions of the route to accommodate construction schedules.
 11. The Licencee shall prepare a plan for construction and maintenance associated with the Development within the area of the Lake Winnipegosis Salt Flats Ecological Reserve, the proposed expansion, and the source salt spring in consultation with the Parks and Natural Areas Branch and submit the plan for approval of the Director prior to initiating construction in this area.
 12. The Licencee shall, for each region of CWS, re-establish any of the Forestry Branch's existing Permanent Sample Plots (PSPs) located within 200 m of the transmission line right-of-way with two new PSPs prior to construction in each applicable Region. Approval of the locations of the new PSPs shall be obtained from the Director of the Forestry Branch.

13. The Licencee shall, prior to construction in forested areas, consult with the responsible Regional Forester of the Forestry Branch to determine the disposition of timber cleared in association with the Development in those areas.
14. The Licencee shall, prior to construction, retain a qualified archaeological consultant to conduct a Heritage Resources Impact Assessment (HRIA) to identify and assess any heritage resources that may be negatively impacted by Development. Plans for the identification of and mitigation for Aboriginal sacred or ceremonial sites shall be included in the report. The HRIA shall be submitted to the Director for approval prior to construction.
15. The Licencee shall, prior to construction of the Development, submit access management plans for approval of the Director. The access management plans shall include, but not be limited to, the anticipated types and locations of roads, trails, and water crossings required to access the right-of-way of the Development, and associated decommissioning plans. The plans may be submitted all at once for the entire route or in stages along the route as construction progresses.
16. The Licencee shall use terrain features and vegetation composition to limit access to and line-of-sight along the Development right-of-way.
17. The Licencee shall, prior to construction of the Development, submit a general plan for addressing any unanticipated adjustments to the transmission line right-of-way for approval of the Director. The plan shall describe the action and process that will be followed in the event an unanticipated adjustment is needed due to field conditions.
18. The Licencee shall prepare a report on monitoring programs to be undertaken in relation to the mitigation measures outlined in the EIS and supporting information. Monitoring of community socio-economic and cultural effects should be included in the report. The report shall be submitted prior to June 30, 2014, for the approval of the Director, and:
 - a) provide a description of the proposed activities for monitoring effects to the physical, aquatic, and terrestrial environments arising from construction of the Development;
 - b) describe the parameters to be measured, the methodology and frequency of measurement, references to establish thresholds and sustainability indicators, where appropriate, and the protocol for reporting the results of monitoring of the environmental conditions affected by the Development to CWS;
 - c) in cooperation and consultation with the Wildlife Branch, monitor white-tailed deer distributions and prevalence of brainworm along the transmission line; and
 - d) using methods approved by the Wildlife Branch, include descriptions of proposed programs:
 - i) to continue monitoring the population status and movements of the woodland caribou herds specifically affected by the Development for 25 years, or less if approved otherwise by the Wildlife Branch. Collaring may be included over the timeframe as determined by the Wildlife Branch;
 - ii) for the monitoring of black bear and timber wolf populations, distribution, and predation on woodland caribou in sensitive areas within the caribou ranges in the vicinity of the transmission line right-of-way;
 - iii) to conduct periodic moose surveys for 25 years, or less if approved otherwise by the Wildlife Branch including, but not necessarily limited to, Game Hunting Areas 14, 14A and 19A; and

- iv) to monitor the use of major points of access within the Development to sensitive wildlife areas by humans and animals using trail cameras, or other more effective techniques, for at least five years after clearing is completed.
19. The Licencee shall, prior to construction which may affect the Gillam area, conduct a community health assessment of the Gillam area to determine the potential impact that a large temporary influx of workers may have on personal, family and community life.
 20. The Licencee shall consult the Wildlife Branch of CWS regarding the design and implementation of mitigation measures for the protection of moose and caribou in known sensitive ranges along the transmission line right-of-way. A mitigation plan for these ranges shall be submitted to the Director for approval prior to clearing of the transmission right-of-way in known sensitive areas.
 21. The Licencee shall consult the Wildlife Branch and include in the plan required in Clause 18, regarding the design and implementation of mitigation measures and monitoring for impacts to birds of prey including the species at risk such as the peregrine falcon and ferruginous hawk.
 22. The Licencee shall conduct clearing components of the Development between August 1 and April 30 of each construction year to avoid potential impacts to the nesting habitat for migratory birds and the calving and rearing habitat for woodland caribou. Should any transmission line clearing be required after April 30, the Licencee shall, prior to the construction activity, consult and reach an agreement with the Wildlife Branch regarding the location of any key wildlife habitats to be avoided including caribou calving areas and bird nesting and brooding areas.
 23. The Licencee shall, prior to construction of the Development, provide a copy of this Licence to the contractor and subcontractor(s) involved in the Development.
 24. The Licencee shall, prior to construction of the Development, arrange meetings with the construction project managers and the Northeast, Northwest, Western, and Central Regional Directors of Department of Conservation and Water Stewardship (CWS) to review construction related matters.
 25. The Licencee shall not less than two weeks prior to beginning construction of the Development in each Region of CWS, notify the responsible Regional Directors of the intended start date of construction within a particular Region and the name of the contractor responsible for the construction.
 26. The Licencee shall, prior to the commencement of construction on Crown land, apply for and obtain the appropriate land tenure allocations in accordance with *the Crown Lands Act* from the Crown Land and Property Agency.
 27. The Licencee shall, prior to construction of the Development in each Region of CWS, obtain work permits and general land permits from the appropriate Regions and comply with the conditions of all permits.

Respecting Construction and Maintenance

28. The Licencee shall, during construction of the Development, employ qualified environmental inspectors to monitor the work on a daily basis to ensure that all the environmental practices outlined in the EIS, the EPPs, and supporting information are carried out.
29. The Licencee shall, during construction of the Development, arrange quarterly meetings with the responsible Regional Directors of CWS to discuss construction, environmental protection, and emergency response issues.
30. The Licencee shall expand and enhance the furbearer pilot study conducted on the Wuskwatim Transmission Project to include areas along the transmission line right-of-way.
31. The Licencee shall submit, to the Director for approval, a plan to accommodate the continuation of educational programs on community traplines that are affected by the Development.
32. The Licencee shall develop a policy, for submission to the Director, to manage documented losses to outfitters that are attributable to the Development and provide an option for disposition of payments in an annual format where compensation is deemed necessary.
33. The Licencee shall, prior to construction of the Development, develop a policy, for submission to the Director, to provide an option for disposition of payments in an annual format where compensation is paid in agricultural areas associated with the Development.
34. The Licencee shall design and decommission quarries in connection with the Development in accordance with the *Quarry Minerals Regulation 65/92*. Reclamation of individual quarries shall occur as soon as they are no longer in use for the Development.
35. The Licencee shall submit annual plans for the harvest of timber on Crown Lands within the transmission right-of-way of the Development to the applicable Regional Forester in advance of clearing in those areas.
36. The Licencee shall, in consultation with the Forestry Branch, manage vegetation along the transmission right-of-way in coniferous dominated forest to retain the coniferous character.
37. The Licencee shall, during construction of the Development, dispose of all sewage and septage from on-site sanitary facilities in accordance with the *Onsite Wastewater Management Systems Regulation 83/2003*, or any future amendment thereof.
38. The Licencee shall dispose of non-reusable construction debris and solid waste from the construction and maintenance of the Development at a waste disposal ground operating under the authority of a permit issued under *Waste Disposal Grounds Regulation 150/91*, or any future amendment thereof, or a licence issued pursuant to *The Environment Act*.
39. The Licencee shall, during construction and maintenance of the Development, adhere to the general recommendations on design, construction, and maintenance of stream crossings as specified in the Manitoba Department of Natural Resources guidelines titled *Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, May 1996*, and the current versions of applicable federal Department of Fisheries and Oceans Operational Statements.

40. The Licencee shall establish any fuel storage areas required for the construction and maintenance of the Development:
 - a) a minimum distance of 100 metres from any waterbody; and
 - b) in compliance with the requirements of the *Storage and Handling of Petroleum Products and Allied Products Regulation 188/2001*, or any future amendment thereof.
41. The Licencee shall, during construction and maintenance of the Development, operate, maintain, and store all materials and equipment in a manner that prevents any deleterious substances including fuel, oil, grease, hydraulic fluid, coolant, and other similar substances from entering any waterbodies. An emergency spill kit for in-water use shall be readily available on site during construction.
42. The Licencee shall, in the case of physical or mechanical equipment breakdown or process upset where such breakdown or process upset results or may result in the release of a pollutant in an amount or concentration, or at a level or rate of release, that causes or may cause a significant adverse effect, immediately report the event by calling 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time and estimated duration of the event and the reason for the event.
43. The Licencee shall, following the reporting of an event pursuant to Clause 42:
 - a) identify the repairs required to the mechanical equipment;
 - b) undertake all repairs to minimize unauthorized discharges of a pollutant;
 - c) complete the repairs in accordance with any written instructions of the Director; and
 - d) submit a report to the Director about the causes of breakdown and measures taken, within one week of the repairs being done.
44. The Licencee shall minimize the burning of slash generated during clearing of the Development where smoke may affect residences. In these areas, the Licencee shall dispose of slash using environmentally suitable methods such as chipping and mulching where feasible.
45. The Licencee shall not use herbicides in association with construction of the Development.
46. The Licencee shall, during construction and maintenance of the Development, prevent the introduction and spread of foreign aquatic and terrestrial biota (e.g., weeds, non-native species) to surface waters and in native habitats and prevent invasive species to agricultural lands. To ensure this, all equipment used for the construction of the Development, including transport trucks and trailers, shall be cleaned prior to moving between areas of differing vegetation types (e.g., cultivated land to natural prairie, to forested, etc.).
47. To prevent rutting having the potential of mixing of soil layers, the Licencee shall implement mitigation measures as appropriate (e.g., avoiding excessively wet soils or other means).
48. The Licencee shall, during maintenance of the Development in Environmentally Sensitive Sites (ESSs) identified in the EPP related to traditional plant harvesting:
 - a) clear vegetation using only low impact methods including hand clearing;
 - b) not apply herbicides in the ESSs and within a buffer from the sites, unless a vegetation management agreement stating otherwise is developed with the First Nations, Metis communities and local Aboriginal communities that utilize the specific sites; and

- c) post signs indicating herbicides have been applied in areas along the transmission line right-of-way when and where herbicides have been applied in the vicinity of the ESSs. The postings shall be left in place for one month after the application has occurred.
49. The Licencee shall, during construction and maintenance of the Development, clear only tower locations, danger trees, and trees in excess of 17 meters in height within the transmission line right-of-way along the approximately 8 kilometer long section of Game Hunting Area 19A, which is currently inaccessible by means of existing fence lines and trails.
50. The Licencee shall leave wildlife trees, where possible, throughout the Development right-of-way where they do not pose a hazard.
51. The Licencee shall, in consultation with Wildlife Branch, manage the Development right-of-way from Swan River northward to discourage population increase and distribution of white-tailed deer.
52. To ensure no net loss of wetlands, the Licencee shall, during construction and maintenance of the Development, maintain a minimum 30 meter riparian buffer zone immediately adjacent to wetlands and the shoreline of lakes, rivers, creeks, and streams. Within the riparian buffer zone:
 - a) trees that must be removed shall be cleared using only low impact methods including hand clearing;
 - b) all existing low growth vegetation such as grasses, shrubs, and willows shall be maintained;
 - c) the application of herbicides shall be prohibited; and
 - d) any affected wetland area will be restored, replaced or offset as approved by the Director to ensure no net loss of wetlands.
53. The Licencee shall, where native prairie habitat is disturbed during construction of the Development, retain a native prairie re-vegetation specialist to plan and oversee reclamation of these areas. Re-vegetation monitoring shall be conducted by the native prairie re-vegetation specialist for a minimum of three complete growing seasons. Follow-up monitoring, seeding, maintenance, and/or weed control shall be conducted until disturbed areas are re-vegetated to the satisfaction of the Director. Re-vegetation shall:
 - a) where conditions are ideal regarding topography, slope, moisture, time of year, and the condition of nearby prairie, allow for natural re-vegetation; or
 - b) where conditions are not ideal for natural recovery, re-vegetate areas exposed during the construction with native seed mixes approved by the Wildlife Branch of CWS.
54. The Licencee shall ensure access within the Development, where possible, to quarry mineral withdrawals by Manitoba Infrastructure and Transportation (MIT) in Townships 22-11W, 30-17W, 22-12W, 30-18W, 23-12W, 31-19W, 25-13W, 32-20W, 26-13W, 33-21W, 30-18W, 33-25W, 32-20W, 44-25W, 49-25W, and 45-25W.
55. The Licencee shall remove any temporary construction access routes and rehabilitate all disturbed areas within MIT's right-of-way and controlled area upon completion of construction of the Development in the locations identified in Clause 54 of this Licence.
56. The Licencee shall implement the monitoring programs approved pursuant to Clause 18 of this Licence.

57. The Licencee shall, during construction of the Development, submit annual reports to the Director on the success of the mitigation measures employed during construction, a description of the adaptive management measures undertaken to address issues, and recommendations for improvements of mitigation in future projects. The reports shall include a progressive assessment of the accuracy of predictions made in the EIS and supporting information, including those relating to domestic use of resources (including Aboriginal Traditional Knowledge) by First Nations, Metis communities and Local Aboriginal communities and the socio-economic and cultural impacts to those groups. The annual reports shall be submitted for five years after completion of construction or as otherwise approved by the Director.

Respecting Post-Construction

58. The Licencee shall provide the data and report annually to the Director, on the results of the monitoring programs approved pursuant to Clause 18 of this Licence.
59. The Licencee shall:
- a) prepare “record drawings” for the Development and shall label the drawings “record drawings”; and
 - b) provide to the Director, within six months of the completion of construction of the Development, two sets of “record drawings” of the Development.
60. The Licencee shall, for approval of the Director, submit a vegetation control plan for line maintenance. The plan shall consider Integrated Pest Management (IPM) strategies and shall eliminate the use of herbicides during maintenance unless there are no other feasible means available. If herbicides are used, the Licencee shall adhere to the *Pesticides Regulation 47/2004*, or any future amendment thereof, for the storage, handling and application of pesticides in conjunction with the Development.
61. The Licencee shall not, during maintenance of the Development, use herbicides in Wildlife Management Areas, unless otherwise approved in the vegetation control plan referenced in Clause 60 above.
62. The Licencee shall not use herbicides in bog areas during maintenance of the Development.
63. The Licencee shall, upon completion of construction of the Development, undertake a third-party environmental audit to assess whether commitments they provided in their EIS and supporting information were met and to assess the accuracy of the assumptions and predictions in these documents. The audit shall be repeated after five years. Reports on the audits shall be submitted to the Director.
64. The Licencee shall, no later than December 31, 2013, develop and maintain an easily accessible project-related website to contain all of the information related to monitoring and assessing environmental mitigation and management committed to in the EIS and as noted in the CEC report. The website should contain minutes from community meetings related to the Development monitoring and mitigation management.

