

➤ Muskeko Joint Venture

Envelope B – B.6 Health, Safety & Environment

RFP 040693 Rev 1 – Section 1





The Muskeko Joint Venture (Muskeko) has a strongly interconnected relationship with Voltage Power Ltd. (Voltage). Muskeko and Voltage have entered into an irrevocable agreement for the Manitoba - Minnesota Transmission Line Project. For this Proposal and Project, Voltage will be the Manager, responsible for the delivery of all scopes of work. For the purpose of this submission, all references to Voltage Power Ltd. (Voltage), Sigfusson Northern Ltd. (SNL), and Swampy Cree Holdings Ltd. (or a combination or abbreviation of each) shall be considered a representation of the Muskeko Joint Venture. Together, the Muskeko team has a proven history of delivering successful projects, as well as building relationships with Indigenous governments, communities, organizations, businesses, and individuals.



ENVIRONMENTAL MANAGEMENT PLAN

RFP 040693 Rev 1 – Section 1

B.6 – Health, Safety & Environment



Voltage Power Ltd.
www.voltagepower.ca

Table of Contents

1. Introduction	5
1.1. Project Description	5
1.2. Environmental Protection Policy Statement.....	5
1.3. Environmental Stewardship	5
2. Environmental Management Plan	6
2.1. Purpose	6
2.2. Objective	7
2.3. Project Specific Activities.....	7
2.4. Approvals and Commitments	7
3. Project Team Environmental Responsibilities	8
3.1. Project Manager.....	8
3.2. Construction Manager.....	8
3.3. Construction Supervisors	8
3.4. Project Environmental Manager	8
3.5. Environmental Coordinator.....	9
3.6. General Employee Responsibilities.....	9
4. Project Training	10
4.1. Project Orientation	10
4.2. Tailboard Meetings	10
5. Monitoring and Inspections	11
5.1. Monitoring.....	11
5.2. Inspections	11
5.3. Inspection Schedule	12
5.4. Documentation and Reporting	12
6. Project Contacts	13
7. Dangerous Goods Handling and Storage.....	14
7.1. Purchasing	14
7.2. Dangerous Goods Training	14
7.3. Storage and Handling	14
7.4. Transportation	15
7.5. Petroleum Storage and Fueling	15
7.5.1. Storage	15
7.5.2. Fuelling	15

7.6. Spill Response 16

8. Construction Site Management 17

8.1. Site Boundaries 17

8.2. Access 17

8.3. Spring Thaw 18

8.4. Matting 18

8.5. Historical and Archaeological Sites 18

8.6. Agricultural Lands 19

8.7. Crossings 19

8.8. Winter Stream Crossings..... 19

8.9. Material and Staging Yards..... 20

8.10. Equipment Maintenance and Storage 20

8.11. Equipment Inspections 21

8.12. Maintenance Areas..... 21

8.13. Road Maintenance 21

8.14. Wildfire Prevention..... 22

8.15. Waste and Recycling 22

9. Fish and Wildlife Habitat Protection..... 23

9.1. Wildlife Habitat Protection 23

9.1.1. Birds 23

9.1.2. Reptiles and Amphibians..... 24

9.2. Fish Habitat Protection..... 24

10. Environmental Protection 26

10.1. Timing Windows 26

10.2. Riparian Management..... 26

10.3. Erosion and Sediment Control 27

10.4. Groundwater Management 27

10.5. Biosecurity..... 27

10.6. Soil Management 27

10.7. Environmental Sensitivities 28

10.8. Noise Management 28

10.8.1. Noise Mitigation 28

10.9. Dust Control..... 29

10.10. Greenhouse Gas Management 29

11. Task Specific Protection.....	30
11.1. Brushing and Clearing	30
11.1.1. Effects.....	30
11.1.2. Mitigation	30
11.2. Burning	31
11.3. Grubbing	31
11.4. Stripping and Grading	31
11.5. Blasting.....	32
11.6. Reclamation.....	32
APPENDIX A: INSPECTION FORMS	33
APPENDIX B: SPILL RESPONSE FORMS.....	37
APPENDIX C: SPILL RESPONSE PLAN	41
APPENDIX D: WASTE AND RECYCLING MANAGEMENT PLAN.....	42
APPENDIX E: EROSION AND SEDIMENT CONTROL PLAN	43
APPENDIX F: BIOSECURITY MANAGEMENT PLAN	44
APPENDIX G: VOLTAGE WASTE DOCKET	45
APPENDIX H: MID CANADA CONTAMINATED SOIL ACCEPTANCE FORM	46

Document Control

Revision #	Date of Issue	Revised By	Brief Description
R0	December 14, 2018	T. Martin	Document Created
R01	August 17, 2019	T. Martin	Section 6.0- Added Evan Johannson to project contact list
R01	August 17, 2019	T. Martin	Section 8.3- Changed document named to Saturated/Thawed Soils Operating Guidelines
R01	August 17, 2019	T. Martin	Manitoba Conservation changed to Sustainable Development
R02	September 12, 2019	T. Martin	Reportable quantities changed in section 5.6 of Spill Response Plan
R03	October 04, 2019	T. Martin	Added Flammable Liquids into section 5.6 reportable quantities

1. Introduction

Muskeko Joint Venture is committed to protecting and preserving all environmental aspects that may be affected from construction on our projects. The Environmental Management Plan (EMP) is intended to conform with the requirements identified within the Manitoba Hydro's Environmental Protection Plan (EPP) and Construction Environmental Protection Plans (Construction Environmental Protection Plan's) and Manitoba Hydro commitments on the Manitoba-Minnesota Transmission Project (MMTP).

The EMP outlines our commitment to managing and carrying out our projects in a responsible, safe, and sustainable manner whereby protection of the environment and safety of people take priority above all other business matters.

1.1. Project Description

The Project consists of a 213 km single-circuit, 500 kV AC transmission line starting at the existing Dorsey Converter Station northwest of Winnipeg, connecting at the Manitoba-Minnesota border to a new transmission line proposed by Minnesota Power.

1.2. Environmental Protection Policy Statement

We consider environmental protection and conservation to be a fundamental part of our business philosophy. As leaders in the Powerline industry, we are committed to continuous improvement of our operational performance to prevent pollution and reduce waste. We believe in conducting our work in a thoughtful, accountable manner which will have the minimum amount of impact on all aspects of the environment.

1.3. Environmental Stewardship

We believe we have a responsibility to conduct our work in an environmentally responsible way that will pose the least amount of negative environmental impacts. This will be achieved through the hiring of competent staff, sharing of up-to-date and accurate information, providing orientation and on-going training, and on-site guidance through a proactive monitoring and inspection program.

Voltage will:

- Evaluate, plan, and conduct our work activities in a manner that will reduce adverse environmental impacts;
- Educate and entrust all employees and contractors to uphold a stringent environmental standard during their work activities;
- Take the necessary steps to identify, evaluate, and apply the necessary controls to minimize potential risks to the environment;
- Continuously review and implement changes to improve our environmental management practices and standards;
- Conduct regular audits of environmental performance to ensure conformity with the company environmental policy; and
- Foster an honest communication between Voltage and Manitoba Hydro's project teams to enhance an understanding of environmental concerns.

2. Environmental Management Plan

The EMP has been designed to outline Voltage commitments in addressing identifiable environmental impacts on the MMTP. The EMP contains specific procedures that all Voltage employees, contractors, and subcontractors must adopt and conform to throughout the Project.

As situations change within the project, Voltage will collaborate with Manitoba Hydro's project team to reassess and implement the necessary modifications to ensure environmental protection is ascertained and environmental impacts are mitigated.

A summary of Environmental responsibilities for the MMTP Transmission Project are:

- Ensuring all staff are trained and competent in the environmental requirements while performing project work;
- Provide knowledgeable environmental representatives to monitor and inspect work and report any discoveries of non-compliance, accidents, or incidents to the Manitoba Hydro;
- Strictly comply with all environmental Legislation and have suitable corrective and/or preventive measures in place to mitigate any environmental damage;
- Maintain detailed records of environmental approvals, inventories of accidents, incidents, alterations, wastes, equipment maintenance, public complaints and communicate this information to Manitoba Hydro;
- Document and provide Manitoba Hydro with all contract required Plans, Weekly Environmental Reports, Spill Reports, Bird Survey Forms, Landowner Permission Forms, Biosecurity Forms and Contractor acquired Permits; and
- Report any discoveries of Cultural or Heritage Resources, Site Contamination, Environmentally Sensitive Sites and Species at Risk.

We recognize that the EMP plays an important role in the implementation of effective environmental protection by providing employees guidance to minimize environmental impacts on the Project. Voltage will initiate positive and proactive steps to protect the safety of its workers, natural resources, and the environment.

2.1. Purpose

The purpose of the EMP is to demonstrate a commitment to undertake works in an environmentally responsible manner and in accordance with the applicable Environmental Protection specifications contained in the Manitoba Hydro Construction Environmental Protection Plan, regulatory requirements, legislation, and Manitoba Hydro Best Management Practices.

The EMP is a project specific plan that outlines mitigation measures for employees to incorporate into daily activities to ensure that when encountering these environmental constraints, the appropriate environmental protection is applied. The EMP provides a summary of environmental constraints for project activities.

2.2. Objective

The objective of the EMP is to develop proper controls to decrease the potential for negative effects to the environment during all stages of the Project. The Voltage Power EMP was developed to ensure all project activities are completed in compliance with relevant environmental legislation, project licences, Manitoba Hydro's EPP, Construction Environmental Protection Plan, subsequent management plans, environmentally sensitive site (ESS) maps, and Manitoba Hydro environmental principals and commitments.

The goal of the EMP is to communicate the potential environmental and social effects associated with the Project as well as identify the mitigation and protection measures that will be implemented. Voltage recognizes that the EMP plays a fundamental role in environmental protection by providing guidance to reduce the environmental effects associated with work activities on MMTP.

This document is intended to be a resource for all Voltage personnel, as all Voltage personnel share in the responsibility for on-site environmental protection.

2.3. Project Specific Activities

The EMP provides detailed mitigation for the following project activities. These activities are represented within the scope of MMTP:

- Site Management (Transportation, Access, Materials Management, Project Limits);
- Environmental Management (Biosecurity Management, Invasive Species, Greenhouse Gas, Spill Prevention);
- Waste Management (Soil, Timber Salvage, Concrete, Material Storage and Handling);
- Fish and Wildlife Management (Timing Windows, Wetlands, Sediment and Erosion Control, Species at Risk, Clearing and Grubbing); and
- Health and Safety (Dust and Air Quality, Noise, Hazardous Materials Management, Emergency Response).