Respecting Alterations to the Development

65. The Licencee shall obtain approval from the Minister for any proposed alteration to the Development before proceeding with the alteration in accordance with *The Environment Act*.

REVIEW AND REVOCATION

66. If, in the opinion of the Minister, the Licencee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out in this Licence, the Minister may, temporarily or permanently, revoke this Licence.
67. If the construction of the Development has not commenced within three years of the date of this Licence, the Licence is revoked.
68. If, in the opinion of the Minister, new evidence warrants a change in the specifications, limits, terms or conditions of this Licence, the Minister may require the filing of a new proposal pursuant to Section 12 of *The Environment Act*.

Originally signed by

Gord Mackintosh
Minister of Conservation and Water
Stewardship

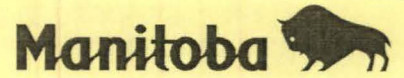
Client File No.: 5433.00

Appendix B2

Crown Lands Act General Permit

2010-0026-4

Crown Land Permit



EFFECTIVE FROM 01-Jan-2023 TO 31-Dec-2023

Taxing Authority GILLAM REGION NE

00000075 MANITOBA HYDRO (L & P) OTHER CLIENTS
LAURA TURNER
PROPERTY & CORP ENVIRON DEPT
360 PORTAGE AVE (12)
WINNIPEG MB
R3C 0G8 CD

Permit Number
GP61348

Sys ID: 00061348

IS AUTHORIZED UNDER THE CROWN LAND ACT AND REGULATIONS THEREUNDER, SUBJECT TO CONDITIONS ON THE REVERSE SIDE, HEREUNDER OR ATTACHED, TO THE FOLLOWING DESCRIBED LAND FOR THE PURPOSE STATED BELOW

LEGAL DESCRIPTION OF LAND	71.810 Acres
P W 05-089-02 E2 Block: Lot: C Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2	
P E 06-089-02 E2 Block: Lot: C Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2	

DISPOSITION PARTICULARS
LEGAL DESCRIPTION: PARCEL "C" DEPOSIT PLAN 876-2015 IN W 5 & E 6-89-2 E OF 2ND

AREA: 71.81 ACRES

SPECIFIC USE: START UP CAMP AND LAGOON

BUILDINGS: MODULAR TRAILER BUNKHOUSES (APPROX. 28' X 240' EACH), MODULAR TRAILER CAMP CORE COMPLEX (APPROX. 72' X 168'), MODULAR TRAILERS (APPROX. 60' X 60' EACH), MODULAR TRAILERS (APPROX. 12' X 45' TO 12' X 60') AND PRE-ENGINEERED BUILDINGS (APPROX. 40' X 40' TO 40' X 130').

HYDRO FILE NO. 2010-0026-4 KEEWATINOHK *Parcel C*

As shown on Sketch/Plan/map on file in the Crown Lands Office.

SPECIFIED USE: LAGOON / SEPTIC FIELD

AUTHORIZED USE: To maintain and/or operate a(n):

Commercial Lot - Other
Permit Renewal Fee

SPECIAL CONDITIONS: THIS PERMIT MUST BE POSTED ON BUILDING, READILY VISIBLE, FOR INSPECTION PURPOSES. ANNUAL RENTAL IS SET ACCORDING TO THE CROWN LANDS ACT RENTAL FEES ARE REVIEWED ANNUALLY AND SUBJECT TO CHANGE

SUBJECT TO THE CONDITIONS OUTLINED IN SCHEDULE 'A' ATTACHED TO THE CROWN LAND PERMIT.

THIS SITE IS WITHIN A WATER POWER RESERVE AND IS SUBJECT TO THE WATER POWER ACT AND ALL REGULATIONS THEREUNDER

1. THIS PERMIT IS ISSUED SUBJECT TO ALL ACTS, REGULATIONS AND LAWS WHICH MAY BE IN EFFECT FROM TIME TO TIME AND TO THE FOLLOWING CONDITIONS
2. That the information given in the application for this permit is true in substance and in fact.
3. Permittee shall pay Municipal and School Taxes as assessed under Part X, Chapter M225, C.C.S.M. of *The Municipal Act* and Part VII, Section 5, Chapter N100 C.C.S.M. of *The Northern Affairs Act*, or as both statutes may be amended from time to time.

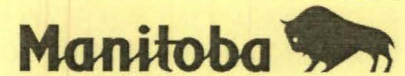
Permittees located within Provincial Parks shall pay service fees as assessed under the Provincial Parks and regulations.
4. This permit shall allow only that land use for which this permit is issued. Any other use shall constitute violation of conditions of the permit and render it liable to cancellation.
5. The occupation of the lands or the operation of any facility on the lands by any person is subject to the approval of the Minister, notwithstanding the registration of any assignment of this permit.
6. Any structures allowed on permit areas must be constructed in accordance with Manitoba Building Code and Municipal by-laws and regulations. All permanent structures on unsurveyed land must be set back a minimum of 99' from the high water mark of lakes and rivers and a minimum of 125' from Provincial Road right-of-ways.

All structures and sewage disposal facilities erected or installed within Provincial Parks must conform with requirements of *The Provincial Parks Act*, Regulations thereunder and such conditions as may be prescribed by the Director of Parks.
7. Permittee shall not remove timber, fill, blackdirt, sand, gravel, etc. from permit area without authority of the Crown. Permittee requires work permit from local Conservation Officer to cut trees on permit area.

Provisions of *The Provincial Parks Act* and Regulations thereunder apply within Provincial Parks.
8. This permit shall not be assigned without consent of the Minister. If assignment is proposed the permittee shall notify the department, provide documentation to effect assignment and to pay all rents, fees and taxes up to assignment date.
9. The permit area shall be kept clean and orderly and free from fire hazard. Sanitation, garbage disposal or sewage systems shall be in accordance with Acts and Regulations.
10. Neither the Crown nor holder of mineral rights on the permit area shall be liable in any way for damages resulting from mining operations on the permit area or adjacent land.
11. Nothing herein contained shall create any liability on the part of the Crown or Manitoba Hydro for any damages caused or purporting to be caused in respect of said lands by raising or lowering waters bordering upon or adjacent to the said lands.
12. This permit shall in no way limit Manitoba Hydro's or Manitoba's right to raise or lower the water levels on any body of water which may affect the Land and Manitoba Hydro or Manitoba shall not be held liable for changes in the water level. Furthermore, this permit does not imply any guarantee of water levels at the Land.
13. The Permittee shall save the Crown harmless from any and all claims relating to or arising from the use or development of the permit area.
14. The issuing of this permit in no way implies that either the Crown or local governments shall provide any services unless otherwise stated.
15. Should any dispute arise over boundaries or use as described in this permit, decision of the Minister shall be final.
16. This permit does not warrant title.
17. This permit is subject to penalty or cancellation on 30 days notice.
18. Any notice or other communication to the Permittee shall be in writing and shall be delivered personally to the Permittee or an officer or employee of the Permittee or sent by mail postage prepaid, to the address on the Permit.
19. Any notice or communication sent by mail shall be deemed to have been received on the third (3rd) business day following the date of mailing. If mail service is disrupted by labour controversy, notice under Part 17 shall be delivered personally.
20. Notwithstanding Part 18 and 19, any written notice to be served or given by the Crown to the Permittee shall be effectively given or served by posting the same in a conspicuous place on the permit area.

2010-0026-4

Crown Land Permit



EFFECTIVE FROM 01-Jan-2023 TO 31-Dec-2023

Taxing Authority GILLAM REGION NE

00115372 MANITOBA HYDRO (L & P / EASE) OTHER CLIENTS
LAURA TURNER
PROPERTY & CORP ENVIRON DEPT
360 PORTAGE AVE (12)
WINNIPEG MB
R3C 0G8 CD

Table with 2 rows: Permit Number, GP66120

Sys ID: 00066120

IS AUTHORIZED UNDER THE CROWN LAND ACT AND REGULATIONS THEREUNDER, SUBJECT TO CONDITIONS ON THE REVERSE SIDE, HEREUNDER OR ATTACHED, TO THE FOLLOWING DESCRIBED LAND FOR THE PURPOSE STATED BELOW

LEGAL DESCRIPTION OF LAND 294.740 Acres
P NE 36-088-01 E2
Block: Lot: D Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2
P E 36-088-01 E2
Block: Lot: E Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2.
P SE 01-089-01 E2
Block: Lot: D Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2
P E 31-088-02 E2
Block: Lot: B Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2
P W 31-088-02 E2
Block: Lot: B Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2
P NW 31-088-02 E2
Block: Lot: D Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2
P W 31-088-02 E2
Block: Lot: E Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2
P W 31-088-02 E2
Block: Lot: A Plan: 876-2015 WLTO POFS IN S 36-88-01 E2; 31-88-02 E2; SE 01-89-01 E2 AND W 05 & E 06-89-02 E2

DISPOSITION PARTICULARS

PARCELS A, B, D & E DEPOSIT PLAN 876-2015 IN E 36-88-1 E OF 2ND, SECTION 31-88-2 E OF 2ND AND SE 1-89-1 E OF 2ND

AREA: 295.74 ACRES

SPECIFIC USE: CAMP AND STORAGE PURPOSES Parcel A, B, D + E

BUILDINGS: MODULAR TRAILER BUNKHOUSES (APPROX. 28' X 240' EACH), MODULAR TRAILER CAMP CORE COMPLEXES (APPROX. 72' X 168' EACH), MODULAR TRAILERS (APPROX. 60' X 60' EACH), MODULAR TRAILERS (APPROX. 12' X 45' TO 12' X 60') AND PRE-ENGINEERED BUILDINGS (APPROX. 40' X 40' TO 40' X 130').

As shown on Sketch/Plan/map on file in the Crown Lands Office.

SPECIFIED USE: COMMERCIAL LOT

AUTHORIZED USE: To maintain and/or operate a(n):

Commercial Lot - Other

Permit Renewal Fee

SPECIAL CONDITIONS: THIS PERMIT MUST BE POSTED ON BUILDING, READILY VISIBLE, FOR INSPECTION PURPOSES ANNUAL RENTAL IS SET ACCORDING TO THE CROWN LANDS ACT RENTAL FEES ARE REVIEWED ANNUALLY AND SUBJECT TO CHANGE

SUBJECT TO THE CONDITIONS OUTLINED IN SCHEDULE 'A' ATTACHED TO THE CROWN LAND PERMIT.

THIS SITE IS WITHIN A WATER POWER RESERVE AND IS SUBJECT TO THE WATER POWER ACT AND ALL REGULATIONS THEREUNDER

1. THIS PERMIT IS ISSUED SUBJECT TO ALL ACTS, REGULATIONS AND LAWS WHICH MAY BE IN EFFECT FROM TIME TO TIME AND TO THE FOLLOWING CONDITIONS
2. That the information given in the application for this permit is true in substance and in fact.
3. Permittee shall pay Municipal and School Taxes as assessed under Part X, Chapter M225, C.C.S.M. of *The Municipal Act* and Part VII, Section 5, Chapter N100 C.C.S.M. of *The Northern Affairs Act*, or as both statutes may be amended from time to time.

Permittees located within Provincial Parks shall pay service fees as assessed under the Provincial Parks and regulations.
4. This permit shall allow only that land use for which this permit is issued. Any other use shall constitute violation of conditions of the permit and render it liable to cancellation.
5. The occupation of the lands or the operation of any facility on the lands by any person is subject to the approval of the Minister, notwithstanding the registration of any assignment of this permit.
6. Any structures allowed on permit areas must be constructed in accordance with Manitoba Building Code and Municipal by-laws and regulations. All permanent structures on unsurveyed land must be set back a minimum of 99' from the high water mark of lakes and rivers and a minimum of 125' from Provincial Road right-of-ways.

All structures and sewage disposal facilities erected or installed within Provincial Parks must conform with requirements of *The Provincial Parks Act*, Regulations thereunder and such conditions as may be prescribed by the Director of Parks.
7. Permittee shall not remove timber, fill, blackdirt, sand, gravel, etc. from permit area without authority of the Crown. Permittee requires work permit from local Conservation Officer to cut trees on permit area.

Provisions of *The Provincial Parks Act* and Regulations thereunder apply within Provincial Parks.
8. This permit shall not be assigned without consent of the Minister. If assignment is proposed the permittee shall notify the department, provide documentation to effect assignment and to pay all rents, fees and taxes up to assignment date.
9. The permit area shall be kept clean and orderly and free from fire hazard. Sanitation, garbage disposal or sewage systems shall be in accordance with Acts and Regulations.
10. Neither the Crown nor holder of mineral rights on the permit area shall be liable in any way for damages resulting from mining operations on the permit area or adjacent land.
11. Nothing herein contained shall create any liability on the part of the Crown or Manitoba Hydro for any damages caused or purporting to be caused in respect of said lands by raising or lowering waters bordering upon or adjacent to the said lands.
12. This permit shall in no way limit Manitoba Hydro's or Manitoba's right to raise or lower the water levels on any body of water which may affect the Land and Manitoba Hydro or Manitoba shall not be held liable for changes in the water level. Furthermore, this permit does not imply any guarantee of water levels at the Land.
13. The Permittee shall save the Crown harmless from any and all claims relating to or arising from the use or development of the permit area.
14. The issuing of this permit in no way implies that either the Crown or local governments shall provide any services unless otherwise stated.
15. Should any dispute arise over boundaries or use as described in this permit, decision of the Minister shall be final.
16. This permit does not warrant title.
17. This permit is subject to penalty or cancellation on 30 days notice.
18. Any notice or other communication to the Permittee shall be in writing and shall be delivered personally to the Permittee or an officer or employee of the Permittee or sent by mail postage prepaid, to the address on the Permit.
19. Any notice or communication sent by mail shall be deemed to have been received on the third (3rd) business day following the date of mailing. If mail service is disrupted by labour controversy, notice under Part 17 shall be delivered personally.
20. Notwithstanding Part 18 and 19, any written notice to be served or given by the Crown to the Permittee shall be effectively given or served by posting the same in a conspicuous place on the permit area.