2.4. Approvals and Commitments

Voltage will adhere to the laws, regulations and guidelines of the federal, provincial and municipal governments, as well as specific conditions that may be provided under the approvals/permits granted for the Project. Federal and provincial permits are issued with stipulations, requirements, and conditions, which must be followed to maintain compliance during construction.

The Project Environmental Manager will maintain a database of permits including expiry dates and permit conditions. A permit book will be maintained with the original or copies of all permits. All on-site Project personnel conducting works under permit will be briefed at tailgate meetings of the conditions of the permit(s) prior to undertaking works. Relevant environmental permits will be kept on-site when required to do so by permit conditions.

3. Project Team Environmental Responsibilities

At Voltage, we recognize that a commitment to actively build and maintain long-term relationships with stakeholders is based on two fundamental guiding principles – communication and trust.

Our goal is to work collaboratively with Manitoba Hydro’s project team to meet or exceed their expectations, in turn, reducing the risk of negative influences affecting the project.

The following key personnel have been identified to ensure this occurs.

3.1. Project Manager

The Project Manager (PM) has the overall responsibility for the successful initiation, planning, monitoring, control, execution and eventual closure of the project. The PM works with the Construction Manager, the Project Environmental Manager (EM) and Site Supervisors to confirm compliance with construction and environmental aspects of all permits, contract documents, company policies, and commitments made during the Project.

Key duties of the Project Manager include confirming that all Project personnel receive an orientation and appropriate training to ensure execution of Manitoba Hydro and Project requirements. As well, the PM is responsible for the overall management of staff, construction budget, and environmental performance on the project.

3.2. Construction Manager

Construction Manager (CM) oversees the Project construction, directs, and monitors the progress of construction activities to ensure work is conducted as per contract requirements. The CM oversees all environmental programs and is accountable for implementing the EMP, Manitoba Hydro’s Construction Environmental Protection Plan and site-specific environmental mitigation. This position ensures that all environmental tasks are completed as required and as scheduled.

3.3. Construction Supervisors

Construction Supervisor (CS) is an integral role for ensuring compliance with the EMP, Manitoba Hydro’s Construction Environmental Protection Plan, and any permits. Construction Supervisors confirm the day-to-day construction activities are being conducted within the scope of environmental regulatory requirements, commitments, procedures, and specifications. Construction Supervisors develop, implement, and review project work plans and identify issues and opportunities to improve performance and meet client obligations. The Construction Supervisor will be the first point of contact for Foreman regarding daily work plans and environmental protection requirements.

3.4. Project Environmental Manager

Project Environmental Manager (EM) supports Voltage employees in the execution of the company’s project environmental program. The EM will ensure the requirements of the EMP and Manitoba Hydro’s Environmental Plans are implemented, maintained, and respected and project commitments are communicated and executed by field staff.

This position will develop, review and update contingency, mitigation and environmental management plans, as well as, oversee the remediation of any environmental incidents. The EM will confirm the necessary notifications and final reports are prepared and submitted to Manitoba Hydro and relevant outside authorities within the required timeframe.

The EM works with Project team leaders and Manitoba Hydro’s Environmental team members to coordinate sensitive activities and identify and resolve any concerns or issues. The EM will maintain a working relationship with Manitoba Hydro’s environmental staff to ensure all aspects of work are completed in compliance with Manitoba Hydro’s Construction Environmental Protection Plan, contract requirements, and environmental legislation.

3.5. Environmental Coordinator

The Environmental Coordinator (EC) is responsible for providing staff the Project environment orientation and ensuring staff are trained on project environmental requirements prior to the start of any construction, and periodically through updates delivered at the weekly safety meetings.

The EC conducts environmental audits and site inspections to evaluate compliance with project environmental requirements, regulatory approvals, the EMP, and environmental commitments. The EC will submit daily field reports and incident reports to management and Manitoba Hydro.

The Environmental Coordinator will oversee work occurring in and around Environmentally Sensitive Sites (ESS) to ensure proper mitigation and procedures are being utilized. The EC will respond and oversee all releases and clean-up of hazardous material and initiate communication with Manitoba Hydro. The EC is responsible for preparing and submitting the related documentation.

3.6. General Employee Responsibilities

The following is a list of obligations pertaining to general workers on the Project:

- Complete all aspects of work according to contract specifications, Manitoba Hydro’s Construction Environmental Protection Plan, and Voltages Safety Management Plan and EMP;
- Proactively report any potential environmental issues to Project Supervisors and Project Environmental team;
- Take all reasonable steps to prevent the release of potentially hazardous materials to the environment;
- Apply the Voltage Emergency Response Plan for any accidental release of hazardous material;
- Maintain detailed records of construction inventories, wastes, near misses, incidents, equipment inspections and maintenance and communicate any public complaints; and
- Maintain a respectful working relationship with all Manitoba Hydro representatives.

4. Project Training

4.1. Project Orientation

No individual or group will be authorized to enter the ROW or project until they have completed the Environmental Orientation. Individuals or groups who have not completed the orientation can access the ROW or associated facilities if accompanied by someone who has completed the orientation if this person acts as a guide only.

Environmental Orientations will include (but not limited to):

- Environmental principals and Project specific concerns;
- Contents of the EMP including training on the contents of Cultural Awareness and Heritage Protection Plans;
- Biosecurity requirements including cleaning and disinfecting procedures;
- Access, project limits, riparian zones, Species at Risk observation procedures;
- Fuel storage/handling/disposal procedures, Waste and Recycling Management, Erosion and Sediment Control procedures, Vegetation and soil requirements;
- Dangerous goods handling and hazardous material reporting requirements for environmental incidents and complaints; and
- Permits and licences including the requirements.

The Environmental Orientation Training Log provides a record of workers who have received environmental orientation training. All workers who have received environmental orientation will sign the training log, which will be available to Manitoba Hydro at any time.

4.2.

Tailboard Meetings

Tailboard meetings will be held prior to work at all sites within the Project ROW. This is to review Project issues and mitigation measures, site-specific mitigation measures, contingency plans, rules and regulations. This is also to allow for outstanding concerns to be addressed.

5. Monitoring and Inspections

Monitoring and Inspections are imperative to the protection of people, property, and the environment. Regular monitoring and the enforcement of environmental requirements helps to ensure that Voltage, along with its affiliates and subcontractors comply with all applicable environmental requirements: Federal, provincial or state, and local regulations, as well as client and project-specific policies and guidelines, and other requirements. Environmental monitoring and environmental inspections will be conducted on an on-going basis throughout Project activities.

5.1. Monitoring

Monitoring, documenting, and reporting on construction activities enables Voltage to maintain records on environmental performance, develop and execute corrective action plans, share information across the project team, and document the continuous improvement of processes and the program in general.

Construction environmental monitoring and associated reporting are required in order to ensure environmental compliance with this EMP, Manitoba Hydro's Construction Environmental Protection Plan, Provincial and Federal legislation, Best Management Practices (BMPs) and task specific conditions.

Voltage is committed to environmental monitoring as one method of promoting compliance with Project Environmental Requirements, to monitor the effectiveness of control and mitigation measures, and the help achieve a high standard of environmental management.

Environmental monitoring will be conducted on an on-going basis throughout transmission line construction activities.

5.2. Inspections

Voltage aims to achieve environmental compliance on all project sites through the implementation of effective orientation, monitoring, and communication programs. Under this function, the completion of inspections emphasizes the verification of compliance.

Inspections will be conducted to verify that project works are being performed in compliance with regulatory requirements, contract specifications and Manitoba Hydro's environmental commitments. The goal of the Voltage inspection program is to maintain a high-level of oversight to ensure the maximum environmental protection possible.

Voltage's approach to environmental inspections includes:

- Conducting regular inspections of construction to ensure compliance with the EMP, Manitoba Hydro's Construction EPP, contract documents, legislation, and industry best management practices;
- Being able to adapt to changing environmental conditions by providing mitigation to any potential issues or incidents;
- Provide written and photographic documentation in the form of daily, weekly, and monthly summary reports; and
- Provide a means for maintaining a collaborative relationship with Manitoba Hydro's project team by communicating work progress and any identified issues.

5.3. Inspection Schedule

FORMAL INSPECTION SCHEDULE		
Inspection Area/ Item	Frequency	Who
Construction site - work conditions	Daily Pre-shift/As conditions change	Supervisor/Environmental Coordinator
Construction site – work practices	Daily	Supervisor/HSE Coordinator/Environmental Coordinator
Construction site – safety program	Daily	HSE Coordinator
Construction in/near Environmentally Sensitive Sites	Daily	Environmental Coordinator
Heavy Equipment	Daily Pre-shift	Operator
Fuel Truck	Daily Pre-shift	Operator
Fuel Tanks	Daily	Supervisor/HSE Coord. / Environmental Coordinator

All formal inspections require the appropriate inspection form to be completed.

5.4. Documentation and Reporting

Reporting environmental performance is a requirement of the Voltage Power environmental program. Reporting enables Voltage to communicate environmental performance, identify, and share lessons learned, and promote regular improvement of its program and performance throughout the company. Effective communication, both internal and external, is critical to information sharing and compliance reporting. Voltage will maintain a high-level of open communication with the Manitoba Hydro Environmental team through providing documentation and reporting on environmental matters.

Voltage's documentation and reporting objectives include:

- Maintaining detailed records of all worker orientations and training, project environmental licenses, permits, approvals, project spills, identified contamination, wastes (treatment/disposal), public complaints, and other matters;
- Provide documentation of audits, inspections, and environmental findings to Manitoba Hydro Project team;
- Report the implementation of work modifications, environmental non-compliance/conformance, incidents/spills, and corrective actions to Manitoba Hydro;
- Report all discoveries of Heritage Resources, Wildlife observations, items of cultural significance, and Species at Risk observations, etc.; and
- Foster an open and transparent relationship between Voltage and Manitoba Hydro's project team to enhance the understanding of environmental concerns.

6. Project Contacts

The following is an example of the Voltage Project Emergency & Site Information form. This form lists the names and telephone numbers of individuals working onsite, as well as emergency contacts and various regulatory agency contact numbers for the Project. This form will be posted on the jobsite and be updated to reflect changes as they occur.