Appendix B3
Churchill Wildlife Management Area
Use Permit

2022 WILDLIFE MANAGEMENT AREA USE PERMIT



Permit No. / No° de permis: 54357579

Organization / Organisme : Manitoba Hydro / TDEE Contact / Personne-ressource : Manitoba Hydro No. / N° : 200008910	360 Portage Ave - 18th Floor Winnipeg (Manitoba) Canada R3C 0G8	
The permittee is authorized to: / Le titulaire du permis est autorisé à : Decommission the Keewatinhk Converter Station site in accordance with the project outline in the attached Schedule A, Overview Map, Map 1, Map 2 and Map 3.	In the following area(s) described as / Dans la zone suivante appelée : Churchill Wildlife Management Area	
DATE OF ISSUE / DATE DE DÉLIVRANCE: February 03, 2023 / 03 février 2023 EXPIRY DATE / DATE D'EXPIRATION: March 31, 2024 / 31 mars 2024		
Any Schedules, Maps or Appendices included are considered conditions of this permit (if applicable).	Les annexes, cartes ou appendices inclus sont considérés comme des conditions du présent permis (le cas échéant).	
Conditions : <ol style="list-style-type: none"> Authority granted in this permit is limited to the permit holder, an employee of the permit holder, or a person under their supervision. / Le pouvoir accordé en vertu du présent permis est limité au titulaire du permis, à un employé du titulaire du permis ou à une personne sous sa supervision. The Government of Manitoba shall not be held responsible or liable for any damage, injury or loss sustained to the person or property of the permit holder or for any damage, injury or loss sustained by any other person or the property of any other person as a result of the exercise of a right or privilege granted herein. / Le gouvernement du Manitoba ne peut être tenu responsable des dommages, des blessures ou des pertes causés à la personne ou à la propriété du titulaire du permis, ni des dommages, des blessures ou des pertes causés à toute autre personne ou à la propriété de toute autre personne à la suite de l'exercice d'un droit ou d'un privilège accordé en vertu du présent permis. The permit may be cancelled or the conditions amended at any time. / Le présent permis peut être annulé ou ses conditions peuvent être modifiées à tout moment. The exercise, by the permit holder, of a right or privilege granted herein shall be construed as acceptance of and agreement to comply with the conditions set out herein. This permit in addition to and does not replace any other permit/licence required by another Act of the Legislature. / L'exercice, par le titulaire du permis, d'un droit ou d'un privilège accordé en vertu du présent permis doit être interprété comme une acceptation des conditions qui y sont énoncées et un engagement à les respecter. Le présent permis s'ajoute aux permis ou aux licences exigés par d'autres lois de la Législature et ne les remplace pas. A permit and the rights and privileges granted thereunder are not transferable to another person. / Le permis et les droits et les privilèges accordés en vertu dudit permis ne sont pas transférables à une autre personne. A permit must be carried while exercising a right or privilege granted thereunder and be produced on request of an officer. / Le titulaire du permis doit avoir son permis avec lui lorsqu'il exerce un droit ou un privilège accordé en vertu dudit permis et il doit le produire sur demande d'un agent. Conditions to be Added to This Permit : <ol style="list-style-type: none"> The permittee must monitor the area for the presence of caribou. Should a group of 50 or more caribou be observed in the work area, work must cease immediately. Work may only recommence once the group of caribou is 1 kilometer or more away from the site. Should caribou appear adjacent to the access road, vehicles must stop to allow the caribou to safely cross the road. Observations of polar bears must be immediately reported to the Regional Wildlife Manager, Vicki Trim, at 204-679-0659 or vicki.trim@gov.mb.ca. Wildlife must not be fed, harassed, chased, or intentionally killed in the project area. 		

Information collected is protected by the protection of privacy provisions of The Freedom of Information and Protection Privacy Act. / Les renseignements recueillis sont protégés par les dispositions relatives à la protection de la vie privée contenues dans la Loi sur l'accès à l'information et la protection de la vie privée.

This information is available in alternate formats, upon request. / Ces renseignements sont offerts en d'autres formats, sur demande.

**Bipole III Transmission Project,
Keewatinohk Converter Station
Construction Infrastructure
Decommissioning Project**

Project Infrastructure

- EMPA 1A
- Keewatinohk Construction Camp

Landbase

- Access Road

EMPA 1A

Keewatinohk
Construction
Camp

Imagery Source: Maxar

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: January 24, 2023



0 100 200 Meters
0 250 500 US Feet

1:5,000

**Keewatinohk Camp and Excavated
Material Placement Area (EMPA 1A)
Churchill Wildlife Management
Area Permit Application**

**Bipole III Transmission Project,
Keewatinohk Converter Station
Construction Infrastructure
Decommissioning Project**

Project Infrastructure

 Access Road Security Gatehouse Pad and Parking Lot

Infrastructure

 BPIII Route

Landbase

 Access Road



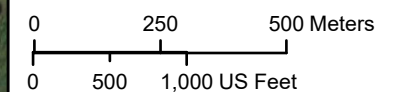
Access Road Security
Gatehouse Pad
& Parking Lot

Ground
Electrode
Site

NELSON RIVER

Imagery Source: Maxar

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: January 24, 2023



1:15,000

**Access Road Security Gatehouse
Churchill Wildlife Management
Area Permit Application**

Schedule A

Churchill Wildlife Management Area Use Permit Application Details:

Decommissioning of the former Bipole III Transmission Project Keewatinohk Converter Station remaining construction infrastructure, as shown on the areas of Maps 1, 2 and 3, is currently scheduled to commence March 1st, 2023 and requires approximately six (6) months to complete. The scope of work will include:

- Removal / demolition of existing buildings
- Break-up and removal of concrete/rebar building foundations
- Removal of screw pile foundations to 0.9 m below grade (bg)
- Removal of subgrade infrastructure to 0.9 m bg.
- Removal of temporary overhead utility infrastructure (e.g., poles, de-energized power lines)
- Potential discing of compacted yard and access areas
- Removal of any physical hazards

*Please note that the North East portion of borrow deposit N8 (Map 2) will only be used to receive waste concrete from the Keewatinohk Converter Station Camp foundations.

Equipment required to accomplish this work is expected to include:

- Crane
- Excavators (with jackhammer and other attachments)
- Rock trucks and other heavy vehicles for removal of demolition waste and delivery of clean fill
- Bulldozers
- Light vehicles

Appendix C

Timing Windows

Appendix C: Timing Windows

Project Wildlife Reduced Risk Timing Windows

Project Wildlife Reduced Risk Timing Windows

Species	Sensitivity	January	February	March	April	May	June	July	August	September	October	November	December
Mammals	Denning Sites	Red	Red	Red	Red	Green	Green	Green	Green	Green	Green	Red	Red
Amphibians/Reptiles	Amphibian Bearing Wetland	Green	Green	Green	Green	Red	Red	Red	Red	Red	Green	Green	Green
Snakes	Hibernaculum	Green	Green	Green	Green	Red	Red	Red	Red	Red	Green	Green	Green
Bats	Hibernaculum	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Birds	Breeding and Nesting	Green	Green	Green	Green	Red	Red	Red	Red	Red	Green	Green	Green
Fish	Spawning Areas	Green	Green	Green	Green	Red	Red	Red	Red	Red	Green	Green	Green

Reduced Risk to Wildlife Sensitive Time Period for Wildlife
 (Where construction activities occur during this period, mitigations measures will be prescribed on a site by site basis)

Appendix D: Buffers and setbacks¹

Feature ^A	Activity ^A	Non-Frozen Ground Setback Distance ^{2A}	Frozen Ground Setback Distance ^{2A}	Vegetated Buffer Distance ^{3A}
Vegetation^A				
Plant Species at Risk	Tower Foundation Siting	100m	100m	
	Clearing And Construction	30m		30m
	Maintenance	30m		30m
	Access Trail	30m	30m	
Anthropogenic^A				
Heritage and Cultural	All	Varies	Varies	Varies
Amphibians^A				
Northern Leopard Frog/Eastern Tiger Salamander (known breeding pond, watering site)	Tower Foundation Siting	30m	30m	
	Clearing And Construction	30m		30m
	Maintenance	30m		
	Access Trail	30m	30m	
Reptiles^A				
Garter Snake Hibernaculum		200m	200m	
Landforms^A				
Wetlands	Construction			30m
	Maintenance			30m
	Access Trail			30m
	Hazardous Material Handling/Storage	100m	100m	
	Soil Stockpiles	30m		30m
Mammals^A				
Mineral Licks	All	120m		120m

Feature	Activity	Non Frozen Ground Setback Distance ²	Frozen Ground Setback Distance ²	Vegetated Buffer Distance ³
Occupied Mammal Dens (Red fox, Gray fox, Coyote, Wolf, Bobcat, American badger, American marten, Fisher, Least weasel and Raccoon, Black Bear, Polar Bear)	All	50m	50m	
Occupied Bear Den	All	150m	150m	150m

¹ALL MEASUREMENTS ARE FROM EDGE OF FEATURE

²NO WORK ALLOWED WITHOUT MANITOBA HYDRO TRANSMISSION & DISTRIBUTION ENVIRONMENT AND ENGAGEMENT DEPARTMENT REVIEW AND APPROVAL, WHICH MAY BE SUBJECT TO REGULATORY APPROVAL.

³SHRUB AND HERBACEOUS VEGETATION RETAINED

⁴BEAR/MAMMAL DEN SITES ARE HIGHLY VARIABLE AND MAY BE FOUND IN CAVES, CREVASSES, OVERTURNED TREES, OPEN GROUND NESTS, AND LOW-SWEEPING BRANCHES OF A CONIFEROUS TREE.

Appendix D: Flagging and signage standards

Clear identification of Environmentally Sensitive Site locations and applicable buffers in the field is an important part of successful environmental protection implementation. Establishing consistent use of signage and flagging tape is important to reduce confusion and for the clear identification of Environmentally Sensitive Sites and travel routes.

Flagging

A system of standardized flagging colors has been established to reduce the potential for confusion during decommissioning. where there are multiple or overlapping areas are being identified. Colour patterns for flagging tape (Figure 1), used to identify categories, are described below and are also identified with the Environmentally Sensitive Sites in the associated Map Sheet.

Yellow/Black-

Heritage (Archaeological, Cultural or Historic importance)

Orange/Black-

Access routes (Intersections with trails, traplines? etc),

Land Use (Conservation, Crown Land, Recreation)

Resource Use (Agriculture, Food/Medicinal, Forestry, Hunting/Fishing, Trapping)

Pink/Black-

Ecosystem (Habitat, Research or Species of concern, Invasive Species, Traditional Use)

Soils and Terrain (Erosion, Terrain)

Wildlife (Birds and Habitat, Mammals and Habitat, Reptiles/Amphibians and Habitat)

Blue/White-

Water (Water Crossings, Wetlands, Ground Water)

A Cross hatched flagging has been chosen as it is distinct from other flagging present during construction.



Figure 1: Examples of approved flagging tape used in delineating Environmentally Sensitive Sites

Flagging InstructionsAA

Consistency in flagging procedure is important to its effectiveness. The goal of flagging is to clearly indicate the boundary of an Environmentally Sensitive Site that requires a modification to decommissioning activities in relation to the surrounding area. When identifying an area, flagging tape (colour determined by categories above) will be tied to wooden staking and/or sturdy trees or shrubs that will not be moved during decommissioning activities. Flagging spacing will be decided on a site-by-site basis and will consider density of flagging already present in the

area, the size of the area being flagged (smaller area requires higher number of flags) and the density of vegetation or topography present. The primary concern would be to apply flagging at a frequency that would make the line of separation obvious to construction/decommissioning crews.

Flagging ~~A~~ bufferAA

ESS mitigation often involves establishing a buffer of a certain size around a location so that activities are modified in that location (Figure 2):

Point - A Buffer is established by measuring out from the center of that point to form a perimeter buffer (measured as a radius).

Line - When buffering a line feature, the buffer is measured from the edge of the feature that the line indicates (on both sides).

Polygon - The buffer of an area is established by measuring out from the feature's edge creating a perimeter buffer, similar to a point buffer.

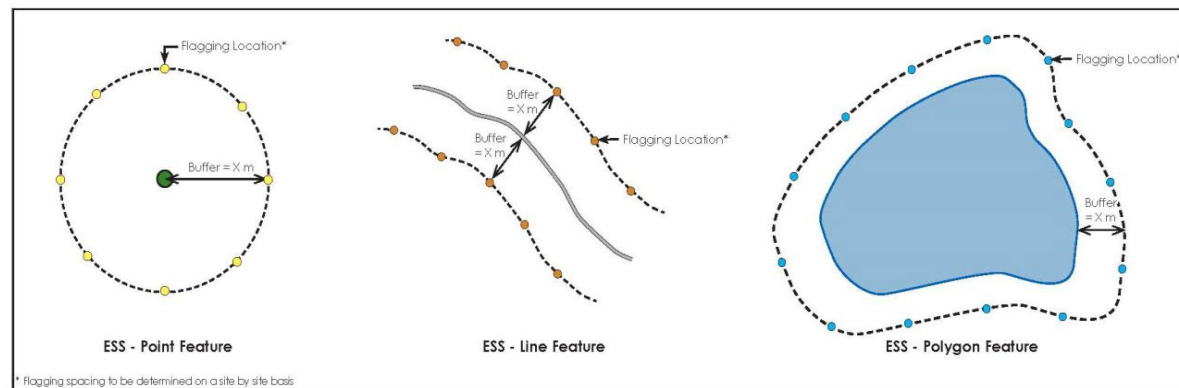


Figure 2 Buffer establishment for geometry types

Signage

Signage can be used in conjunction with flagging. Identification of vegetation clearing types, access or bypass trails as well as identification of ESS can be accomplished using signage.

Access signs are orange with black lettering,

Bypass signs are yellow with black lettering and

ESS signs are reflective white with black lettering.

Appendix E

Cultural and Heritage Resources Protection Plan (CHRP)



STANDARD CULTURAL AND HERITAGE RESOURCES PROTECTION PLAN

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Document Owner
 Licensing and Environmental Assessment Department
 Transmission Planning and Design Division
 Transmission Business Unit
 Manitoba Hydro

Version - Final 1.0

List of Revisions

Number	Nature of Revision	Section(s)	Revised By	Date
Final 1.0	Document has been approved and published			2020_0610 9

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Key messages for construction

Workers in the field should remain vigilant to watch for and report any discoveries. Manitoba Hydro expects workers to report any findings to the Manitoba Hydro On-Site Supervisor or designate.

If human remains, a cultural and/or heritage site are found, activities stop at that location.

The Manitoba Hydro Licensing and Environmental Assessment Department is prepared to offer the required support to On-Site Supervisors including archaeological services, to preserve and protect cultural and heritage resources. LEA can be contacted at 1-877-343-1631 or leaprojects@hydro.mb.ca.

Potential fines

Under The Heritage Resources Act, any person who contravenes or fails to observe a provision of this Act or a regulation, order, by-law, direction or requirement made or imposed thereunder is guilty of an offence and liable, on summary conviction, where the person is an individual, to a fine of not more than \$5,000. for each day that the offence continues and, where the person is a corporation, to a fine of not more than \$50,000. for each day that the offence continues.

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Preface

This standard Cultural and Heritage Resources Protection Plan outlines protection measures and protocols that Manitoba Hydro, its contractors and/or consultants will undertake in the event of the discovery of previously unrecorded cultural and **heritage resources** during construction, maintenance or operation of an electrical or gas transmission line or facility.

The intent for this document is to be a straightforward and practical reference document for use by the Manitoba Hydro On-Site Lead, Environmental Inspector and/or Indigenous Communities and Organizations. Manitoba Hydro - Licensing and Environmental Assessment Department encourages anyone to provide feedback on this document and will review this plan on an annual basis. Feedback can be provided to LEAprojects@hydro.mb.ca.