Project Emergency & Site Information		
Contact	Contact Number(s)	
Project Manager	Gerald Budzinski- (204) 794-8603	
Construction Manager	Lonnie Eirickson- (204) 806-5771	
Construction Supervisor	Floyd Hayward- (204) 792-8936	
HSE Coordinator	Scott Heffernan- 431-374-7066	
Project Environmental Manager	Todd Martin - (204) 794-0770	
Environmental Coordinator	Bryce Martin- 204-430-0803	
Project Location	Dorsey substation around south side of the city to Riel substation and east to highway 12	
Police	911	
Fire	911 or 1-800-782-0076	
Hospitals	Grace Hospital-300 Booth Drive- (204) 837-0111 Victoria Gen. Hospital-2340 Pembina Hwy- (204) 269-3570 Ste. Anne Hospital- 52 Saint Gerard- (204) 422-8837 Morris Gen. Hospital-215 Railroad Ave- (204) 746-2301	
Ambulance	911	
Hydro (powerlines)	204-480-5900	
Manitoba Hydro Environmental Officer	Evan Johansson- 204-803-6658	
Manitoba Hydro Field Safety Officer	Dean Rach- 204-918-3834	
Workplace Safety & Health	Winnipeg 204-957-SAFE (7233)	Manitoba 1-855-957-SAFE (7233)
(Sustainable Development)	Emergency Spills- (204) 944-4888	

7. Dangerous Goods Handling and Storage

This section of the EMP describes procedures to address purchasing, storage, transportation, handling of materials during construction of the Project.

As a company policy, we strive to minimize and reduce the amount of waste generated during construction. Voltage will make sure construction sites are always kept organized and tidy. Storage bins with lids will be provided on sites wherever solid wastes are generated. These bins will be collected and transported to Manitoba Hydro approved waste disposal facilities to prevent the unnecessary accumulation.

During construction, all wastes will be stored and disposed of in compliance with Voltage Waste Management Plan (APPENDIX D: WASTE AND RECYCLING MANAGEMENT PLAN), Manitoba Hydro's Construction Environmental Protection Plan and *The Environment Act, CCSM c E125* and its regulations.

7.1. Purchasing

Voltage will attempt to purchase materials which, when disposed of, can be recycled, and will not produce an impact to the environment. We have located approved Waste Management Facilities (APPENDIX D: WASTE AND RECYCLING MANAGEMENT PLAN) that are suitable for the treatment/recycling or disposal of waste materials.

7.2. Dangerous Goods Training

- Personnel responsible for generation, management, and transportation of dangerous goods will be provided Dangerous Goods (TDG) and WHMIS training designed to alert them to the hazards, proper handling practices, and necessary emergency response procedures associated with these materials;
- Training will also include education on Material Safety Data Sheets (SDS), including the nature of the information presented in SDS and the location of SDS information;
- Training will address Spill Response Plan procedures (APPENDIX C: SPILL RESPONSE PLAN) and include the requirement for the use of personnel protective equipment, conducting inspections, and record keeping; and
- Records of training will be maintained until project completion and provided to Manitoba Hydro upon request.

7.3. Storage and Handling

- Voltage Safe Work Plans, the *Canada Occupational Health and Safety Regulation SOR/86-304*, WHMIS and MSDS (SDS) guidelines will be adhere to during for all storage and handling of dangerous goods;
- Hazardous materials will be stored with secondary containment capable of containing 110% of the volume. An Emergency Spill kit will be located on-site where these materials are stored;
- Drums, totes, tanks, and other containers containing potentially hazardous materials will be clearly labeled identifying their contents as per WHMIS requirements;

- Indoor storage of flammable and/or combustible substances will be in a vented and fire-resistant enclosed storage areas or buildings in accordance with National Safety Codes and standards;
- Transfer procedures will be followed during any transfer of petroleum products and other hazardous materials; and
- All hazardous material storage areas will be regularly inspected to ensure compliance with regulatory and contract requirements.

Accidental releases will follow the procedures contained in the Spill Response Plan (APPENDIX C: SPILL RESPONSE PLAN).

7.4. Transportation

The transportation and handling of all dangerous goods will comply with the Federal *Transportation of Dangerous Goods Act, 1992* and the Provincial *Dangerous Goods Handling and Transportation Act, CCSM c D12*.

Voltage will ensure:

- Workers involved in any transportation of dangerous goods will receive the appropriate TDG (ground), MSDS (SDS) and WHMIS training and meet any requirements found within; and
- Any transported dangerous goods will have completed manifests/shipping documents and will comply with *Dangerous Goods Handling and Transportation Act, CCSM c D12* requirements for labelling, storage and load securement.

7.5. Petroleum Storage and Fueling

Fuel and other dangerous goods will be transported in approved containers using licenced fuel haulers. All aboveground petroleum product tanks with a capacity greater than 5,000 L will be registered and have a valid operating permit issued under the *Storage and Handling of Petroleum Products and Allied Products Regulation, Man Reg 188/2001*;

To minimize adverse environmental impacts the following conditions will be applied:

7.5.1. Storage

- Fuel storage sites will be inspected a minimum of once per week to ensure equipment is functioning properly;
- Aboveground tanks will be equipped with overfill protection and spill containment consisting of perimeter dykes or secondary containment in the tank design;
- All fueling operations will be conducted using a spill tray to capture any accidental release or dripping; and
- Storage areas and tanks will be properly signed and placarded and have up-to-date MSDS (SDS) sheets available.

7.5.2. Fueling

- All fueling operations will be a minimum of 100 m from the ordinary high-water mark of any waterbody;

- All fuel operations will follow the Safe Work Plan requirements;
- An Emergency Spill Kit will be available in all vehicles used to transport fuel and equipment receiving fuel;
- The transfer of fuel will be stopped prior to maximum fill, leaving room for expansion;
- Petroleum product storage tanks will be barricaded to avoid accidental vehicle/equipment collisions;
- Equipment with reduced mobility, such as cranes and excavators, will have fuel delivered by a mobile tank and re-fueling will take place on-site;
- All fueling operations will be conducted using a spill tray to capture any accidental release or dripping; and
- All equipment will be outfitted with Fire Suppressant Equipment and Emergency Spill Kits and will follow the Spill Response Plan “APPENDIX C: SPILL RESPONSE PLAN” in the event of an accidental release.

7.6. Spill Response

Dangerous Goods released to the environment may be harmful to human health and the environment. Voltage employees will make every reasonable effort to safeguard against this by diligently maintaining our fleet of equipment, carrying out daily equipment inspections and applying controls during storage and fueling operations. Accidental releases that do occur will be minimized using Emergency Spill Kits within vehicles/equipment and cleaned up immediately.

For additional details refer to the Spill Response Plan in “APPENDIX C: SPILL RESPONSE PLAN”.

Hydrocarbon impacted material recovered from spills on the Project will be brought to:

Mid Canada Soil Treatment Facility
1373 Bernat Rd., Grand Point, MB
(204) 878-2369

Mid Canada Material Acceptance Application Form (APPENDIX H: MID CANADA CONTAMINATED SOIL ACCEPTANCE FORM)

8. Construction Site Management

The Construction Site Management section identifies procedures that will be followed for the duration of the project. Prior to the start of any construction activities, a project specific orientation is mandatory for all employees and contractors. This orientation along with site specific environmental training will ensure employees and contractors have a clear understanding of the project rules, requirements and restrictions pertaining to the Project. Site specific procedures and Manitoba Hydro's Construction EPP mitigation requirements will be covered to ensure legislative and Project compliance.

8.1. Site Boundaries

- Existing routes, crossings and pre-disturbed lands will be utilized wherever possible;
- Environmentally Sensitive Sites (ESS) and "No Access" areas will be flagged in the field and avoided;
- If OFF right-of-way (ROW) travel is required, it will be assessed for environmental sensitivities and approved by the landowner and Manitoba Hydro Construction Supervisor prior to utilization;
- The right-of-way limits staking/flagging will be completed ahead of all other activities and will be maintained throughout all operations; and
- Signage will be installed indicating access points, sensitive areas, wetlands and areas which may require specific biosecurity mitigation prior to entrance/exit.

8.2. Access

Access within the Project will be coordinated with the Manitoba Hydro Project team and ensure that:

- Approved access is identified on Project access maps and appropriately signed in the field prior to construction;
- Pre-existing access trails, fences, gates, culverts will be maintained equal to, or greater than they were originally found;
- Any damage to property or the environment is strictly forbidden. Work will be planned and controlled to reduce any impact to wildlife habitat, wildlife corridors, adjoining properties and/or public use areas;
- Voltage will implement preventative measures to avoid any livestock/wildlife encounter during construction (i.e. fencing, flagging, barricading and/or removal of livestock);
- Pre-existing access points will be utilized to every extent possible. If new accesses are required, locations will be selected to avoid steep slopes and constructed to preserve terrain integrity;
- Utility first calls will be completed on all sites prior to construction activities commencing ensuring all underground facilities are identified, flagged off and the appropriate protection can be applied; and
- Any new access builds will only be constructed with approval from Manitoba Hydro and under an approved municipal permit.

8.3. Spring Thaw

Voltage will attempt to perform construction during dry/frozen conditions. If work must occur during the spring thaw period, the following steps will be implemented:

- All unnecessary material and supplies will be removed from the ROW to material/storage yards;
- Any structures or required material remaining on ROW will be placed on blocking;
- To every extent possible, low ground pressure equipment will be utilized for construction; and
- Equipment will adhere to the Manitoba Hydro Saturated/Thawed Soils Operating Guidelines and the Voltage Biosecurity Management Plan (APPENDIX F: BIOSECURITY MANAGEMENT PLAN) and ensuring any damage to the ROW is minimized and reclaimed as soon as possible.

8.4. Matting

Matting will be utilized to:

- Alleviate any potential landowner concerns for damage to their properties;
- Protect Environmentally Sensitive Sites (ESS) where there is risk of damage to the existing vegetation and soil integrity; and
- Mitigate damage into soft/wet areas that will not support the heavy load weights.

Should the use of mats be deemed necessary Voltage will ensure:

- Mats will only be positioned within ROW limits;
- Mats are inspected prior to arriving on-site to ensure cleanliness (free of any seeds, soil or vegetation);
- Matting placement/removal will adhere to the Manitoba Hydro Biosecurity Management Plan requirements regarding cleaning and disinfecting; and
- All matting debris remaining on-site after removal is cleaned up and removed from site acceptably to Manitoba Hydro and the landowner.

8.5. Historical and Archaeological Sites

Archaeological and historical artifacts will include but are not limited to: graves, bones, fossils and First Nation artifacts. To ensure compliance with *The Heritage Resources Act, CCSM c H39.1*.

Voltage will ensure that:

- No work will begin in any area identified as having historical or archeological significance until authorization from Manitoba Hydro has been provided;
- Known historical sites throughout the project area will be flagged/barricaded off and avoided during construction activities;
- If any artifacts are uncovered or encountered during construction, Voltage stop work in the area immediately and leave them as they were and notify Manitoba Hydro immediately;
- Work in the affected area will be suspended until direction and clearance from Manitoba Hydro is provided; and

- The collection or disturbance of these artifacts is strictly prohibited and illegal under *The Heritage Resources Act, CCSM c H39.1*

8.6. Agricultural Lands

The following procedures will be applied to all agricultural lands:

- To prevent the spread of noxious weeds and soil borne diseases Voltage employees will adhere to requirements within the Biosecurity Management Plan.
- Physical barricades will be erected to restrict travel for identified patches of noxious weeds;
- Erosion and sediment control will be established before construction work commences when it is deemed necessary;
- Vehicular travel on agricultural lands will follow existing trails and paths to the extent possible;
- Required travel off existing trails and paths will be minimized and restricted to previously approved routes within the ROW;
- All fences will be left in an "as-found" condition unless replacement is taking place;
- All gates will be immediately closed upon entry/exit; and
- Excess construction materials (i.e. waste, granular fill, clay) will be removed from construction sites and these areas will be restored to their pre-existing condition as soon as possible.

8.7. Crossings

Throughout the course of the project, various facilities (pipelines, railroad tracks, and roads) and wetlands will require traversing. Voltage will ensure:

- All necessary permits and approvals will be acquired and adherence to all terms and conditions will be followed;
- Steps will be implemented to prevent any damage to property (mats, tires, etc.);
- Activities in or around wetlands will be conducted within the appropriate timing windows;
- Crossing of watercourses will be avoided if possible and if necessary, will be limited to a one-time event using one point of entry/exit to minimize area of disturbance; and
- Matting within Environmentally Sensitive Sites (ESS) will receive prior approval from the Manitoba Hydro construction supervisor.

8.8. Winter Stream Crossings

Voltage employees will follow Manitoba Hydro's Construction EPP mitigation requirements (PC-1.29) and Ice thickness Chart regarding winter stream crossings.

Voltage will ensure:

- Staff are trained and adhere to Manitoba Hydro's Construction Environmental Protection Plan mitigation (PC-1.29) requirements and the Ice thickness Chart;

- Ice thickness and quality testing will occur at regular intervals. Signage clearly identifying test results will be made available at each crossing location;
- Access points will be limited to one entry and one exit point and conform to the natural topography as much as possible to avoid the need for cutting or filling of stream banks;
- Crossing limits will be clearly identified to ensure safe travel;
- No equipment, fuels or fluids will be left on the ice at any point. The only exception will be a portable water pump if additional flooding is necessary;
- Portable water pumps used for flooding will be placed in a means of secondary containment to catch any potential release of hazardous fluids in the event of accidental release;
- Suction hoses used on water pumps will be equipped with mesh screening to prevent debris; and
- All temporary bridge installations, snow fills and ice bridges will be removed prior to spring breakup.

8.9. Material and Staging Yards

Potential environmental impacts associated with Material and Staging Yards will be assessed and mitigated by:

- Ensuring all required landowner clearances have been established;
- Yards will be assessed and placed in locations that are outside of any environmentally sensitive areas;
- Yards will be a minimum of 100 m away from all wetland/watercourses;
- Yards will be located within previously disturbed areas or pasturelands;
- Boundaries will be clearly identified to ensure all vehicles/equipment remain within allowable limits;
- Yards will be located outside of areas that have high concentrations of residences or industrial areas due to heavy traffic, excessive noise, and the possibility of helicopter usage;
- After snowfalls, a layer will be retained during snow clearing to ensure that vegetation is left intact;
- Surface drainages and contours will be preserved or re-established once the yards are decommissioned;
- Containers for reusable and recyclable materials and waste will be available; and
- Yards will be reclaimed to their natural state as soon as they are no longer required and receive landowner confirmation.

8.10. Equipment Maintenance and Storage

Throughout the project, various types of construction equipment will be utilized, stored, and maintained on-site. Prior to storage, equipment will be inspected for fluid leaks and parked in a manner that allows for safe unimpeded use of the site.

If on-site maintenance of equipment is required, the following procedures will be applied:

- Ensure an Emergency Spill Kit is available prior to performing any maintenance;
- Maintain 100 meters at a minimum between equipment and waterbodies;
- An impermeable groundsheet or drip pans will be utilized under vehicles and equipment to capture accidentally released fluids;
- Promptly remove absorbent material or drip pans and dispose of them properly; and
- All fluids recovered during maintenance activities should be removed from site upon completion.

8.11. Equipment Inspections

Prior to equipment being utilized on the Project, a thorough inspection on all equipment will be conducted. This inspection will ensure:

- Equipment has been cleaned and is free of any soil, seeds or debris from previous worksites to ensure the prevention and spreading of noxious weeds or soil borne diseases;
- Equipment inspections will occur daily prior to use by operators to verify equipment is in good working order to minimize emissions and potential environmental issues;
- Construction equipment will have mufflers in good working order to restrict noise;
- Equipment is equipped with Emergency Spill Kits;
- Fuel trucks will be equipped with emergency spill kits and spill trays; and
- Equipment, which exhibits fluid leaks, will be shut down and taken out of service and reported to the mechanic and repaired immediately.

8.12. Maintenance Areas

- The *Canada Occupational Health and Safety Regulation SOR/86-304*, WHMIS and MSDS (SDS) guidelines will be obeyed in the storage and handling of all hazardous materials;
- Only appropriate tanks will be used for the delivery of fuels, oils, lubricants and antifreeze required for equipment maintenance;
- Fueling and equipment servicing will not be permitted on or near Environmentally Sensitive Sites (ESS);
- All repairs and/or refueling of equipment is strictly prohibited within a 100m from any wetland area or watercourse;
- Fueling operations will only take place with the use of emergency spill trays;
- Nozzles will always be handled to eliminate any potential equipment malfunction and potential overflow during fueling;
- Used filters, lubricants, antifreeze and other waste materials stored within the maintenance area will be contained in approved containers and/or transferred off-site following the Waste Management Plan requirements (APPENDIX D: WASTE AND RECYCLING MANAGEMENT PLAN); and
- All employees involved in fueling operations will be trained in Voltages refueling and maintenance Safe Work Plans and the Emergency Response Plan and the Spill Response Plan (APPENDIX C: SPILL RESPONSE PLAN).

8.13. Road Maintenance

Voltage will work with local municipalities to ensure impacts to municipal roads by company vehicles or equipment is minimized by implementing the following steps:

- Any damage to roads caused by company vehicles and equipment will be remediated as soon as possible back to its original state;
- All construction on any road within the project footprint will be carried out in a manner that will not endanger the traveling public and/or personnel carrying out the operations;
- Voltage will follow Provincial Regulations regarding safety signage and flagging requirements;
- Vehicles will not exceed the posted speed limits; and

- Personal vehicles are prohibited from work areas and within the project footprint.

8.14. Wildfire Prevention

Voltage will take every reasonable step to prevent fire and/or wildfire throughout the Project. Potential wildfire events will be minimized by adhering to the requirements within *The Wildfires Act, CCSM c W128* and implementing the following steps:

- Ensuring regular vehicle/equipment inspections and regularly maintenance schedules are adhered to;
- Ensuring all Project equipment contains the proper spark arrestors and emergency fire suppression equipment;
- Providing adequate training to all operators of Heavy Equipment;
- Ensuring proper care during all on-site refueling operations;
- Ensuring work procedures and daily tailboards identify potential risks associated with potential wildfires;
- Ensuring staff have reviewed the Emergency Response Plan prior to days activities;
- Implementing wildfire control methods during brushing/clearing activities (salvage merchantable timber, reduce windrow height and provide regular breaks between windrowed/stockpiled material);
- Ensuring smoking only takes place within designated areas and used cigarettes are fully extinguished and removed from site;
- Implementing a strict “No Burning” policy during the fire season (April 01- November 15);
- Contact the Provincial Wildfire Coordination Center immediately at 1-800-782-0076 in the event of any observation of ON or OFF Project wildfires.

8.15. Waste and Recycling

The purpose of the Waste Management Plan is to provide the procedures and management of the all wastes generated during our construction activities. Voltage has prepared the Waste Management Plan to ensure wastes are reduced/re-used/recycled or disposed in accordance with Federal and Provincial Legislation.

For details refer to the Waste and Recycling Plan found in “APPENDIX D: WASTE AND RECYCLING MANAGEMENT PLAN”

9. Fish and Wildlife Habitat Protection

Voltage will make every reasonable effort to perform work in a manner that minimizes any and all impacts to Fish and Wildlife and their habitat. Effectively managing our work sites and work activities is a key factor in reducing the overall environmental impact to Fish and Wildlife and their habitat created by the project. By controlling the risk of potential environmental contamination, soil compaction, and damage to riparian areas/vegetation/ natural features we reduce the risks to Fish and Wildlife that could directly or indirectly cause harm.

9.1. Wildlife Habitat Protection

The Wildlife Habitat Protection section of the EMP covers the steps Voltage will implement to minimize the environmental impacts and critical habitat for wildlife, migratory birds and raptors, amphibians and reptiles and species at risk.

In areas of sensitive habitat, avoidance and/or mitigation techniques will be utilized to reduce any impacts. Voltage will ensure work is conducted in accordance with Manitoba Hydro's Construction Environmental Protection Plan and the *Migratory Birds Convention Act, 1994*, *The Fisheries Act, CCSM c F90*, and *The Wildlife Act, CCSM c W130*.

- All required regulatory approvals will be obtained prior to construction and provided to Manitoba Hydro;
- Den discoveries will be reported, and the Voltage Project Environmental Manager will notify and work with Manitoba Hydro Environment team to ensure protective steps are implemented should construction continue;
- All animals including birds will be allowed to passively disperse from roads, ROW, and work areas;
- Discoveries and observations will be documented and reported to Manitoba Hydro environmental team;
- Temporary fencing will be erected are boreholes, pits, and excavations to provide a barrier for wildlife;
- Nuisance wildlife, wildlife deaths and any observation of Species at Risk will immediately be reported to Manitoba Hydro environmental team;
- Landowners will be notified if removal of livestock is necessary for operations; and
- No harassing/feeding of any wildlife of any kind will be allowed on-site.

9.1.1. Birds

- Buffers will be flagged to protect environmentally sensitive sites, critical wildlife habitats, nests/dens and observed Species at Risk;
- Minimize habitat disturbance and retain vegetated buffers by performing selective clearing when possible;
- Voltage will ensure operations are restricted and nest searches have been completed and required construction areas have been cleared if construction extends into the breeding bird window (April 14- August 30) in accordance with the Migratory Birds Convention Act, 1994;

- Nests discoveries will be reported to Manitoba Hydro using “Manitoba Hydro’s Bird Nest Collection Form”;
- Voltage Project Environmental Manager will notify and work with Manitoba Hydro Environment team to ensure protective steps are implemented should construction continue; and
- Buffers identified within Appendix E-6 Manitoba Hydro Breeding Bird Buffer Guidelines will be applied to active nests within the breeding bird timing window.