Some words in the text are in **bold face** the first time they occur in the document and definitions are included in the glossary in section 3.0.

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1.0 Introduction

Manitoba Hydro understands and appreciates the value that Manitobans place on cultural and heritage resources and the rich legacy found throughout our Province. Manitoba Hydro's commitment to safeguarding these resources has led to the development of this Cultural and Heritage Resources Protection Plan (CHRPP). The CHRPP will provide clear instructions if Manitoba Hydro, its contractors and/or consultants, discover or disturb a cultural or heritage resource and will determine the ongoing protection measures for the resources through processes outlined in this document.

1.1 Commitment to environmental protection

Protecting the environment is an integral part of everything Manitoba Hydro does. Manitoba Hydro accomplishes this by integrating environmentally responsible practices in all aspects of our business. Environmental protection can only be achieved with the full cooperation of Manitoba Hydro employees, consultants and contractors at all stages of the Project from planning and design through construction and operational phases.

The use of a Cultural and Heritage Resources Protection Plan (CHRPP) is a practical and direct implementation of Manitoba Hydro's environmental policy and its commitment to responsible environmental and social stewardship. It is a proactive approach to manage potential discoveries of **human remains**, cultural and heritage resources.

Manitoba Hydro is committed to implementing this CHRPP. Manitoba Hydro will also require companies that contract with us to follow the terms of this and other applicable plans.

1.2 Regulatory and policy setting

Legislation that commonly applies to cultural and heritage resources for construction, maintenance or operation of transmission lines or facilities includes: *The Heritage Resources Act (The Act)* and the *Province of Manitoba Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains (Burials Policy)*. This CHRPP is consistent with and does not replace the above. In effect, the CHRPP builds on the protective measures afforded by *The Act and policy*.

1.3 Implementation

The goal of the CHRPP is to act as a reference manual to describe key actions in the event of discovery of cultural or heritage resources or human remains. Manitoba Hydro will inform relevant employees and contractors working on the Project of the contents of applicable regulatory specifications, guidelines, licenses, authorizations and permits, and of this Plan, and copies will be available from the On-Site Lead office.

The plan also allows for adaptive management to include new and evolving strategies, protocols and information to support and protect culture and heritage resources. Appendix B includes a Protocol template that interested communities and organizations can complete to augment and enhance this CHRPP.

This Protocol could provide feedback on items such as:

- Whether the community/organization wants Manitoba Hydro to contact them upon discovery of unrecorded cultural or heritage resources
- Who and how to contact the Community Representative(s) upon discovery of unrecorded cultural or heritage resources
- When the Community Representative(s) would like to be contacted
- Description of the Area of Interest the Community feels may contain heritage and **cultural resources** important to them
- General types of cultural and heritage resources that may be in Area of Interest
- Ceremonial or spiritual activities the community would like conducted prior to construction
- Any other concerns the community may have with regard to cultural and heritage resources
- Whether the community has received a copy of this Standard CHRPP

Upon the discovery of unrecorded cultural or heritage resources, Manitoba Hydro will follow the steps outlined in section 1.8 in conjunction with the applicable attached Protocols.

1.4 On-site project management structure

Manitoba Hydro staff and consultants will be required to undertake activities, steps, procedures and measures set out in the Figure 1-1 and Figure 1-2 should cultural or heritage resources or human remains be discovered during the construction, operation or maintenance of the project. There is a potential to discover cultural and heritage resources in many different locations and workers in the field should remain vigilant to watch for and report any discoveries. Manitoba Hydro expects workers to report any findings to the Manitoba Hydro On-Site Supervisor or designate.

The Manitoba Hydro Licensing and Environmental Assessment Department is prepared to offer the required support to On-Site Supervisors including archaeological services, to preserve and protect cultural and heritage resources. LEA can be contacted at 1-877-343-1631 or leaprojects@hydro.mb.ca.

In order to conduct any type of archaeological or heritage resource investigation, a Heritage Permit is required from the Historic Resources Branch (HRB) (Manitoba Sport, Culture and Heritage Department). The HRB is responsible for the issuance and management of heritage permits. Permits can only be issued to Registered Archaeologists; LEA has access to archaeologists to support any investigation.

1.5 Human remains


The Heritage Resources Act (1986), Section 43 (1) states that “human remains” means:

“remains of human bodies that in the opinion of the minister have heritage significance and that are situated or discovered outside a recognized cemetery or burial ground in respect of which there is some manner of identifying the persons buried therein.”

Manitoba Hydro will not disturb or remove human remains from their original resting place unless removal is unavoidable and necessary. Out of respect for the remains, all work related to the remains will be conducted as much as possible out of the public eye.

Funerary (grave) goods found with human remains will accompany human remains at all times. No reports related to any such find and its analysis will be published unless the Community Representative(s) consents to such publication, other than such reports provided to Manitoba Hydro and the Historic Resources Branch or other agencies as may be required by law. The following describes the practices that Manitoba Hydro will follow if **skeletal remains** believed or known to be human remains and/or accompanying grave goods are discovered or disturbed:

Figure 1-1 Discovery of human remains

Discovery of Human Remains					
	On Site Lead	Licensing and Environmental Assessment	Archaeologist	Manitoba Historic Resources Branch (HRB)	RCMP
Step 1					
Step 2	Immediately mark discovery location with flagging tape and cordon off with temporary fencing (minimum buffer distance 35 m radius from centre of discovery)		Size of buffer may be adjusted once archaeologist, in consultation with HRB, examine site [i.e., on a case-by-case basis].		
Step 3	Contact Licensing and Environmental Assessment	Contact archaeologist and communities/ organizations with protocols	Contact HRB		
Step 4			Determine whether human remains are present → If remains human, contact RCMP		
Step 5			For human remains, if not already known, confirm whether RCMP and/or the Chief Medical Examiner have an ongoing interest in remains under <i>The Fatalities Inquiries Act</i> .		
Step 6			If remains are non-forensic and their removal is required to protect remains, lead exhumation of human remains.	If remains are forensic in nature or cannot be immediately determined whether remains are forensic, RCMP and Chief Medical Examiner have jurisdiction over area of find and human remains	

Discovery of Human Remains					
	On Site Lead	Licensing and Environmental Assessment	Archaeologist	Manitoba Historic Resources Branch (HRB)	RCMP
Step 7		If human remains are left in place where discovered, Community Representative(s) may arrange for and facilitate an appropriate ceremony		HRB and/or archaeologist directs cautious investigation of surrounding surface prior to exhumation of remains to determine if other human remains or artifacts are in area	
Step 8			Locate and document human remains with GPS, record relevant data and submit with reports to HRB, construction supervisor and Community Representative(s)	Oversee basic non-invasive physical anthropological techniques, including drawings, sketches and initial measurements to assist in determining basic information about individual	
Step 9	Construction activities in vicinity of site that will not impact artifacts or related archeological activities may proceed	LEA would work with communities to decide whether and what type of analysis would be done on remains.	No construction activities within buffer until archaeologist has completed archaeological investigation		

1.6 Heritage resources

Heritage resources are the physical remains of past cultures. They are the product of human art, workmanship or use, including plant and animal remains that have been modified by or left behind due to human activities.

The *Manitoba Heritage Resources Act* (1986) defines “Heritage Resource” as:

(a) a heritage site;

(b) a heritage object, and;

(c) any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof (Section 1).

There are two types of heritage resources, **artifacts** and features. Heritage objects (artifacts) can be as small as a single stone flake (a product from stone tool production) or as large as a shipwreck. Other types of artifacts can include butchered animal bones, pottery, and historic materials such as nails, bottle glass, beads that are at least 75 years or older. Features are *in situ* (or *in place*) objects or changes to the landscape that are non-portable, meaning that they cannot be easily removed from their original location. Examples of features include petroforms (stones that have been placed in a shape or design and may be an effigy of an animal or thunderbird nest). Stones were also used as waymarkers or could indicate a food cache or burial location.

All heritage resources, whether a single isolated find (such as single artifacts) or a site with numerous artifacts and/or features, are protected under the Act. These physical remains can provide some evidence of specific activities such as campsites, work stations, quarries, kill sites, and post-contact settlement, industry and events. Deliberate destruction or disturbance of heritage resources is considered an offence. Certain heritage resources have special consideration such as pictographs, petroforms or ceremonial sites and represent a connection to First Nation and Metis to the landscape. Cultural resources

1.7 Cultural resources

For the purposes of this plan, Manitoba Hydro defines Cultural resources as an object, site or location of a traditional or cultural practice that is the focus of traditional or contemporary use and is of continuing importance to people. Some examples include important resource gathering areas, sites of spiritual significance or ceremonial sites.


Although there are some commonalities, each community has a unique interpretation of what the cultural resource value represents.

1.8 Practices that Manitoba Hydro will follow if cultural and heritage resources are found

Manitoba Hydro and its contractors will leave all artifacts **in situ**, that is, in the same position and will not remove objects from the site until advised by the archaeologist. There will be no activities within the buffer until the archaeologist has completed their archaeological investigation. No reports related to any such find and its analysis will be published, other than such reports provided to Manitoba Hydro and the Historic Resources Branch or other agencies, as may be required by law.

The following describes the practices that Manitoba Hydro will follow if cultural and heritage resources are found:

Figure 1-2 Discovery of cultural and heritage resources

Discovery of Cultural and Heritage Resources				
	On Site Lead	Licensing and Environmental Assessment	Archaeologist	Manitoba Historic Resources Branch (HRB)
Step 1				
Step 2	Contact Licensing and Environmental Assessment	Contact archaeologist and communities/ organizations with protocols	Contact HRB	
Step 3	Establish buffer around find (minimum 35 m radius from centre of discovery)			
Step 4	Talk to archaeologist and immediately email them photos of find		Talk to On Site Lead, review photos and determine significance of find	
Step 5			Obtain Heritage Permit from HRB	
Step 6			Direct cautious exploratory investigation to determine if other artifacts in area	
Step 7		If discovery includes sacred or ceremonial objects, Community Representative(s) may arrange and facilitate appropriate ceremony		

Discovery of Heritage Resources				
	On Site Lead	Licensing and Environmental Assessment	Archaeologist	Manitoba Historic Resources Branch (HRB)
Step 7			Undertake: extended surface reconnaissance; - shovel tests at regular intervals perpendicular and parallel to artifact deposit; - controlled collection of data about artifacts, including mapping using global positioning system or chain and compass; and - test excavations, if necessary	
Step 8			Locate and document finds with GPS, record relevant data	
Step 9			Collect and place artifacts in protective container include date, project, contents, coordinates and other information, including site classification	
Step 10				Evaluate heritage resource site and findings presented by archaeologist to determine if further mitigative action is necessary before construction in site vicinity may continue
Step 11	Construction activities in vicinity of site that will not impact artifacts or related archeological activities may proceed		If MH cannot avoid site based on progress of construction, direct site's removal by standard and most appropriate excavation methods.	No construction activities will take place at site until HRB is satisfied that site removal is complete and meets provincial standards
Step 12			Submit copies of technical data and reports to HRB and MH	

2.0 Reporting and follow-up

The archaeologist will establish and maintain a record for each discovered or disturbed heritage object and of any human remains found during construction. Information will include the **provenience**, artifact chain of custody, as well as a conservation and /or identification plan for the heritage resource or resources associated with each record. This is a requirement of *The Heritage Resources Act*. The Province of Manitoba manages a descriptive inventory regarding the physical location and composition of archaeological sites. All artifacts and field-collected data such as notes, photographs and geo-referenced information is provided to the HRB who has ownership of heritage resources found in the Province.

The archaeologist will prepare an annual report, as well as updated summaries and technical reports as are necessary, to the HRB as partial fulfillment of the Heritage Permit and to Manitoba Hydro who in turn will share with the applicable Community Representative(s). The report will provide the following information:

- A record of the human remains found. This will include the reporting, exhumation and reburial of the found human remains per the Provincial policy, the date of the report and the process by which Manitoba Hydro managed, honored and reinterred the remains.
- A record of archaeological investigations and finds documented throughout each year.
- A summary of any directions provided by the Community Representative(s) regarding permission granted to conduct specialized analysis (where such permission is required).
- A record of the heritage objects that Manitoba Hydro found and the process by which they managed the heritage objects.
- Any additional information concerning matters of significance related to heritage resources.

Manitoba Hydro will treat information shared by Indigenous communities regarding burial sites, sacred sites and other sites traditionally and presently used for cultural and ceremonial purposes as confidential and may only be shared with the Province or other authorities if agreed upon by the community to which the resource is associated.

Specific information regarding details or locational information of these cultural or ceremonial sites will not be included in the recording or reporting processes nor included in the HRB's site database.

Manitoba Hydro appreciates that this is sensitive information; the reports will be treated as confidential, unless otherwise authorized or specified by the Community Representative(s), if applicable, in discussion with the HRB.

The archaeologist will prepare an overview of the annual report and provide it LEA to review with the On-Site Supervisor. The overview report will not contain confidential information but will include information required by the On-Site Supervisor in order to fulfill regulatory and managerial responsibilities.

If requested, the archaeologist will meet with the applicable Community Representative(s), HRB and the Manitoba Hydro Licensing and Environmental Assessment Department to review the reports.

3.0 Glossary of terms

Artifacts	Any object made or modified by a human being.
Caches	Rock features in which supplies were stored.
Cultural Resource	An object, site or location of a traditional or cultural practice that is the focus of traditional or contemporary use and is of continuing importance to people.
Diagnostic	Any artifact that provides information as to cultural affiliation or age.
Exhumation	The act of removing a buried, or once buried, human body from the grave or found location.
Funerary goods	Items placed with a person at the time when they were buried. Often referred to as Grave Goods, these items are treated no differently than the person's actual skeletal remains.
Forensic	Of interest to law enforcement or Office of Chief Medical Examiner.
Heritage Resource	The Manitoba Heritage Resources Act (1986) defines "Heritage Resource" as: (as) a heritage site; (b) a heritage object, and; (c) any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof (Section 1).
Human Remains	The remains of human bodies, normally referring to those recovered in the skeletal form. This may range from a single bone or tooth to complete skeletons.
Identification	Refers to the process of examining human skeletal remains in order to determine jurisdiction and disposition of the remains. This may be done by archaeologists trained in human osteology, or physical anthropologists. Age at death, sex, height, general health, relative age: recent, early contact or ancient age may be possible along with ethnic identification.
In situ	An artifact is found in the exact spot that it was probably deposited at some time in the past.
Manitoba's Burials Policy (1987)	Short name of: ' <i>Province of Manitoba Policy Concerning the Reporting, Exhumation, and Reburial of Found Human Remains.</i> ' This is the 1987 Provincial Cabinet approved policy based on <i>The Heritage Resources Act</i> (1986) governing and directing the actions, responsibilities, duties and task to be undertaken upon the discovery of found human remains in Manitoba.
Matrix	The consistency and quality of the soil.