9.1.2. Reptiles and Amphibians

- Low impact methods will be utilized during clearing of riparian habitat to minimize disturbance;
- During the reptile and amphibian emergence breeding period (April 1st to August 15th), where required, Voltage will provide qualified personnel to perform the visual encounter surveys;
- Discoveries will be reported, and the Voltage Project Environmental Manager will notify and work with Manitoba Hydro Environment team to ensure protective steps are implemented should construction continue;
- All reptiles and amphibians will be allowed to passively disperse from roads, ROW, and work areas; and
- Erect sedimentation prior to activities occurring in areas of breeding habitat (e.g., wetland features, low-lying ephemeral ponds) to minimize the risk of frogs entering the work area.

9.2. Fish Habitat Protection

The Fish Habitat Protection section of the EMP covers the procedures Voltage will implement to minimize the environmental impacts for Fish and Fish Habitat. Voltage will ensure the proper protections are in place and work is conducted in a manner that complies with *The Fisheries Act, 1985*.

In-stream works are not anticipated for the Project, although they may be required for temporary stream crossing structures or culverts. As such, there is potential for Project related activities to interact with fish and fish habitat. General best management practices to mitigate effects on fish and fish habitat are outlined below.

- Disturbances to wetland/waterbodies will be minimized to every extent possible;
- Sedimentation controls will be installed and monitored for effectiveness in areas where sediment has the potential to affect watercourses;
- Work may be suspended after heavy rainfall events where ground conditions are saturated and will result in ground disturbance;
- Vegetation clearing within the Riparian Area will be avoided where feasible. If clearing is required, it will be conducted by hand or another low impact forestry method;
- Equipment will be stored, refueled, and serviced a minimum of 100 m from all wetlands/waterbodies;
- Emergency Spill Kits will be on hand when working around wetlands/waterbodies to minimize and clean-up any accidental release of deleterious substances;

- Water recovered from dewatering activities or other operations will be discharged away from all wetland/waterbodies;
- All surface water ditching that was changed will be re-established during reclamation;
- Where water crossings will be installed, methods that allow for continual flow of water will be utilized; and
- Slope cutting will only be considered as a last resort and will only take place after pre-approval from Manitoba Hydro construction supervisor.

10. Environmental Protection

Environmental Protection measures will be incorporated into all activities, for the duration of construction, at any location within the MMTP footprint. These protective measures provide Construction Best Management Practices and address many of the mitigation measures for transmission projects. This section specifies the mitigation measures and other environmental requirements to be implemented during construction.

10.1. Timing Windows

Voltage will adhere to the following timing windows or as directed by Manitoba Hydro.

Restriction	Time	Details
In-Water Work	April 1 to July 15	All in water work or activities that may affect waterways, fish mobility or habitat are restricted
Migratory Bird Nesting Period	April 14 to August 30	Bird Sweeps will be conducted ahead of Construction.
Amphibians	April 01 to August 15	Visual Encounter survey to be completed
Burning	April 1 to November 15	Burning is not permitted, without a burning permit

10.2. Riparian Management

Voltage will ensure all workings are completed in compliance with the *Fisheries Act, 1985* regarding vegetation clearing, ground disturbance and erosion and sediment control within riparian areas.

Voltage will conduct work in a manner that minimizes environmental impacts by following these steps:

- Buffers/flagging will be established around all wetlands/waterbodies and other Environmentally Sensitive Sites (ESS) to restrict construction activities and vehicle/equipment traffic;
- Vegetation clearing within Riparian Areas will be avoided where practicable. If clearing is required, it will be conducted by hand clearing or another low impact method;
- Disturbances to wetland and watercourse edges will be minimized to the extent possible;
- Required work within riparian areas will be conducted during dry/frozen ground conditions if possible, to minimize ground disturbances;
- Work occurring near wetlands/waterbodies will be closely monitored and possibly suspended during heavy rain events to avoid causing compaction and rutting near riparian areas; and
- Any required crossing of streams will be done at 90-degree angle using one trail in/out.

10.3. Erosion and Sediment Control

Erosion and Sediment Control measures will be installed around work areas where erodible ground is exposed and has the potential to leach into surrounding watercourses. These work areas include clearing and structure placement. Mitigation measures will be appropriate for the site location and ground disturbance. Voltage will apply erosion and sediment control measures based on contract specifications and Best Management Practices to minimize negative impacts and maintain compliance with Manitoba Hydro's Construction Environmental Protection Plan and *The Fisheries Act, 1985* throughout the project.

For prescriptive details refer to the Erosion and Sediment Control Plan in "APPENDIX E: EROSION AND SEDIMENT CONTROL PLAN".

10.4. Groundwater Management

- Dewatering will be coordinated with Voltage Environmental Coordinator to ensure compliance with Provincial regulations and Manitoba Hydro requirements;
- All groundwater dewatering activities will be conducted in a controlled setting;
- Dewatering activities will be conducted in such a manner as to slow down discharge velocity and not cause erosion issues or prevent the release of water into any wetlands/waterbodies;
- Drilling equipment will be inspected for fuel and oil leaks prior to arrival at work sites to avoid any contamination;
- If surface water is observed during construction, Voltage's Environmental Coordinator will be contacted and will notify the Manitoba Hydro environmental team;
- Where there is a surface and groundwater mixing potential, precautions will be taken to prevent admixing; and
- If flowing artesian wells are encountered during test hole drilling, holes will be sealed to prevent the release of groundwater to the surface (use of bentonite) and capped with drill cuttings to the surface level.

10.5. Biosecurity

Voltage has developed and will implement a Biosecurity Management Plan that provides procedures regarding equipment/vehicle inspection and cleaning/disinfecting requirements on agricultural lands based on risk. The objective of the Biosecurity Management Plan is to provide guidance to Voltage employees to prevent potential biosecurity risks as a result of work activities on MMTP.

For prescriptive details refer to the Biosecurity Management Plan in "APPENDIX F: BIOSECURITY MANAGEMENT PLAN".

10.6. Soil Management

Voltage employees will make every reasonable effort to work proactively to mitigate potential environmental in the management of soils risks by:

- If stripping or excavation of soils is required, the topsoil (A Horizon) will be removed separately from the subsoil (B Horizon);

- If stripping or excavation of soils is required, the topsoil will be salvaged and stockpiled separately from subsoil to prevent loss and admixing if reclamation is anticipated;
- Excavated soil that is deemed suitable for re-use as construction backfill will be replaced as close as possible to the location from which it was excavated during construction activities;
- Salvaged topsoil will be inspected for signs of contamination (i.e. deleterious material and / or subsoil);
- Off-site transport and disposal of soils will be coordinated between Voltage Environmental Coordinator and Manitoba Hydro Environmental team to ensure compliance with Ministry of Environment requirements; and
- If soil identified for off-site salvage does not meet standards outlined in local guidelines/regulations for the intended land use, it will be disposed of at an approved waste disposal facility.

10.7. Environmental Sensitivities

Voltage employees will make every reasonable effort to work proactively to mitigate potential environmental sensitivity risks by:

- Demanding staff to wear the appropriate PPE based on tasks being completed to reduce the risk of any chronic condition and exposure to chemicals or other environmental risks;
- Reducing potential air quality effects by limiting work to the immediate vicinity of the Project footprint;
- Ensuring dust and wind erosion control measures are established near populated areas and environmentally sensitive sites; and
- Ensuring all staff have reviewed Emergency Response Plan and follow procedures within regarding heavy winds, lightening and extreme heat/cold events.

10.8. Noise Management

During construction of the transmission tower foundations, transmission tower placement and line stringing, noise inputs will increase due to:

- Helicopter transport of crews and materials to transmission tower and staging area locations;
- Heavy machinery use;
- Ambient noise from temporary camps (generators, vehicle traffic etc.); and
- General construction activities.

10.8.1. Noise Mitigation

Through implementation of the following mitigation measures, noise impacts on the environment, specifically wildlife, are anticipated to be low and short-term:

- Conduct construction activity within reasonable hours to reduce the duration of the impact of construction noise, unless otherwise approved;
- No excess use of equipment horns or air horns;
- Mufflers or silencers that are not functioning will be repaired;
- Maintain equipment in good working order; and

- Uncommon loud equipment noises will be investigated and repaired.

Potential effects of noise-related disturbances to sensitive wildlife and bird species will be minimized by observing construction timing windows.

10.9. Dust Control

Voltage will ensure dust control measures are established on a case by case basis; These preventative measures will include:

- Complying with posted speed limits, and as appropriate, further reducing speeds when travelling on unpaved surfaces to reduce dust creation;
- Controlling dust by wetting down paths and roadways by restricting vehicle travel during non-frozen conditions;
- Covering fine grained materials during transport to prevent loss of materials through wind exposure; and
- Implementing contingency plans when dust becomes an issue; e.g. Heavy winds cause an increase in dust above acceptable levels, work will be shut down and additional dust control measures will be implemented (wind fencing, water spraying, etc.).

10.10. Greenhouse Gas Management

Voltage is committed to continuous improvement of our operational performance to prevent pollution and reduce waste. Voltage is committed to evolving company-wide practices to reduce our contribution of Greenhouse Gasses (GHG). Voltage prides itself on the running of efficient projects. This alone has a direct impact on the carbon footprint of a project.

The following preventative measures to reduce Greenhouse gases will include:

- Reducing pollution and emissions through our implementation of an anti-idling vehicle policy;
- Limiting the amount of traffic by using multi-passenger vehicles to transfer workers, when practical;
- Maintaining properly functioning vehicles and equipment;
- Implementation of a comprehensive recycling program to minimize the effects on local landfills; and
- Post-construction reclamation work strives to maximize replacement of indigenous flora; foremost in the natural conversion of carbon dioxide to oxygen.

11. Task Specific Protection

11.1. Brushing and Clearing

Brushing and Clearing will only occur with prior approval from Manitoba Hydro environmental staff. Potential environmental effects associated with clearing include:

11.1.1. Effects

- Alteration or destruction of plant and wildlife habitat can be destructive to birds and their habitat, such as tree and ground nests, as well as areas in which they find food;
- Changes to soil properties (moisture, temperature, and fertility) that coincide with breeding ground sites of amphibians and reptiles can have a significant effect on local populations;
- Increased erosion and sediment entering waterbodies;
- Contamination of soils and groundwater;
- Edge effects on plants adjacent to cleared areas;
- Introduction and/or spread of invasive plants;
- Disturbance to potential heritage resources; and
- Increased fire hazards, noise, dust, negative aesthetics, and increased accessibility.