Morphology	The form, structure and method by which an object is created.
Non-Forensic	Not of interest to law enforcement or Office of Chief Medical Examiner.
Ochre	An earthy clay colored by iron oxide – usually red, but can be yellow.
Provenience	The original place of an artifact. Can be measured by two or three-points.
Stratum	A layer of soil that is distinct and separate from that above and below it.
Skeletal Remains	Skeletal remains are all that is left of a corpse after nature has taken its course and has disposed of skin, tissue, and any other organ that may cover the skeletal frame.
<i>The Heritage Resources Act (1986)</i>	The Provincial legislation (law) governing the physical heritage of all Manitobans, located in Manitoba on either provincial crown lands or private lands within the province of Manitoba.
Way-markers	A sign or feature that marks a portage or trail or announces a change in direction.

Appendix A: Resources Identification Guide

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Examples of cultural and heritage resources of potential interest

The following are some examples of surface or sub-surface heritage objects or features that may be encountered in the field that have the potential to be of archaeological interest or cultural significance. These descriptions are provided for information only.

When the features described in these examples are encountered in the field, or when it is otherwise believed that a site potentially may be of archaeological interest, a Manitoba Hydro On-Site Supervisor/delegate or Environmental Inspector/Officer must be notified.

In situ artifacts

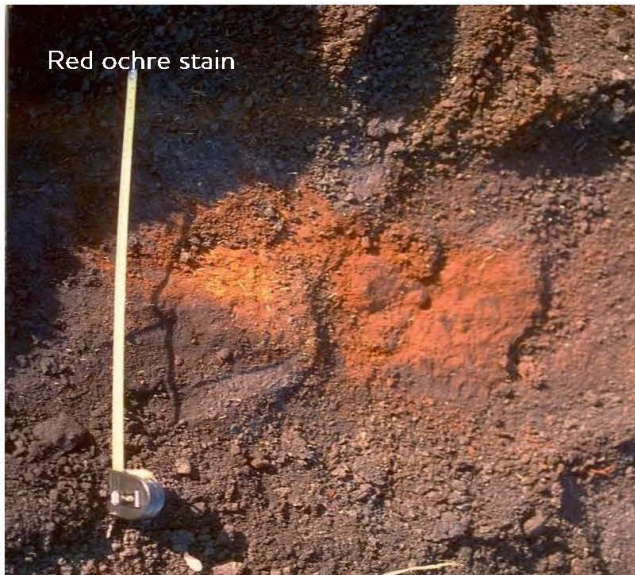
Projectile points, pottery, historic trade goods and thousands of other types of artifacts have been recovered from across the Province. Before collection, the artifact will be photographed and the surrounding vegetation and soils described in detail. If a diagnostic artifact is found during a controlled surface collection, the recovery of the artifact will not take place until mapping is complete.

Often metal objects are found abandoned along old portage routes, former trails and at long-forgotten cabin sites. This old, blue enameled kettle was found in the hollow of a tree with tin cups nestled inside. The way that metal tins were constructed can be dated. Glass fragments can also be identified as belonging to a certain time period. The morphology and markings on bottles help archaeologists to date sites.



Soil Staining

Discolourations in the soil may indicate an archaeological site. The following examples are common colours associated with artifacts, features that have been found within the Province.



Red or yellow Ochre or rust stains can be found in the soil. They can be the result of oxidized metal fragments or nails, red or yellow ochre nodules may indicate a burial or ceremonial activity.

Soil staining can also be found in the form of charcoal flecks and white ash from a hearth or fire pit. Black soil stains may indicate human activity and organic materials or a living floor. Cultural strata can vary in depths depending on the length of occupation at the site. The presence of burned bone, fire-cracked rock, stone chips, pottery and other objects may be found in association with soil discolouration and would confirm the soil staining is a cultural layer.



Animal Bone

Animal Bone (mammal, bird, fish) at a site can indicate the kinds of resources that were being used as food as well as indicate seasonality of occupation.



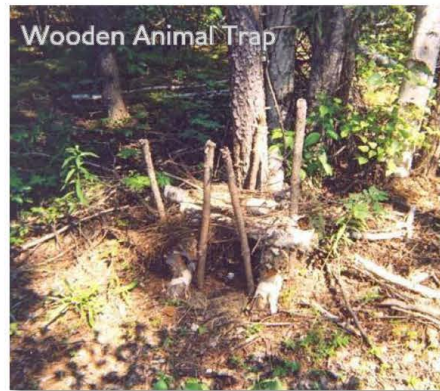
Bone was also an important material for tool manufacturing. Common bone tools include fleshers and beamers fashioned from large mammal long bones, barbed spear points and harpoons, awls and needles. Bones at a site can indicate the kinds of animals that were being used as food. The ulna of swans, eagles and other large birds were used for bird whistles.



Key features to look for on bones to determine if they have been deposited by humans include signs of cut-marks or burning or staining which may indicate human modification by various butchering or processing techniques.

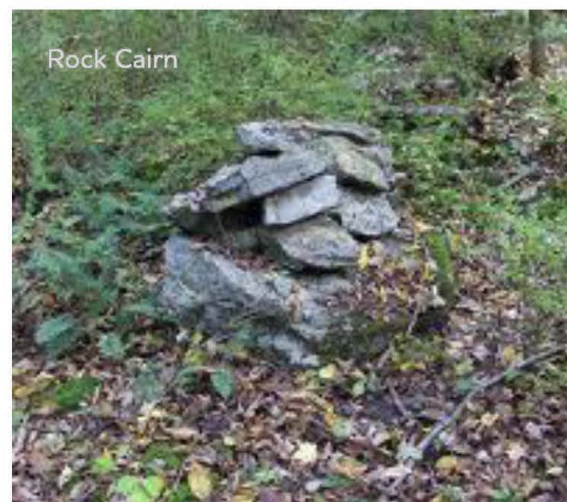
Culturally modified trees

Occasionally evidence of cultural practices is found in the form of modified trees such as the birch trees noted in this photograph. Birch bark was used for many purposes such as storage baskets, canoes and more recently, birch-bark biting crafts. Cut wood has been used to construct animal traps, as a material for building or for firewood and indicates that humans have been in the area.



Stone features

There are many different kinds of stone alignments that have been constructed by humans: **Way-markers**, **caches**, ceremonial sites, building foundations, tepee rings and burials are the major rock features that are found during archaeological investigations. These can be on or above the ground surface or buried features.



Ground or Structural Features

It is especially important to note unusual ground features. Depressions or mounds that are out-of-place from the surrounding landscape may indicate an underlying structure or possible burial. The manner in which structural features are constructed can be dated.



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Appendix B: Cultural and heritage resource protection protocol

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CULTURAL AND HERITAGE RESOURCE PROTECTION PROTOCOL

Community/Organization: _____

1. Do you want Manitoba Hydro to notify your community/organization about cultural and heritage discoveries?

Yes No

2. If yes, we would like to be notified about the following type of discoveries:

Human remains	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Heritage/cultural resources (pictographs, petroforms, bone tools)	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

3. Leadership have chosen _____ as the community representative that Manitoba Hydro should contact for heritage or cultural resources discoveries

Phone number: _____

Cell phone: _____

Email address: _____

Preference for contact _____

(i.e.: cell phone, email)

4. Should a previously unrecorded heritage or cultural resource be encountered, would your community like to conduct a ceremonial or spiritual activity?

Yes No

5. Could you please draw the area of interest to your community for cultural and heritage resources on the attached map? This information can be kept confidential.

6. Are you aware of recent discoveries of the following in the area near the project:

Human remains	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Heritage/cultural resources	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

7. Have you received a copy of the Cultural and Heritage Resources Protection Plan?

Yes No

Date: _____

Filled out by (Please print): _____

Signature _____

Appendix F

Avian Protection Documents

Appendix F: Avian Protection Documents

Appendix F-1: Terrestrial Bird Conservation Regions and Breeding Bird Seasons for

Activity (examples provided for guidance)	Disturbance Level	Training Required	General Mitigation
1 vehicle/equipment round trip (two passes) per 0.5 hour; Foot traffic, surveying; Inspection activities	Low	General Avian Awareness Training*	Operators and workers remain vigilant for any possible bird nesting activity, provide 5 m berth
2-5 vehicle/equipment round trip (two passes) per 0.5 hour; Any sustained activity for >1-4 hours over a 12 hour period within 100m of work site;	Moderate	General Avian Awareness Training* and Consult a Manitoba Hydro Environmental Officer	General Mitigation Approach for Reducing Risk to Nesting Birds as per Appendix E-3 Nest sweep protocol as per Appendix E-4
>5 vehicle/equipment round trip (two passes) per 0.5 hour; Any sustained activity for >4 hours within 100m of work site;	High		

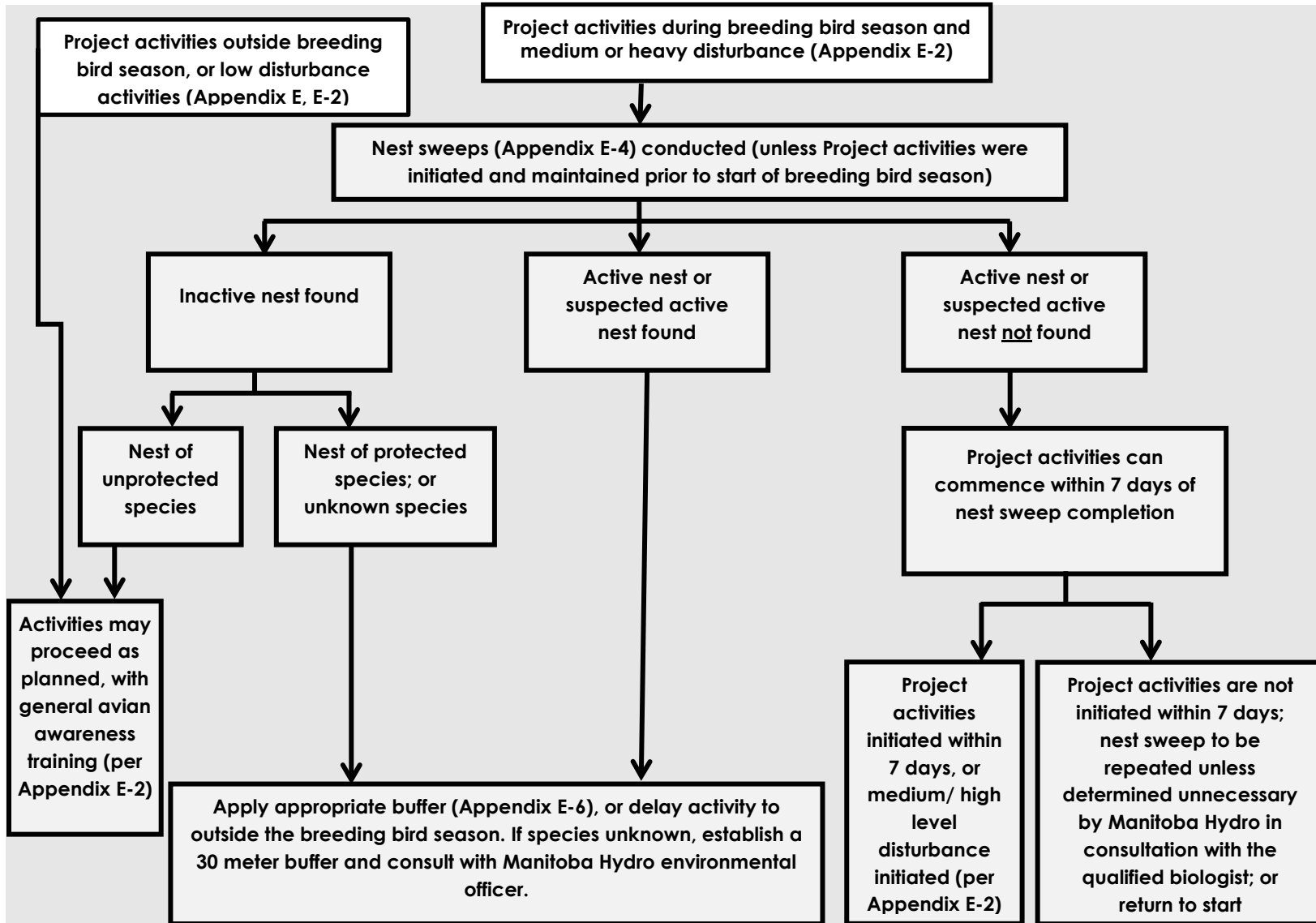
Manitoba

Appendix F-2: Determining Disturbance Level for Nesting Birds during Breeding Bird Season (May 1 - August 16)

*General Avian Awareness Training

General avian awareness training is to be provided to all crews and contractors conducting fieldwork. General avian awareness training involves basic introduction to bird biology, nesting characteristics, government regulations, and instruction on how to contact Manitoba Hydro environmental officers, when specific questions arise.

Appendix F-3: General Mitigation Approach for Reducing Risk to Nesting Birds



Appendix F-4: Nest Sweep Protocol

Birds may nest on the ground, others nest in shrubs and/or trees, while other nest along the edges of water bodies. Some species may nest in wood poles and on buildings. Nest sweeps are to be conducted on lands and infrastructure with potential to support bird nesting. A qualified biologist employed by Manitoba Hydro, a contractor, or consultant are to complete nest sweeps no more than 7 days before disturbance activities. To complete a nest sweep:

Nest sweeps are to be done on foot and can be completed from sunrise until 1800 hours, however birds are most active from sunrise until 1000 hours. Nest sweeps will be discontinued during high winds or precipitation as birds are less active.

In advance of any medium or heavy disturbance activity (Appendix E-2) walk the entire area, ensuring full coverage. Recommended spacing between parallel transects is approximately 10 m, but surveyors may reduce this spacing as necessary.

Walk slowly, observing from ground-level to the tops of the trees and poles.

If a nest is suspected to be nearby based on bird behaviour (e.g. acting strange/aggressive or agitated vocalizations), try to locate the nest location.

If the nest is found, mark the location with flagging tape (tie the flagging tape to a tree, stake, or other landmark several meters away). Record the following information on the flagging tape: location of the nest including UTM coordinates, type of bird (songbird, waterfowl, pileated woodpecker) and the date.

If the bird species and the corresponding necessary buffer size cannot be readily determined, establish a temporary minimum 30 meter "no disturbance" buffer around the nest site.

Once the bird species has been determined, an appropriately sized "no disturbance" buffer must be setup around the nest location. Consult Appendix E-6 and select the most appropriate buffer or contact a Manitoba Hydro Environmental Officer.

Use flagging tape or appropriate signage to mark the required buffer around the nest location.

Enter each nest observation into the nesting bird collection form (Appendix E-5- MH will provide digital version for submission) and include what actions were taken or what actions are recommended*.

Continue nest sweep until the entire area scheduled for construction activity has been adequately searched.