11.1.2. Mitigation

Voltage will mitigate environmental impacts associated with brushing and clearing activities by implementing the following steps:

- Ensuring brushing/clearing protocols are in place and have been reviewed with clearing/brushing crews prior to working;
- Clearing limits will be clearly identified using flagging to minimize clearing outside required areas;
- Riparian buffers will be flagged off and required brushing/clearing will be completed by hand or low impact methods;
- Vegetation between a waters edge and construction site will be completed using selective clearing methods as determined by Manitoba Hydro;
- During breeding bird timing windows (April 14 to August 30), steps will be taken (nest sweeps) to ensure compliance with *Migratory Bird Convention Act, 1994*;
- Clearing in areas with environmental sensitivities will be minimized to every extent possible. Where clearing cannot be avoided, low impact equipment will be used to retain the top layer of organic soil, ground vegetation and an insulating cover to the furthest extent possible;
- Vegetation buffers will be implemented between the ROW and identified sensitive environmental features such as; stick nests, mineral licks, dens, calving or breeding sites, waterbodies and heritage sites;
- Stumps will be taken down as close to the ground as possible without disturbing existing root mass to reduce safety risks for workers and wildlife travel;

- Woody debris will not be pushed into standing timber, a minimum buffer will be left between windrows and standing timber;
- Any trees accidentally felled into standing timber will be immediately removed to reduce safety risks; and
- Mulching operations will be compacted below 20cm and be placed within the ROW boundaries.

11.3. Grubbing

Voltage will mitigate impacts associated with grubbing activities by implementing to the following steps:

- Grubbing will not change access to the existing trails and other travel corridors;
- All areas requiring extensive grubbing will be stabilized as soon as possible to minimize potential erosion;
- Stockpiled materials from grubbing will not block natural drainage patterns and will be located on stable ground above the high-water mark;
- Grubbing activities will end a minimum of 2 meters from any standing timber to avoid disturbing the root systems of nearby standing trees and reduce potential blow down; and
- Steps will be taken to avoid any damage to property when grubbing.

11.4. Stripping and Grading

- Topsoil (A Horizon) will be removed separately from the subsoil (B Horizon). Depths will be determined and tracked to help aid in the implementation of wet weather protocol and site reclamation;

- When possible, topsoil will be stripped during dry ground conditions as to minimize effects such as rutting and/or compaction;
- Erodible soils will be exposed for the minimum amount of time;
- Care will be taken not to over-strip into the subsoil;
- If stripping and grading is required, and reclamation is anticipated, soil/subsoil/spoil material will be salvaged and stockpiled separately to prevent loss and admixing of layers;
- If reclamation is not anticipated (i.e. areas will remain permanent), soil will be removed from site with first right of refusal provided to the landowner;
- Soil stockpiles will be located within the ROW limits unless instructed otherwise by Manitoba Hydro's Construction Supervisor;
- Stockpiles will be in flat, contained areas as approved by the Voltage Construction Manager and Project Environmental Coordinator; and
- Grading for gravel pads and access roads will be limited to areas where it is needed for the safe and efficient operation of vehicles, machinery and construction equipment and will only be permitted within approved construction areas.

11.5. Blasting

Voltage will employ only qualified persons, with appropriate training and experience, to carry out the transportation and handling of explosives. Good housekeeping practices will be observed during loading of explosives with a plan to immediately clean up spills and detonate in the blast. Proper loading techniques will be implemented to minimize the use of excess explosives and the potential for spillage. Avoid using explosives in or near water.

11.6. Reclamation

Voltage believes reclamation is an ongoing process during the life of a project. Voltage will ensure reclamation during the project is minimized by implementing the following steps:

- Reclamation will be completed for all temporary works, including roads, access trails, stream crossings, marshalling yards, and quarry and borrow areas immediately;
- Waste removal will occur on a regular basis while construction activities are ongoing;
- Any rutting or compaction that may have occurred within the project ROW will be tilled and leveled off and natural drainage will be re-established;
- Any excavation will be levelled off and recontoured to fit the natural environment as soon as it is no longer required;
- During stripping/grubbing activities soil and sub-soil will be stockpiled individually and replaced individually during reclamation;
- All temporary buildings/structures/equipment/matting will be removed from the Project as soon as it is no longer required;
- All snow fills and/or ice bridges will be removed prior to spring breakup;
- A punch list documenting site conditions/required reclamation will be prepared and updated throughout the Project; and
- Final reclamation will be considered satisfactory by gaining Manitoba Hydro construction supervisor and landowner signature.

APPENDIX A: INSPECTION FORMS

The following inspection forms are provided for reference only. The actual forms will address the specific inspection requirements of the activity.

ENVIRONMENTAL HAZARD ASSESSMENT FORM

Supervisors must examine the job site on an ongoing basis to determine what hazards *EXIST* and what *POTENTIAL* hazards could result in environmental loss. Hazards are to be addressed immediately. A review of hazards recorded should be discussed at designated meetings. Reports must be retained for environmental auditing purposes.

COMPLETE ALL ITEMS/AREAS THAT APPLY TO PROJECT AT THE TIME OF INSPECTION

Project Material & Supplies Storage Area(s)			
Item	Status		Comments:
	✓	X	
Are construction materials stored in a safe location?			
Are oil, lubricants, antifreeze, and solvents, stored in a safe location, segregated for incompatibility & in proper containers?			
Are fuel tanks located in a safe location should a release occur?			
Are stocked spill kits sufficient for the quantity stored available?			
Have all workers handling environmentally hazardous products been trained in safe handling & emergency procedures?			
Are pressurized cylinders stored in a safe location, secured & segregated by a safe distance			
Project Waste Management (Equipment Related)			
Item	Status		Comments:
	✓	X	
Are used oil & filters collected & stored in approved containers?			
Is used antifreeze collected & stored in approved containers?			
Are used batteries collected & stored in a central & safe location?			
Are maintenance garbage & empty containers collected & stored in a central location			
Where environmentally hazardous waste is stored, is approved perimeter/area containment in place & in good			

condition?			
Where containment area(s) are required to be emptied, are measures taken not to pump contaminants into the environment?			
Is waste being disposed in accordance with regulated requirements?			

Service & Fuel Trucks

Item	Status		Comments:
	✓	X	
Are fueling procedures being followed?			
Are appropriate & well-stocked spill kits available for service & fuel trucks?			
Are drip/collection pans available & used for maintenance work?			
Are provisions available to collect any spilled or released contaminants?			
Is servicing & fueling work being done at a safe distance (100 metres) from water/wetland sources?			

Project Limitation or Sensitive Area Markings

Item	Status		Comments:
	✓	X	
Is project staking identifying project operating limits in place?			
Is equipment remaining within the designated project limit areas?			

Construction activity waste generated

Item	Status		Comments:
	✓	X	
Are wastes (asphalt cuttings, concrete grout, etc.) generated from construction activities collected, stored at a safe location from water or wetlands to prevent contamination?			
Are brush clearing waste being stored in a safe location & being disposed of in the required manner?			

Erosion Control Mechanisms

Item	Status		Comments:
	✓	X	
Is the silt fencing properly installed?			
Is the fencing in good condition?			
Is there a requirement to clean up silt build up?			

Is silt build up being deposited in locations that will not cause silt contamination?			
Where there is work ongoing in a waterway, are barriers in place & in good condition to prevent disturbed water from entering the watercourse?			
Where there are A & B Horizon soils stored, are buffers installed & sufficient to prevent cross contamination?			
Where seeding erosion controls are in place, is the installation providing the required purposes?			
Where cofferdam(s) are in place is the condition of the flow prevention method in good condition and providing the required protection?			
Are there any potential erosion areas?			
Is additional material available to respond to an emergency created by heavy rains or other extreme weather conditions?			

Dewatering

Item	Status		Comments:
	✓	X	
Where dewatering is done, are sufficient erosion controls implemented?			
Is assessment done prior to dewatering to ensure contamination of the discharge does is within acceptable allowances?			

Camp Facilities

Item	Status		Comments:
	✓	X	
Is camp facility garbage collected & disposed of in accordance with requirements?			
Is the camp sewage system installed as required & waste disposed in accordance provincial/local requirements?			

Supervisor/Foreman

Print: _____

Sign: _____

Date: ____/____/____
M/M D/D Y/Y



Inspection Item	Yes	or Describe Corrective Action Required
Is the tank situated on a level aggregate bed or ground surface and protected by physical barriers for protection against impact by heavy machinery?		
Are there any leaks or spills around the tank or dispensing area?		
Is the tank properly labeled and placarded for WHMIS and TDG?		
Is fire extinguisher present and indicating usable condition?		
Is a well-equipped spill kit readily available for use?		
Is product discharge piping protected from damage by physical contact?		
Is the discharge nozzle automatic shut off in good working order?		
Was the discharge nozzle found properly stored to help prevent spills?		
Are the access stairs, ladder, platform and guardrails, secure and in good condition?		
Is the vent fill pipe properly installed and in good condition?		
Other observations or suggestions if any (please describe):		

Weekly Fuel Tank Inspection Checklist

Inspected By: _____ **Date:** _____



APPENDIX B: SPILL RESPONSE FORMS

The following inspection forms are provided for reference only. The actual forms should address the specific inspection requirements of the facility.

SPILL AND RELEASE INFORMATION SHEET

<i>The information below has been developed at the direction of counsel and is privileged and confidential.</i>	
Date:	Date and Time of Spill:
Type and Concentration of Material:	
Estimate of Quantity Released:	
Location:	
Description of Incident: (Include cause of spill, if known; and what spill was released to - paved road, soil, etc.)	
Did the release enter a stream, wash or pond? Describe in detail:	
Steps taken to control and contain the release:	
Corrective Actions:	
Name: (print)	Signature:
Supervisor: (print)	Signature:

HAZARDOUS SUBSTANCES SPILL/ RELEASE REPORT

Person reporting the spill: _____

Person & phone number reported to: _____

Date of spill: ____/____/____
(MM) (DD) (YY)

Time of spill: _____

Location where spill occurred:

Hazardous Substance Type:

Hydraulic Oil (New) Antifreeze (Used) Engine Oil (New) Diesel Fuel Gasoline
Hydraulic Oil (Used) Antifreeze (New) Engine Oil (Used) Other: _____

Quantity Spilled: _____ Liters Kilograms

Cause of spill:

Cleanup Actions:

Disposal Method:

Corrective Measures:

REPORT PREPARED BY: _____

DATE: _____
(MONTH) (DAY) (YEAR)

Release of substances into the environment must be reported if the release has caused, is causing, or may cause an adverse effect. **(SEE REVERSE SIDE FOR REPORTABLE QUANTITIES)**

Reporting: Provincial Enforcement Center: 1-800-667-7525



APPENDIX C: SPILL RESPONSE PLAN



Manitoba – Minnesota Transmission Line Project

B.6. Environmental Management Plan

Appendix C: Spill Response Plan



Table of Contents

1. Introduction	2
1.1. Purpose	2
1.2. Objective	2
1.3. Legislative Requirements	2
1.4. Training	3
1.5. Emergency Equipment	3
2. Roles and Responsibilities	5
2.1. Management Roles and Responsibilities	5
2.1.1. Project Supervisor	5
2.1.2. Site Environmental Coordinator	5
2.1.3. Voltage Project Environmental Manager.....	6
3. Spill Prevention	7
4. Fuel Handling, Storage, and Transportation.....	8
4.1.1. Handling.....	8
4.1.2. Storage	8
4.1.3. Transportation.....	8
5. Spill Response	10
5.1. Spill Response Procedure	10
5.2. Clean-up Procedure	10
5.3. Incident Reporting	11
5.4. Reportable Spills	12
5.5. Emergency Contacts.....	12
5.6. Reportable Quantities	12
6. Waste and Disposal	14
6.1. Guidelines and Facilities.....	14
6.1.1. Licenced Hazardous Waste Disposal Facilities	14
6.2. Contaminated Soil Disposal	14

1. Introduction

The Spill Response Plan outlines the course of action to be taken by Voltage (Voltage) employees, contractors and visitors in the event of a release during the course of the Manitoba-Minnesota Transmission Project. The Spill Response Plan has been developed to provide guidance to Voltage employees and our subcontractors on the procedures for responding, clean-up, reporting and disposal of releases to ensure compliance with Manitoba Hydro requirements, industry best practices and Legislation.

This Spill Response Plan will be made available to all staff. Voltage and its subcontractors have a duty to control and remediate on-site releases of hazardous materials to reduce the impact to the environment.

1.1. Purpose

The purpose of this Spill Response Plan is to provide a state of company readiness which will allow for a quick and systematic response in the event of a release of hazardous material by Voltage employees and our contractors. It outlines response procedures, mitigation and protective actions that will be applied to safeguard the health and safety of personnel, the environment, and nearby communities.

1.2. Objective

The objective of the Spill Response Plan is to outline the responsibilities and procedures Voltage employees will employ to respond to a potential release on the Project in order to:

- Protect workers, the public and surrounding communities;
- Identify the potential for accidents and emergency situations;
- Plan responses to accidents and emergency situations;
- Prevent and mitigate environmental effects associated with accidents and emergency situations; and
- Identify the verification and monitoring measures that are required to fulfill our commitment to Manitoba Hydro, as well as, legislative and permit requirements.

1.3. Legislative Requirements

1. The *Canadian Environmental Protection Act, 1999* requires that when an environmental emergency occurs, any person who owns or has the charge or control of the substance immediately before the emergency will notify an enforcement officer.
2. The *Federal Fisheries Act, 1985* prohibits the deposit of a deleterious substance in waters frequented by fish as well as making reporting of spills of deleterious substances to water mandatory.
3. The *Transportation of Dangerous Goods Act, 1992* and the *Provincial Dangerous Goods Handling and Transportation Act, CCSM D12* and its *Environmental Accident Reporting Regulation, Mand Reg 439/87* requires reporting dangerous goods incidents which meet or exceed established reporting criteria.

4. *Workplace Hazardous Materials Information System (WHMIS) RRO 1990, Reg 860*, made under the *Occupational Health and Safety Act* states that training is legally required for all employees who are exposed or likely to be exposed to a hazardous material or controlled product at the workplace.

1.4. Training

All Voltage employees are required to receive the project specific environmental orientation prior to working on the Project. This training provides employees and contractors with essential information pertaining to procedures for dealing with all releases of hazardous materials. The environmental orientation will also capture safety procedures, Workplace Hazardous Materials Information System (WHMIS), MSDS (SDS) and project specific environmental requirements and regulatory requirements.

Voltage will ensure all employees involved in the transportation, storage and handling of hazardous material have received the appropriate training TDG ground, MSDS (SDS) and WHMIS.

Training regarding hazardous material will include:

- TDG requirements and handling responsibilities;
- Descriptions of the Hazardous goods classifications;
- Dangerous goods list data and other sources of information (i.e. SDS, WHMIS);
- Dangerous goods safety marks, placards and requirements; and
- Accidental release procedures for responding, clean-up, reporting and disposal.

1.5. Emergency Equipment

An effective Spill Response Plan begins by planning and preparing prior to an actual incident occurring. Voltage will ensure sufficient quantities and types of appropriate spill control materials is available to control and clean-up any spill that occurs on the Project. Heavy equipment to aid in the recovery of material will also be made readily available.

As a company policy, Voltage requires that all vehicles/equipment be equipped with an Emergency Spill Kit. Vehicle/Equipment Emergency Spill Kit contents include:

- 10 Pads (15" x 19");
- 2 Socks (3" x 4');
- 1 Pair Nitrile Gloves; and
- 1 Disposal Bag.



Figure 1 Emergency Spill Kit Sample

Voltage also has available 55 gallon-Universal Drum Spill Kits that can be utilized if necessary. Universal Drum Spill Kits contents include:

- (50) 15 x 19" Pads
- (4) 3" x 12' Sorbent Socks
- (8) 18 x 18" Pillows
- (1) pair Nitrile Gloves
- (5) Disposal Bags
- Emergency Handbook



Figure 2 Universal Drum Spill Kits

2. Roles and Responsibilities

The Spill Response Plan forms an essential part of the Voltage Environmental Management Plan (EMP) which provides the context for environmental protection on our projects.

Voltage employees are accountable for:

- Ensuring they are adequately trained and informed of the requirements for responding to hazardous material releases;
- Following company and Project Safe Work Plans and protocols for responding, clean-up, reporting and disposal of hazardous material;
- Ensuring activities comply with the Spill Response Plan, legislative and Client requirements;
- Conducting work in a safe and responsible manner; and
- Ensuring adequate equipment and materials are available to recover, segregate and manage hazardous wastes.

2.1. Management Roles and Responsibilities

2.1.1. Project Supervisor

1. Contact the Voltage Site Environmental Representative dedicated to the site.
2. Coordinate the Spill Response on site in the following order:
 - Ensure safety;
 - Stop the source of spill and contain it;
 - Mobilize recovery equipment and clean-up crew and direct clean-up activities;
 - Establish additional clean-up and containment options with the Voltage Environmental Coordinator and Health and Safety Site Representative; and
 - Continue clean-up until completion.
3. Contact the appropriate emergency response services if required.

2.1.2. Site Environmental Coordinator

1. Report the spill to the Voltage Project Environmental Manager.
2. Coordinate with Project Supervisor and develop a clean-up plan.
3. Notify Manitoba Hydro Environmental Representative.
4. Oversee clean-up until completion.
5. Complete Spill Report and submit to Client:
 - Time;
 - Source;
 - Root cause
 - Location;
 - Type and volume of spilled material;

- Proposed clean-up method; and
- Corrective actions.

2.1.3. Voltage Project Environmental Manager

1. Responsible for notification and reporting to Municipal, Provincial and Federal agencies if required:
 - Notification to outside agencies should be completed as soon as practical; and
 - Reporting should be made within 24 hours.
2. Report reportable spills to Clients Project Management team and outside agencies.

3. Spill Prevention

Voltage acknowledges that any amount of hazardous material released to the environment is harmful to human health and the environment. As such, our employees will take every reasonable step to safeguard against this occurrence by meticulously maintaining our equipment, performing daily equipment inspections and applying controls during storage and fueling operations.

Spill response objectives will be clearly communicated, measurable and achievable. Effective planning and execution of responses is based on coordination and allocation of resources effectively (i.e., people, equipment, time).

General Spill Prevention practices will include:

- All equipment will be inspected daily, prior to use, and in good operating condition, clean of oil, grease and other contaminants and all hydraulic systems, fuel systems and lubricating systems will be in good repair;
- Equipment that experiences a leak or has the potential to release hazardous fluid will immediately stop working and be taken out of service until issue is resolved;
- All fuel must be stored properly on site and have approved secondary containment and proper fuel handling, storage and transportation procedures will be strictly enforced;
- Parking, fuelling, servicing or washing machines or equipment will not occur within 100 meters of a watercourse;
- On-site storage of fuel, lubricants and oils will be avoided whenever possible. Where these products are required in the field, proper handling and storage procedures will be obeyed;
- On-site re-fueling and equipment repairs will be avoided, whenever practical. If required, refueling will occur in designated and approved areas and proper refueling procedures will be followed;
- Used oil, filter and grease cartridges, lubrication containers and other equipment maintenance products will be collected, removed from site and disposed of at the nearest registered hazardous waste facility;
- Spill kits must be kept on-site, particularly in areas where oil and fuel-filled equipment will be working and be readily available in order to respond to a spill, should one occur; and
- A list of emergency contacts will be posted or kept at a predetermined known site.

4. Fuel Handling, Storage, and Transportation

The safe handling, storage and transportation of fuel and petroleum-based products is an environmental priority for all Voltage employees. Daily environmental tailboard meetings will address all environmental risks associated with fuel handling, storage and transportation and may be used to review site specific requirements and response procedures should a fuel spill is detected.

The following best management practices will be employed in order to reduce the risk of an environmental incident and minimize negative environmental impacts.

4.1.1. Handling:

- Voltage will ensure that all staff are trained in WHMIS and TDG;
- All staff will be aware of the environmental risks associated with their work, be equipped with adequate spill kits, have appropriate training, and follow established procedures;
- Personnel involved in the transfer of fuel will be trained and follow fueling procedures;
- All fueling of pick-up trucks will be done off-site, if possible. Equipment that must be refueled on-site will be done following refueling procedures;
- Where equipment must be refueled on-site, it will be carried out using a spill tray of sufficient size and depth to reduce the risk of environmental impacts; and
- Refueling is not permitted within 100 m of any wetland or watercourse.