If a nest was found, there are two options:




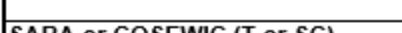
Defer disturbance within the required buffer as outlined in Appendix E-6. Activity can recommence after breeding bird nesting season, as described in Appendix E-1; or

Check the nest again seven (7) days from the day it was found to see if eggs have hatched and birds have left. If there is no sign of activity, complete another nest sweep of the buffer area. If no nests are found, proceed with activity. If after (7) days, the nest is still occupied, continue checking at seven (7) day intervals.

Nest Sweep Extension





As per Appendix E-3 nest sweeps may be extended for one additional day for every day a medium or high level disturbance is initiated and/or sustained.

Appendix F-6 Manitoba Hydro Breeding Bird Buffer Guidelines

Key	
	MBCDC specified
	100-200 m Buffer
	50 m Buffer
	25 m Buffer
SARA or COSEWIC (T or SC)	= Federal listing
CDC Red or Blue List	= Provincial listing





Species	Scientific Name	SARA (schedule & status)	COSEWIC (status & date assessed)	Habitat	Minimum Suggested Buffer (Meters)	Incubation Time (days)	Estimated Time to Leaving Nest or Fledging after hatching (Days)	Jurisdiction for Birds (F=Federal migratory, P=Provincial year-round resident), Nests = Provincial legislation for Herons, Eagles and others
Alder Flycatcher	<i>Empidonax alnorum</i>				25	12-14	12-15	F
American Bittern	<i>Botaurus lentiginosus</i>			Emergent-dominated wetlands	25	24-28	1-4	F
American Coot	<i>Fulica americana</i>			Emergent-dominated wetlands	25	21-25	1-4	F
American Crow	<i>Corvus brachyrhynchos</i>				Zero	15-18	28-35	None
American Dipper	<i>Cinclus mexicanus</i>				25	13-18	12-14	F
American Goldfinch	<i>Spinus tristis</i>				25	10-12	12-14	F
Green-winged Teal	<i>Anas c. carolinensis</i>				25	20-24	1-4	F
American Kestrel	<i>Falco sparverius</i>			Forest clearings, grassland, or pasture	25	29-30	30	P
American Pipit	<i>Anthus rubescens</i>				25	13-15	12-14	F
American Redstart	<i>Setophaga ruticilla</i>				25	12-14	12-14	F
American Robin	<i>Turdus migratorius</i>				25	12-14	12-14	F
American Three-toed Woodpecker	<i>Picoides dorsalis</i>				25	12-14	18-23	F
American Tree Sparrow	<i>Spizella arborea</i>				25	12-14	12-14	F
American white pelican	<i>Pelecanus erythrorhynchos</i>			Isolated islands	1000	30		P
Arctic Warbler	<i>Phylloscopus borealis</i>				25	12-14	12-14	F
Bald Eagle	<i>Haliaeetus leucocephalus</i>			Forests near water	1000	28-35	35-49	P
Baltimore Oriole	<i>Icterus galbula</i>			Forest, deciduous	25	12-14	12-14	F
Band-tailed pigeon	<i>Patagioenas fasciata</i>	Special Concern -1	SC	Riparian Forest; Pasture/Old Field; Cultivated Field; Deciduous/Broadleaf Forest; Conifer Forest	25			F
Bank Swallow	<i>Riparia riparia</i>		T (Apr 2013)	Rivers	300	14-16	17-18	F
Baird's Sparrow	<i>Ammodramus bairdii</i>	Special Concern -1	SC	Native grass prairie	500	11-12	8-11	F
Barn Swallow	<i>Hirundo rustica</i>		T (May 2011)	Forest clearings, grassland, or pasture	100	13-17	17-18	F
Barred Owl	<i>Strix varia</i>			Mature forest	1000	28-33	28-35	P
Barrow's Goldeneye	<i>Bucephala islandica</i>			Open water wetlands or riparian	25	28-44	1-4	F
Bay-breasted Warbler	<i>Setophaga castanea</i>			Forest, coniferous	50	12-14	12-14	F

Appendix F-6 Manitoba Hydro Breeding Bird Buffer Guidelines

Key	
	MBCDC specified
	100-200 m Buffer
	50 m Buffer
	25 m Buffer
SARA or COSEWIC (T or SC)	= Federal listing
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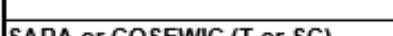
Species	Scientific Name	SARA (schedule & status)	COSEWIC (status & date assessed)	Habitat	Minimum Suggested Buffer (Meters)	Incubation Time (days)	Estimated Time to Leaving Nest or Fledging after hatching (Days)	Jurisdiction for Birds (F=Federal migratory, P=Provincial year-round resident), Nests = Provincial legislation for Herons, Eagles and others
Belted Kingfisher	<i>Megaceryle alcyon</i>			Open water wetlands or riparian	25	22-24	27-29	F
Black Swift	<i>Cypseloides niger</i>			Riparian areas and forest; streams	25	24-27	12-14	F
Black Tern	<i>Chlidonias niger</i>			Open water wetlands or riparian	25	17-22	12-14	F
Black-and-white Warbler	<i>Mniotilta varia</i>				50	10-12	12-14	F
Black-backed Woodpecker	<i>Picoides arcticus</i>				25	12-14	21	F
Black-billed Magpie	<i>Pica hudsonia</i>				Zero	16-21	12-14	None
Black-capped Chickadee	<i>Poecile atricapillus</i>				25	11-13	12-14	F
Blackpoll Warbler	<i>Setophaga striata</i>				25	11-13	12-14	F
Black-throated Green Warbler	<i>Setophaga virens</i>			Forest, mixed wood; riparian	50	11-13	12-14	F
Blue Jay	<i>Cyanocitta cristata</i>				25	16-18	17-21	P
Blue-headed Vireo	<i>Vireo solitarius</i>				25	12-14	12-14	F
Blue-winged Teal	<i>Anas discors</i>			Open water wetlands or riparian	25	22-27	1-4	F
Bobolink	<i>Dolichonyx oryzivorus</i>		T	Forage crops	400	12	11-12	F
Bohemian Waxwing	<i>Bombycilla garrulus</i>				25	13-15	17-21	F
Boreal Chickadee	<i>Poecile hudsonicus</i>				25	14-18	12-14	F
Boreal Owl	<i>Aegolius funereus</i>			Forest, coniferous	1000	28-30	28-35	P
Brewers Blackbird	<i>Euphagus cyanocephalus</i>				Zero	11-17	12-16	None
Brewer's Sparrow	<i>Spizella breweri</i>				25	12-14	12-16	F
Broad-winged Hawk	<i>Buteo platypterus</i>			Forest, deciduous	200	28-31	28-35	P
Brown Creeper	<i>Certhia americana</i>			Forest, coniferous	25	14-18	12-16	F
Brown-headed Cowbird	<i>Molothrus ater</i>				Zero	10-13	12-16	None
Buff-breasted Sandpiper	<i>Calidris subruficollis</i>	SC-1	SC (2012)	Stop-over sites, short grass	400	23-25	18-20	F
Bufflehead	<i>Bucephala albeola</i>				25	28-33	12-14	F
Burrowing Owl	<i>Athene cunicularia</i>	E-1	E	Pasture	500	28	21	F
Calliope Hummingbird	<i>Stellula calliope</i>				25	15-16	12-14	F
Canada Goose	<i>Branta canadensis</i>				25	25-30	1-2	F
Canada Warbler	<i>Cardellina canadensis</i>	1-T (Feb 2010)	T (Mar 2008)	Forest, mixed wood	450	11-13	12-14	F

Appendix F-6 Manitoba Hydro Breeding Bird Buffer Guidelines

Key	
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	100-200 m Buffer
	50 m Buffer
	25 m Buffer
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Canvasback	<i>Aythya valisineria</i>			Open water wetlands or riparian	25	23-29	1-4	F
Cape May Warbler	<i>Setophaga tigrina</i>			Forest, coniferous	50	11-13	12-14	F
Cassin's Finch	<i>Carpodacus cassinii</i>				25	12-14	12-14	F
Cedar Waxwing	<i>Bombycilla cedrorum</i>				25	12-16	12-14	F
Chestnut-collared longspur	<i>Calcarius ornatus</i>	1-T	T	Mixed grass prairie	650	11		F
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>				25	11-14	12-14	F
Chimney swift	<i>Chaetura pelagica</i>	1-T	T	anthropogenic	300			F
Chipping Sparrow	<i>Spizella passerina</i>				25	11-14	12-14	F
Clay-colored Sparrow	<i>Spizella pallida</i>				25	10-12	12-14	F
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>			Open water wetlands or riparian	25	14-16	12-14	F
Common Goldeneye	<i>Bucephala clangula</i>			Open water wetlands or riparian	25	28-33	1-2	F
Common Grackle	<i>Quiscalus quiscula</i>				Zero	12-14	12-14	None
Common Loon	<i>Gavia immer</i>				50	26-31	1-2	F
Common Merganser	<i>Mergus merganser</i>				25	28-35	1-2	F
Common Nighthawk	<i>Chordeiles minor</i>	1-T (Feb 2010)	T (Apr 2007)	Forest clearings, grassland, or pasture	300	19-20	17-18	F
Common Raven	<i>Corvus corax</i>				25	18-21	12-14	P
Common Redpoll	<i>Acanthis flammea</i>				25	10-11	9-14	F
Common Yellowthroat	<i>Geothlypis trichas</i>				25	11-14	12-14	F
Connecticut Warbler	<i>Oporornis agilis</i>			Forest, deciduous	50	11-14	12-14	F
Dark-eyed Junco	<i>Junco hyemalis</i>				25	11-14	12-14	F
Double-crested cormorant	<i>Phalacrocorax auritus</i>			Aquatic	750			P
Downey Woodpecker	<i>Picoides pubescens</i>				25	11-14	12-14	F
Dusky Flycatcher	<i>Empidonax oberholseri</i>			Forest, coniferous	25	12-16	12-14	F
Dusky Grouse	<i>Dendragapus obscurus</i>			Shrubland or young forest	25	25-26	1-4	None
Eastern Kingbird	<i>Tyrannus tyrannus</i>			Open water wetlands or riparian	25	16-18	12-14	F
Eastern screech owl	<i>Megascops asio</i>			Tree cover	500	26-30		P
Eastern whip-poor-will	<i>Antrostomus vociferus</i>	1-T	T	Open woodland	300	19-21		F
Eastern wood-pewee	<i>Contopus virens</i>		SC	Clearings, forest edges	300	12-13		F
European Starling	<i>Sturnus vulgaris</i>				Zero	N/A	N/A	None
Evening Grosbeak	<i>Coccothraustes vespertinus</i>			Forest, mixed wood	25	12-16	12-14	F
Ferruginous hawk	<i>Buteo regalis</i>	1-T	T	Open country	1000	32-33		F
Flammulated owl	<i>Psiloscops flammeolus</i>	1- SC	SC		50			P
Fox Sparrow	<i>Passerella iliaca</i>				25	12-14	12-14	F

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Golden Eagle	<i>Aquila chrysaetos</i>			Cliffs	1000	41-45	45-81	P
Golden-crowned Kinglet	<i>Regulus satrapa</i>				25	14-15	12-14	F
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>				25	11-14	12-14	F
Golden-winged warbler	<i>Vermivora chrysoptera</i>	1-T	T	Open woodland	450	10-11		F
Grasshopper sparrow	<i>Ammodramus savannarum</i>			Open grassland, prairie	650	11-13		F
Gray Jay	<i>Perisoreus canadensis</i>				25	16-18	22-24	P
Great Blue Heron	<i>Ardea herodias</i>			Forest, mixed wood	750	25-30	49-81	F
Great Gray Owl	<i>Strix nebulosa</i>			Forest, mixed wood	1000	28-30	28-35	P
Great Horned Owl	<i>Bubo virginianus</i>			Forest, mixed wood	100	28-35	28-35	P
Greater Scaup	<i>Aythya marila</i>			Open water wetlands or riparian	25	24-28	1-4	F
Greater Yellowlegs	<i>Tringa melanoleuca</i>			Open water wetlands or riparian	25	20-24	1-4	F
Grebes				Colonial nesting sites	400			F
Green-winged Teal	<i>Anas crecca</i>				25	20-24	1-4	F
Gulls/Terns				Colonial nesting sites	500			F
Hairy Woodpecker	<i>Picoides villosus</i>				25	11-15	28-30	F
Hammond's Flycatcher	<i>Empidonax hammondi</i>				25	12-16	12-14	F
Harlequin Duck	<i>Histrionicus histrionicus</i>			Open water wetlands or riparian	100	27-30	1-2	F
Hermit Thrush	<i>Catharus guttatus</i>				25	12-14	12-14	F
Hérons spp.				Nesting Colony	750			F
Hoary Redpoll	<i>Acanthis hornemanni</i>				25	9-12	12-14	F
Hooded Merganser	<i>Lophodytes cucullatus</i>				25	32-33	1-4	F
Horned Grebe	<i>Podiceps auritus</i>		SC (Apr 2009)	Open water wetlands or riparian	400	22-25	1-4	F
Horned Lark	<i>Eremophila alpestris</i>			Alpine, subalpine	25	11-12	12-14	F
House Finch	<i>Carpodacus mexicanus</i>				25	12-14	12-14	F
House Sparrow	<i>Passer domesticus</i>				Zero	N/A	N/A	None
House Wren	<i>Troglodytes aedon</i>				25	12-16	12-14	F
Killdeer	<i>Charadrius vociferus</i>			Forest clearings, grassland, or pasture	25	22-28	1-2	F
Le Conte's Sparrow	<i>Ammodramus leconteii</i>			Emergent-dominated wetlands	25	12-14	12-14	F
Least Flycatcher	<i>Empidonax minimus</i>				25	12-17	12-14	F
Least Bittern	<i>Ixobrychus exilis</i>	T-1	T		400			F
Lesser Scaup	<i>Aythya affinis</i>			Open water wetlands or riparian	25	21-28	1-2	F
Lesser Yellowlegs	<i>Tringa flavipes</i>				25	22-23	1-2	F
Lincoln's Sparrow	<i>Melospiza lincolni</i>				25	12-14	12-14	F
Loggerhead shrike prairie subspecies	<i>Lanius ludovicianus excubitorides</i>	1-T	T	Open woodland	500	16		F
Long-eared Owl	<i>Asio otus</i>				200	26-28	28-35	P
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>				25	11-12	12-14	F
Magnolia Warbler	<i>Setophaga magnolia</i>				25	11-14	12-14	F

Appendix F-6 Manitoba Hydro Breeding Bird Buffer Guidelines

Key	
	MBCDC specified
	100-200 m Buffer
	50 m Buffer
	25 m Buffer
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CDC Red or Blue List	= Provincial listing




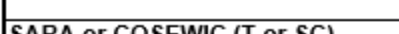
Species	Scientific Name	SARA (schedule & status)	COSEWIC (status & date assessed)	Habitat	Minimum Suggested Buffer (Meters)	Incubation Time (days)	Estimated Time to Leaving Nest or Fledging after hatching (Days)	Jurisdiction for Birds (F=Federal migratory, P=Provincial year-round resident), Nests = Provincial legislation for Herons, Eagles and others
Mallard	<i>Anas platyrhynchos</i>				25	26-30	1-2	F
Marsh Wren	<i>Cistothorus palustris</i>				25	12-16	12-14	F
Merlin	<i>Falco columbarius</i>				25	28-32	29	F
Mountain Bluebird	<i>Sialia currucoides</i>				25	12-14	12-14	F
Mountain Chickadee	<i>Poecile gambeli</i>				25	11-12	12-14	F
Mountain White-crowned Sparrow	<i>Zonotrichia l. oriantha</i>				25	11-14	12-14	F
Mourning Dove	<i>Zenaida macroura</i>				25	12-14	12-14	F
Mourning Warbler	<i>Geothlypis philadelphia</i>			Forest, mixed wood	25	12-14	12-14	F
Nashville Warbler	<i>Oreothlypis ruficapilla</i>				25	11-12	12-14	F
Nelson's Sparrow	<i>Ammodramus nelsoni</i>			Open water wetlands or riparian	50	11-12	12-14	F
Northern Flicker	<i>Colaptes auratus</i>				25	11-16	24-27	F
Northern Goshawk	<i>Accipiter gentilis</i>				200	36-41	12-14	P
Northern Harrier	<i>Circus cyaneus</i>			Forest clearings, grassland, or pasture	100	28-36	12-14	P
Northern Hawk Owl	<i>Surnia ulula</i>			Coniferous or mix forest near open areas	1000	25-30	25-30	P
Northern Pintail	<i>Anas acuta</i>			Open water wetlands or riparian	25	22-25	1-2	F
Northern Pygmy-owl	<i>Glaucidium gnoma</i>			Forest, coniferous; forest, mixedwood	200	29-30	28-35	P
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>			Open water wetlands or riparian	25	11-14	18-21	F
Northern Saw-whet Owl	<i>Aegolius acadicus</i>				100	26-28	28-35	P
Northern Shoveler	<i>Anas clypeata</i>				25	21-27	1-2	F
Northern Shrike	<i>Lanius excubitor</i>				25	15-16	20-21	F
Northern Waterthrush	<i>Parkesia noveboracensis</i>				25	11-14	12-14	F
Olive-sided Flycatcher	<i>Contopus cooperi</i>	1-T (Feb 2010)	T (Nov 2007)	Forest, coniferous	300	14-17	12-14	F
Osprey	<i>Pandion haliaetus</i>				200	35-40	36-42	P
Ovenbird	<i>Seiurus aurocapilla</i>				25	11-14	12-14	F
Pacific Wren	<i>Troglodytes pacificus</i>					12-16	12-14	F
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>			Forest, coniferous	25	14-16	12-14	F
Peregrine Falcon	<i>Falco peregrinus</i>	1-T (May 2003)	SC (Apr 2007)		1000	28-32	35-42	P
Philadelphia Vireo	<i>Vireo philadelphicus</i>			Shrubland or young forest	25	11-14	12-14	F
Pied-billed Grebe	<i>Podilymbus podiceps</i>			Open water wetlands or riparian	25	23-27	1-2	F
Pileated Woodpecker	<i>Dryocopus pileatus</i>			Forest, deciduous	25	15-18	24-28	F
Pine Grosbeak	<i>Pinicola enucleator</i>			Forest, deciduous	25	10-12	12-14	F

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	25 m Buffer
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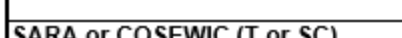
Species	Scientific Name	SARA (schedule & status)	COSEWIC (status & date assessed)	Habitat	Minimum Suggested Buffer (Meters)	Incubation Time (days)	Estimated Time to Leaving Nest or Fledging after hatching (Days)	Jurisdiction for Birds (F=Federal migratory, P=Provincial year-round resident), Nests = Provincial legislation for Herons, Eagles and others
Pine Siskin	<i>Spinus pinus</i>			Forest, coniferous	25	11-14	12-14	F
Piping plover	<i>Charadrius melodus melodus</i>	E-1	E		600	25-27		F
Purple Finch	<i>Carpodacus purpureus</i>			Forest, coniferous	25	11-14	12-14	F
Red Crossbill	<i>Loxia curvirostra</i>			Forest, coniferous	25	12-18	12-14	F
Red-breasted Merganser	<i>Mergus serrator</i>			Open water wetlands or riparian	25	29-35	1-2	F
Red-breasted Nuthatch	<i>Sitta canadensis</i>			Forest, coniferous	25	11-14	12-14	F
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>			Forest, deciduous	25	12-14	24-27	F
Red-eyed Vireo	<i>Vireo olivaceus</i>			Forest, deciduous	25	11-14	12-14	F
Redhead	<i>Aythya americana</i>			Open water wetlands or riparian	25	23-29	1-2	F
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	1-T	T	Open woodland	200	12-14		F
Red Knot	<i>Calidris canutus rufa</i>	E-1	E	Stop-over sites	400	20-22	1-Feb	F
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>			Forest, deciduous	25	12-14	24-27	F
Red-necked Grebe	<i>Podiceps grisegena</i>			Open water wetlands or riparian	25	20-23	1-2	F
Red-necked Phalarope	<i>Phalaropus lobatus</i>		SC	Open water wetlands or riparian	25	17-21	1-2	F
Red-tailed Hawk	<i>Buteo jamaicensis</i>				100	30-35	42-46	P
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			Open water wetlands or riparian	Zero	11-14	12-14	None
Ring-necked Duck	<i>Aythya collaris</i>			Open water wetlands or riparian	25	23-29	1-2	F
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>			Forest, deciduous	25	12-14	12-14	F
Ross's Gull	<i>Rhodostethia rosea</i>	T-1	T		1500	19-22	19-22	F
Rough-legged Hawk	<i>Buteo lagopus</i>			Alpine, subalpine, grassland, pasture	200	30-35	42-46	P
Ruby-crowned Kinglet	<i>Regulus calendula</i>				25	12-14	12-14	F
Ruby-throated Hummingbird	<i>Archilochus colubris</i>				25	11-16	12-14	F
Ruffed Grouse	<i>Bonasa umbellus</i>			Forest, mixed wood	25	21-28	1-4	P
Rufous Hummingbird	<i>Selasphorus rufus</i>			Forest, coniferous; Riparian areas and forest	25	12-14	12-14	F
Rusty Blackbird	<i>Euphagus carolinus</i>	1-SC (Mar 2009)	SC (Apr 2006)	Open water wetlands or riparian	300	12-18	12-14	F
Sandhill Crane	<i>Grus canadensis</i>				100	28-32	1-4	F
Savannah Sparrow	<i>Passerculus sandwichensis</i>				25	11-14	12-14	F
Say's Phoebe	<i>Sayornis saya</i>				25	12-14	12-14	F
Sharp-shinned Hawk					100	34-35	21-28	P
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>			Forest clearings, grassland, or pasture (25m for a nest and 1000m for a lek)	25	21-28	1-4	P

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	50 m Buffer
	25 m Buffer
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Species	Scientific Name	SARA (schedule & status)	COSEWIC (status & date assessed)	Habitat	Minimum Suggested Buffer (Meters)	Incubation Time (days)	Estimated Time to Leaving Nest or Fledging after hatching (Days)	Jurisdiction for Birds (F=Federal migratory, P=Provincial year-round resident), Nests = Provincial legislation for Herons, Eagles and others
Short-eared Owl	<i>Asio flammeus</i>	1-SC (Jul 2012)	SC (Mar 2008)	Alpine, subalpine, grassland, pasture	500	25-29	28-35	F
Snow Bunting	<i>Plectrophenax nivalis</i>				25	10-16	12-14	F
Snowy Owl	<i>Bubo scandiacus</i>			Forest clearings, grassland, or pasture	N/A	N/A	N/A	P
Solitary Sandpiper	<i>Tringa solitaria</i>				25	23-24	17-20	F
Song Sparrow	<i>Melospiza melodia</i>				25	12-14	12-14	F
Sora	<i>Porzana carolina</i>				25	18-20	1-4	F
Spotted Sandpiper	<i>Actitis macularius</i>				25	20-24	1-4	F
Sprague's Pipit	<i>Anthus spragueii</i>	1-T	T	Open grassland	650	12-14	12-14	F
Spruce Grouse	<i>Falcapennis canadensis</i>				25	21-24	1-4	P
Steller's Jay	<i>Cyanocitta stelleri</i>				25	16-18	16	None
Surf Scoter	<i>Melanitta perspicillata</i>			Open water wetlands or riparian	25	25-30	1-4	F
Swainson's Hawk	<i>Buteo swainsoni</i>				200	28-32	21-28	P
Swainson's Thrush	<i>Catharus ustulatus</i>			Forest, mixed wood	25	12-14	12-14	F
Swamp Sparrow	<i>Melospiza georgiana</i>				25	12-15	12-14	F
Tennessee Warbler	<i>Oreothlypis peregrina</i>				25	11-14	12-14	F
Townsend's Solitaire	<i>Myadestes townsendi</i>			Alpine, subalpine	25	12-14	12-14	F
Townsend's Warbler	<i>Setophaga townsendi</i>				25	12-14	12-14	F
Tree Swallow	<i>Tachycineta bicolor</i>			Open water wetlands or riparian	25	12-16	12-14	F
Trumpeter Swan	<i>Cygnus buccinator</i>				1000	32-37	1-4	F
Tundra Swan	<i>Cygnus columbianus</i>			Open water wetlands or riparian	100	31-40	1-4	F
Turkey Vulture	<i>Cathartes aura</i>				100	38-41	60-84	P
Upland Sandpiper	<i>Bartramia longicauda</i>			Forest clearings, grassland, or pasture	50	21-27	30-31	F
Varied Thrush	<i>Ixoreus naevius</i>				25	12-14	12-14	F
Vaux's Swift	<i>Chaetura vauxi</i>			Forest, coniferous; Forest, deciduous	25	18-20	12-14	F
Vesper Sparrow	<i>Pooecetes gramineus</i>			Forest clearings, grassland, or pasture	25	11-14	12-14	F
Violet-green Swallow	<i>Tachycineta thalassina</i>			Meadows; open woodlands; wooded canyons	25	12-14	12-14	F
Warbling Vireo	<i>Vireo gilvus</i>				25	12-14	12-14	F
Western Bluebird	<i>Sialia mexicana</i>				25	12-14	12-14	F
Western Grebe	<i>Aechmophorus occidentalis</i>			Open water wetlands or riparian	50	23-24	1-4	F
Western Kingbird	<i>Tyrannus verticalis</i>				25	18-20	12-14	F
Western Meadowlark	<i>Sturnella neglecta</i>				25	12-16	12-14	F

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Western Palm Warbler	<i>Setophaga palmarum</i>				25	12-14	12-14	F
Western Tanager	<i>Piranga ludoviciana</i>				25	12-14	12-14	F
Western Wood-Pewee	<i>Contopus sordidulus</i>			Forest, coniferous;	25	12-14	12-14	F
White-breasted Nuthatch	<i>Sitta carolinensis</i>				25	12-14	12-14	F
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>				25	11-14	12-14	F
White-throated Sparrow	<i>Zonotrichia albicollis</i>				25	11-14	12-14	F
White-winged Crossbill	<i>Loxia leucoptera</i>				25	12-14	12-14	F
Whooping Crane	<i>Grus americana</i>	E-1	E	Staging Area	1000			F
Willow Ptarmigan	<i>Lagopus lagopus</i>				25	21-22	1-4	P
Wilson's Phalarope	<i>Phalaropus tricolor</i>			Open water wetlands or riparian	25	18-21	1-4	F
Wilson's Snipe	<i>Gallinago delicata</i>			Emergent-dominated wetlands; riparian areas and forest	25	18-21	1-4	F
Wilson's Warbler	<i>Cardellina pusilla</i>			Shrubland or young forest	25	11-14	12-14	F
Winter Wren	<i>Troglodytes hiemalis</i>				25	12-16	12-14	F
Yellow Rail	<i>Coturnicops noveboracensis</i>	1-SC (Jun 2003)	SC (Nov 2009)	Emergent-dominated wetlands	350	16-18	1-4	F
Yellow Warbler	<i>Setophaga petechia</i>			Forest, deciduous; young/disturbed; riparian; willow	25	11-14	12-14	F
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>				25	12-16	12-14	F
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>				25	11-14	25-29	F
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>			Open water wetlands or riparian	Zero	11-14	12-14	None

Appendix G

Reptile and Amphibian protection document

Habitat identification

Amphibians should be assumed to be present in all wetland or shallow water areas supporting emergent vegetation (cattails, bulrushes, lily pads) during the amphibian emergence and breeding period (April 1st to August 15th).

When sampling the habitat, a qualified biologist should investigate the shallow water zone (to rubber - boot depth), the waterline and the shore zone (within 3 meters of the waterline) when possible. In this way, other age classes of amphibians may be observed, such as egg masses and larvae (depending on the time of year). Both flowing and standing water can be surveyed in this fashion.

Visual encounter survey

Visual Encounter Surveys are an effective method of locating amphibians and egg masses during the breeding season (See excerpt from Kendell, 2002 below for survey procedure). Egg masses are easily detected when walking the shorelines and other shallow sections of a pond. Also, adult amphibians are fairly active in the breeding season and are often found near egg masses, so that many can be located during visual searches. As a general rule, surveys conducted at various times of day are the single most effective method for removing amphibians of all life stages during the active seasons, when removal is required.

Survey protocol should follow the steps outlined in Kendell (2002), which outlines:

- The habitat should be walked at a constant speed that is conducive to observing amphibians under the given habitat characteristics at the site. For example, open habitats with sparse and low vegetation can be walked at a greater speed because the observer is less likely to overlook amphibians obscured by vegetation. In contrast, a slower walking speed is required if the habitat possess - thicker and taller vegetation. In either case, the observer should walk in a systematic fashion to cover all favorable habitats both thoroughly and equally.
- A good self-test, to ensure that the proper speed and diligence is being used while surveying a habitat, is as follows: The individual conducting the survey should be able to spot less obvious amphibian life underfoot and within peripheral vision. For example, the individual may observe or hear a mouse scurrying through the grass, a

young garter snake basking on a rock, other amphibian species and large insects on the ground, vegetation, water or below the surface of the water.

- Report survey results to Manitoba Hydro Environment Officer.

Kendell, K. 2002. Survey protocol for the northern leopard frog. Alberta Sustainable Resources Development, Fish and Wildlife Division, Alberta Species at Risk Report No. 43. Edmonton, Alberta. 30 pp.

Mitigation measures

- Restrict access to shallow water areas to protect breeding ponds and their vegetation from trampling and other disturbances. In areas directly impacted by construction, and in which amphibians occur, all life stages should be captured and removed to areas outside of the construction area.
- Erect exclusion fencing (e.g., sedimentation fence) prior to activities occurring in areas of breeding habitat (e.g., wetland features, low-lying ephemeral ponds) to minimize the risk of amphibians entering the work area: Exclusion fencing height should be a minimum of 50 cm and the bottom of the fabric must be buried 10-20 cm down with an additional fabric lip extending outwards 90 degrees another 15 cm, the fabric lip must be backfilled and compacted to ensure it does not become exposed. Bury support stakes for exclusion fencing a minimum of 30 cm into the ground on the activity side of the fence; leave an overhang or lip on the exterior to prevent amphibians from entering the fenced off area.

Appendix H

Species of Concern Contingency Measures

Appendix H: Species of Concern Contingency Measures

The following procedures provide contingency measures for the discovery of species of concern prior to and during a decommissioning project. Species of concern can include rare vascular plants, rare non-vascular plants, and rare wildlife species.

Plant Species of Concern Discovery Prior to Decommissioning

In the event that rare plants are discovered within the project area, the plant or plant community will be assessed by a vegetation specialist and appropriate mitigation measures will be determined prior to decommissioning. Mitigation measures will be determined following an assessment, which will include the following:

- the position of the plant or plant community within the project area;
- the relative rarity of the plant or plant community (regionally, nationally, etc.);
- the local abundance of the plant or plant community.

Mitigation options may include, however, are not limited to the following:

- narrowing down the proposed area of disturbance and protecting the site using fencing or clearly marking the site using flagging and signage
- informing project staff of access restrictions within in the vicinity of flagged or fenced sites;
- temporarily covering the site with geotextile pads, flex net, mats or equivalent;
- adjusting centerline access trail to avoid or limit potential effects on the plant or plant community;
- salvaging and transplanting portions of sod and surrounding vegetation
Transplanted materials may be moved to a suitable location off right-of-way;
- other site-specific procedures to avoid disturbance to rare plants or plant communities, as recommended by the vegetation specialist.

The Manitoba Hydro T&DEE Converter Station Business Partner will be responsible for making the final decision on mitigation measures to be applied, in consultation with a qualified biologist, Project Engineer and when uncertainty exists, the appropriate Provincial or Federal regulatory authorities. All mitigation measures for sites within the Project development area will be described in the Decommissioning Environmental Protection Plan.

Wildlife Species of Concern Discovery Prior to Decommissioning

In the event that wildlife species of concern or their site-specific habitat are discovered within the project area, the discovery will be assessed and appropriate mitigation measures will be determined. The wildlife or habitat will be assessed based on the following criteria:

- the location of the wildlife or habitat feature with respect to the project development area;
- the presence of topographic features or vegetation to effectively screen the wildlife or habitat from decommissioning activities;
- the existing level of disturbance and ongoing sensory disturbance at the site;
- the timing of decommissioning versus the critical timing constraints for the species; and
- the potential for an alteration of decommissioning activities to reduce or avoid sensory
- and/or physical disturbance; and.
- the wildlife species, its conservation status and specific habitat needs relative to
- the area of development.

The mitigation measures available include, but are not limited to, the following:

- abide by reduced risk timing windows within the recommended setback/buffer distances;
- narrow down the proposed area of disturbance and protect the site using fencing or clearly mark the site using flagging;
- alter or delay construction activities to avoid sensory disturbance (e.g., no burning);
- inform project staff of access restrictions in the vicinity of flagged or fenced sites;
- install nest boxes or platforms, or otherwise replace or enhance habitat during reclamation or restoration; and

- with the appropriate approval, relocate species or features (i.e., unoccupied stick nests), if practical.

The Manitoba Hydro T&DEE Converter Station Business Partner or delegate will be responsible for making the final decision on mitigation measures to be applied, in consultation with a qualified biologist, Project Engineer and when uncertainty exists, the appropriate Provincial or Federal regulatory authorities. All sites and associated mitigation measures within the Project development area will be added to the Decommissioning Environmental Protection Plan.

Species of concern discovery during project decommissioning

In the event that rare plants or wildlife species are identified or suspected within the project area during decommissioning, follow the measures outlined below:

- Suspend work immediately in the vicinity of any newly discovered species of concern. Work at that location may not resume until the measures below are conducted.
- Notify Manitoba Hydro Contract Administrator
- Flag or fence the area until the plant, wildlife species or community can be confirmed. Manitoba Hydro T&DEE Converter Station Business Partner may enlist a qualified biologist to assist with confirmation

Implement protection measures based on specific site conditions and criteria found in reference ii - DEnvPP Appendix D (buffers and setbacks) and or Appendix E (avian protection)

The Manitoba Hydro T&DEE Converter Station Business Partner will be responsible for making the final decision on mitigation measures to be applied, in consultation with a qualified biologist, Project Engineer and when uncertainty exists, the appropriate Provincial or Federal regulatory authorities. Mitigation measures generally fall into categories previously identified above.

Appendix I

Guidance for the identification of
contaminated soils or groundwater and
disposal

Appendix I: Guidance for the identification of contaminated soils or groundwater and disposal

Objective

This guidance document has been developed to provide general information and direction on recognized methods considered acceptable by the regulatory agencies when contamination or suspected environmental impacts have been encountered. The information within this document is intended to assist frontline workers when conducting preliminary environmental site assessments or investigations of sites or lands where the quality of groundwater, surface water, sediments and/or soil have potentially or is suspected of being impacted or affected by hazardous materials as result of past or present usage of the site or land.

The guidance document has been developed as an informational reference tool only and is intended for frontline supervisors, inspection personnel, contractors and/or subcontractor working under contract or on Manitoba Hydro owned property that do not have formal training in environmental site assessments or site investigations.

Identifying impacted surface water / groundwater or soils

Surface water, groundwater and soils have known observable characteristics when they come into contact with some hazardous materials. For example, water (surface or ground) that has been impacted by petroleum hydrocarbons - PHC's (such as petroleum, fuels - such as diesel or gasoline, and/or lubricants) may have display an obvious hydrocarbon odour and/or multi coloured 'sheen' that is typically visible to the naked eye and appear on the surface of the liquid (like a film or residue) and are typical indications that water has been impacted by PHC's.

Similarly soils that have been impacted with PHC's typically turn "grey-black" in color or become "stained" depending on weathering and they also typically have a strong PHC odour and appears unnatural compared to other native soils is exposed for comparison.

Water or soils exhibiting these types of observable characteristics should be documented (daily reports, photos, GPS coordinates, etc.) and the Manitoba Hydro Contract Administrator is to be notified as soon as practical. All work shall be halted in areas where suspected impacted/contamination exists until the Manitoba Hydro Contract Administrator has been notified and no materials (soils, water, debris) suspected to be impacted by a hazardous material shall be permitted from the suspected area until the Manitoba Hydro Contract Administrator has been notified and has granted approval to proceed.

Manitoba Hydro construction activities have the potential to impact work locations through equipment malfunction and or spills. Hazardous materials such as petroleum

hydrocarbons (PHC), polycyclic aromatic hydrocarbons (PAHs), and glycols can result from incidents on a site. Any excavated soils from Manitoba Hydro owned or leased properties must either be sampled prior to disposal at a licensed facility or directly transported to a licensed facility. MH Property and Corporate Environment department or Transmission Line and Civil Construction Soils Remediation section can be contacted to assist in determining a suitable or Licenced disposal facility.



Photo 1: PHC (oil) staining on wood mulch/soil



Photo 2: PHC (oil) staining clay soil

Worker health and safety

Workers who suspect they have encountered materials impacted by a hazardous material will need to assess what protective measures are required to further assess the site or manage the suspected impacts. This may include wearing appropriate personal protective equipment (PPE) if they are required to handle or manage the impacted materials/contamination (i.e. soils and surface groundwater).

Appropriate PPE will be dependent on the hazardous material or contaminant and contaminant concentration (if known) and may include but not be limited to: nitrile or rubber gloves, half or full mask respirator, safety boots, protective clothing, and protective eyewear.

A qualified environmental professional or consultant will be engaged to confirm, and subsequently characterize the hazardous materials and assess the impact to the environment as required.

Communications / notifications

If impacted/contaminated materials are encountered during decommissioning, all personnel working within the suspected area are to immediately stop work, leave the suspect impacted/contaminated area, secure the site and notify the on-site Manitoba Hydro Contract Administrator who will notify the Manitoba Hydro T&DEE Converter Station Business Partner or delegate.

Additional notifications of the potential hazards would then be made to all applicable personnel as required.

Impacted soil and water handling and disposal

If impacts or contamination as a result of hazardous materials is encountered or is suspected during construction the following measures should be taken to further protect worker health and safety:

If possible, limit personnel working within or around the impacted area until a further assessment is conducted.

Secure the site or area suspected to be impacted or contaminated and keep unauthorized personnel out of the area (barriers may be required) until further assessment is conducted.

Notify Contract Administrator and the T&DEE Converter Station Business Partner to assist/initiate further site assessment process

If impacted materials have been mobilized as part of the work or prior to identifying the impacts, then the material should be segregated and/or contained if at all possible, and all efforts to prevent further impacts or contamination shall be undertaken.

(Example - excavated soils suspected to be impacted shall be placed on an impermeable surface and covered to prevent precipitation run-off until the soils can be assessed for contaminants.)

Soil and/or groundwater samples if required will be sent to a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory for waste characterization. (note MH Selkirk Laboratory has this capacity)

Soils will be characterized for waste disposal and appropriate truck placarding (as per the corporate policy and as per the MH *Hazardous Materials Management Handbook*)

Contaminated soils and/or groundwater will be transported in accordance with the Manitoba *Dangerous Goods Handling and Transportation Act* and associated Regulations. As per MH - *Hazardous Materials Management Handbook*

<http://hracs.hydro.mb.ca/wshcs/ws/we/Pages/HazardousMaterials.aspx>

Decontamination of equipment, as required

Please note that prior to the disposal of soils confirmed to be impacted above the applicable regulatory criteria, current provincial legislation requires a 'remedial action plan' to be submitted to the provincial regulator for their approval. In addition at the conclusion of the remedial activities, a closure report is also required to be submitted. The Remedial Action Plan(s) and Closure Report(s) will be in accordance with the Manitoba *Contaminated Sites Remediation Act*, and its associated regulations and guidance documents.

Use guidelines and upon approval of the waste disposal ground. However, if soil samples are above these guidelines, soils must be disposed of at a licensed soil treatment facility. Options include the following facilities:

Contaminated Soil Disposal		
MidCanada Soil Treatment Facility	1373 Bernat Road, Grand Pointe, MB	(204) 987-9600
Miller Environmental Corporation	Hwy 14 & 75, Saint Jean Baptiste, MB	(204) 925-9600

City of Brandon Landfill	3300 Victoria Avenue East, Brandon, MB	(204) 729-2281
Virten Municipal & Industrial Waste Facility	236 Wellington Street South, Virten, MB	(204) 204-512-0816 or (204) 748-6033
Contaminated Water Disposal		
A1 Environmental Services	1447 Dugald Road, Winnipeg, MB	(204) 515-2473

All contaminated soils and water will be disposed of in accordance with the *Manitoba Dangerous Goods Handling and Transportation Act*, and the *Manitoba Contaminated Sites Remediation Act*, and associated regulations and guidelines.

The above mentioned legislation and associated regulations mandate that a qualified environmental professional is to conduct formal environmental site assessments or investigation and is required to follow an established guideline. As such if a site has been determined to be 'suspect' for contamination as a result of observations made using this guidance document then a qualified environmental professional is required when conducting a formal site assessment that includes a remedial action plan (RAP).

Appendix J

Environmental pre-work orientation record
(Attach a signed copy)



Generation Projects

Contractor Environmental Pre-Job Orientation

The following Manitoba Hydro Generation Projects Contractor Environmental Pre-Job Orientation will be reviewed with the Contractor at the contract start-up meeting by the Manitoba Hydro Project Manager and/or Contract Administrator as well as the T&DEE Converter Station Business Partner and/or delegate.

Upon completion of the orientation all individual present at the orientation, both Manitoba Hydro and the Contractor representatives, will sign this document.

Division: Project Management
Department: Generation Projects
Project Name: Bipole III Transmission Project Keewatinohk Converter Station Construction Infrastructure
Contract Number:
Work Location:
Environment Act Licence Number: 3055

Meeting Date:
Contractor:

Manitoba Hydro Contact Information
Manitoba Hydro Project Manager:
Manitoba Hydro Contract Administrator:
Manitoba Hydro T&DEE Converter Station Business Partner or delegate:

Contractor Contact Information:
Contractor Project Manager: _____ Email: _____
Address: _____

Phone Numbers: Office (_____) _____ Cell (_____) _____

Contractor Construction Manager: _____ **Email:** _____

Address:

Phone Numbers: Office (_____) _____ Cell (_____) _____

Contractor Environmental Supervisor: _____ **Email:** _____

Address:

Phone Numbers: Office (_____) _____ Cell (_____) _____

Contractor Environmental Representative: _____ **Email:** _____

Address:

Phone Numbers: Office (_____) _____ Cell (_____) _____

List Sub-Contractors:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Key Environmental Requirements Review:

Check off all items that apply to the contracted work being done as they are discussed.

Topic	Key Environmental Requirements	Discussed
•		
•		
•		
•		
•		
•		
•		
•		
•		
•		
•		

REMARKS:

Any specific environmental concerns that are not mentioned here will be discussed at weekly progress meetings and/or at the pre-job (TAILBOARD) meetings prior to the work being performed.

The above items have been discussed and understood. Any questions relating to these items or any other project environmental requirements may be further discussed during the course of the contract.

MANITOBA HYDRO REPRESENTATIVE (SIGN)

YYYY MM DD

CONTRACTOR'S REPRESENTATIVE (SIGN)

YYYY MM DD



Contractor Environmental Pre-Job Orientation Procedures

NOTE:

The instructions provided on this sheet are intended only for internal use by Manitoba Hydro employees.

1. The Contractor Environmental Pre- Job Orientation is to be held with Contractor Supervisory and Environmental Representatives prior to the start of any onsite activities associated with the contract.
2. All individuals present at the Contractor Environmental Pre- Job Orientation must sign the attendance sheet.
3. The Contractor Environmental Pre- Job Orientation should be read out loud in its entirety. Discussions on each topic and the opportunity to ask questions should be provided as required.
4. All required information regarding the Contractor Environmental Pre- Job Orientation must be completed (additional notes as required).
5. Obtain all names/signatures and other information required in the Contractor Environmental Pre- Job Orientation

6. Distribution of the Environmental Pre-Job Orientation:

A copy of the signed original is to be kept in the contract environment folder as well as onsite with all other relevant documents, permits, etc.

A copy of the signed original should be sent to:

- Contractor Supervisory Representative(s)
- Contractor Environmental Representative(s)
- Manitoba Hydro Project Manager and/or Contract Administrator
- Manitoba Hydro Environmental Representative(s) (Manitoba Hydro T&DEE Converter Station Business Partner or delegate)

Appendix K
Contractor Developed Plans

Insert Here Once Received