4.1.2. Storage:

- Designated fuel storage areas will be clearly identified;
- All containers will be appropriate double walled containers and correctly labelled according to WHMIS and TDG requirements;
- Storage areas will be located at least 100 m from any watercourse and meet all provincial laws, standards, and codes of practice;
- Fuel storage areas will be equipped with spill kits, secondary containment sufficient to hold 110% of the largest container;
- Traffic barriers will be installed, and designated parking areas will be clearly identified to prevent accidental collisions;
- Fuel storage areas will be posted with Emergency Response procedures and emergency contacts.

4.1.3. Transportation:

- Fuel and oil transportation will meet all provisions of the *Transportation of Dangerous Goods Act, 1992*;
- All fuel and oil containers must be secured to avoid escape and shifting;

- Tanks used to transport combustible or flammable liquids must be designed, constructed, filled and closed to avoid discharge, emission or escape of dangerous goods from container.

5. Spill Response

In the event of a spill, Voltage employees will adhere to the following Spill Response procedure and ensure that all appropriate Manitoba Hydro representatives, landowners and outside authorities have been notified.

5.1. Spill Response Procedure

If a spill/release of fuel, oil, lubricant or other hazardous material occurs, the following steps will be followed:

1. IDENTIFY THE HAZARDS
 - Identify the product, product hazards and site hazards.
2. PROTECT YOURSELF
 - Turn off all equipment and ignition sources as soon as possible if spill is considered flammable.
3. STOP THE SOURCE
 - Close valves, shut off pumps, plug holes/leaks, set containers upright.
4. CONTAIN THE RELEASE
 - Deploy contents of spill kit (adsorbent pads and socks). Contain the spill as close to the source as possible using the appropriate spill containment methods for the type of spill.
5. SECURE THE SITE
 - Ensure affected area is blocked off and limit unnecessary access.
6. NOTIFY
 - Notify Construction Supervisor who will inform the Site Environmental Coordinator. The Site Environmental Coordinator will notify the Clients environmental department.
7. PLAN THE CLEAN-UP
 - Mobilize clean-up equipment and personnel and make sure to remove all impacted material.

5.2. Clean-up Procedure

Emergency Spill Kits containing adsorbent pads, hydrocarbon socks and hazmat bags will be in company vehicles/equipment and at all equipment storage locations. These kits will be utilized as a first line of defense to contain and collect any releases of fuels and lubricants. All reasonable measures will be made to contain and minimize the spill and minimize the impact on the environment.

If an environmental spill does occur, it will be cleaned up using the following the steps:

- Determine clean-up options and required recovery equipment;
- Mobilized recovery equipment and clean-up crew;
- Identify impacted area and excavate material until there is no further sign of contamination (visual and scent);

- Contaminated and potentially contaminated materials will be collected and stored in lined, water-proof bins, or covered (under and over) and placed in a secure area, 100 m from any watercourse, or as specified by Project environmental requirements;
- Areas surrounding the contained spill will be visually inspected for impacts and/or signs of contamination;
- All nearby watercourses will be visually inspected for impacts and/or signs of contamination;
- Soil quality testing may be required prior to the transport of materials to a registered facility for disposal;
- Impacted clean up equipment (adsorbent pads, booms, etc.) will be collected separately from contaminated soil and disposed of in accordance with Provincial regulations;
- All equipment used in the clean-up will be thoroughly cleaned;
- Replenish Emergency Spill Kit contents; and
- Remove and dispose of impacted material to a licenced treatment facility in accordance with Sustainable Development requirements. Transport of contaminated materials will be conducted in accordance with the requirements of the *Transportation of Dangerous Goods Act, 1992*. Waste docketts (Appendix H) and the Mid Canada Acceptance Form (Appendix I) will be collected and provided to Manitoba Hydro.

**Should contaminated soil be stored on-site other than in a hazmat bag; the soil stockpile will be lined and covered with plastic sheeting or stored in a manner ensuring it is protected from precipitation, stormwater runoff and vehicular traffic to prevent further impacted areas.*

5.3. Incident Reporting

Voltage will ensure notifications and the supplementary reports are completed in a timely manner.

All spills involving hazardous materials will be reported to the Voltage Construction Manager, Project Environmental Manager and/or Environmental Coordinator and subsequently communicated to our Manitoba Hydro representatives using a predetermined method and timeline.

The following information is required for notifications of releases of hazardous material to the environment:

- Contractor name;
- Date of incidents;
- Time of incidents;
- Root cause;
- Environmental impact;
- Substance released;
- Estimated amount;
- Estimated amount recovered;
- Procedure used for cleanup;
- Location of occurrence;
- Location of disposal;

- Distance to nearest waterbody;
- Description of the area and surrounding area;
- Specify if there is a fire associated with the spill; and
- Photographs.

5.4. Reportable Spills

A release is reportable under Canadian law if it meets or exceeds a quantity of a specific class of substance within a 24-hour period and has had a measurable effect to the air, soils, surface, or ground water. The person in charge must make a reasonable effort to notify any member of the public who may be adversely affected by the environmental emergency.

In the event of an accidental spill or release of a hazardous substance, that is equivalent to or greater than the quantities provided in the table below, Voltage will notify the appropriate agencies listed in (5.4) and provide a written report concerning the root cause, containment, remediation procedures, management and disposal in accordance with the *Canadian Environmental Protection Act, 1999*.

All spills of a reportable quantity will be reported to the Project Manager and Construction Manager, and Project Environmental Manager. The Project Environmental manager will notify Manitoba Hydro environmental department as soon as possible.

5.5. Emergency Contacts

The following table is filled out for each Voltage project. This ensures key environmental contacts are identified prior to the start of work.

Agency	Concern	Contact Number
Ministry of Environment Provincial Hotline	Spills	1-204-944-4888
Fisheries and Oceans Canada	Spills in Water	1-855-852-8320
CANUTEC	Transportation Spills	1-888- 226-8832
Sustainable Development	Report a Wildfire	1-800-782-0076

5.6. Reportable Quantities

Product	Class	Reportable Quantity
Engine Oil	non-regulated	30 L
Insulating Oil	non-regulated	100 L
Lubricating & Hydraulic Oil	non-regulated	50 L

Product	Class	Reportable Quantity
Antifreeze	non-regulated	50 L
Miscellaneous Products, Substances	9	50 kg
Explosives	1	Any Quantity
Flammable (aerosols, Propane)	2.1	100 L container capacity
Flammable, Non-toxic	2.1	100 L container capacity
Flammable Liquids	3.0	100 L container capacity

**All spills concerning the above fluids to water are reportable.*

6. Waste and Disposal

6.1. Guidelines and Facilities

Spills can generate a significant amount of waste that requires collection and disposal in accordance with the *Hazardous Waste Regulation, Man Reg 195/2015*.

Voltage will implement the following guidelines:

- Align regulatory requirements and Voltage practices;
- Use proper hazardous waste handling techniques;
- Identify potential waste management facilities that are approved to receive the quantity and type of wastes; and
- Acquire approval from Manitoba hydro to utilize these facilities.

The Voltage Waste Management Plan (Appendix C) provides the details for storage of hazardous material and other wastes. In general, all hazardous wastes will be segregated, classified, stored, and properly disposed at a licenced facility.

6.1.1. Licenced Hazardous Waste Disposal Facilities

Facility	Accepted Materials
GFL Environmental Inc. 1090 Kenaston Boulevard Phone: 204-987-9600	Used Oil, Oil Filters, Used Antifreeze Empty Oil Containers Batteries
Miller Environmental Corporation 1803 Hekla Avenue Phone: 204-925-9600	Used Oil, Oil Filters, Used Antifreeze Empty Oil Containers Batteries
Mid Canada Soil Treatment Facility 1373 Bernat Rd. (204) 878-2369	Hydrocarbon Impacted Soil

6.2. Contaminated Soil Disposal

The Mid Canada Material Acceptance Application Form (Appendix H) will be completed and Impacted material recovered from hydrocarbon spills on the Project will be brought to

Mid Canada Soil Treatment Facility - 1373 Bernat Rd., Grand Point, Mb. – (204) 878-2369

APPENDIX D: WASTE AND RECYCLING MANAGEMENT PLAN



Manitoba – Minnesota Transmission Line Project

B.6. Environmental Management Plan

Appendix D: Waste Management Plan



Table of Contents

1.1.	Purpose	2
1.2.	Legislative Requirements	2
1.3.	Responsibilities	3
1.4.	Training	3
1.4.1.	Hazardous Waste Training	3
1.5.	Characterizing Waste	4
2.	Waste Storage	5
2.1.	Non-Hazardous Waste	5
2.1.1.	Domestic Waste.....	5
2.1.2.	Construction Waste.....	5
2.2.	Hazardous Waste	6
2.3.	Inspection of Storage Sites	7
3.	Reduce/Re-Use/Recycle.....	8
3.1.	Reduce Waste.....	8
3.2.	Reuse Waste	8
3.3.	Recycling Waste.....	8
4.	Waste Disposal	9
4.1.	General Waste Disposal	9
4.1.1.	Licensed Waste Disposal Facilities	9
4.2.	Hazardous Waste Disposal.....	10
4.2.1.	Licensed Hazardous Waste Disposal Facilities	10
4.3.	Hazardous Waste Transportation.....	10
4.4.	Wastewater Disposal	11
4.4.1.	Licensed Waste Haulers	11
4.4.2.	Domestic Wastewater.....	11
4.4.3.	Grey Wastewater	11
4.5.	Documentation	11

1. Introduction

The Waste Management Plan (WMP) addresses waste reduction, recycling and re-use of materials, construction waste and hazardous waste management. Voltage promotes waste reduction and recycling/reuse programs over landfill waste management, wherever possible.

The WMP has been developed to provide guidance to Voltage employees and our subcontractors to address the impacts associated with wastes and raw material usage while ensuring compliance with our Clients requirements, industry best practices and legislation.

All wastes will be managed in accordance with applicable regulatory requirements and client standards, including but not limited to the Transportation of Dangerous Good Act. In general, arrangements for waste material haulers at approved waste receiving facilities and any required permitting, including registration as a waste generator with Manitoba Sustainable Development will be coordinated by Voltage. Procedures for documenting/tracking all wastes (domestic, reusable, recyclable, construction, hazardous) will be developed along and the following measures will be in place.

1.1. Purpose

The Waste Management Plan defines Voltages waste reduction and management strategies for domestic, construction and hazardous waste that may be present or produced throughout the Project. The purpose of the plan is to identify potential sources of waste and address waste management strategies to ensure compliance with Project requirements, industry best practices and Federal and Provincial Legislation.

Voltage and its subcontractors have a duty to manage on-site waste and raw materials in a manner that has the least amount of impacts to the environment. Although a range of different waste types can be generated, this document establishes procedures for storing, reducing, reusing, recycling, and disposal.

1.2. Legislative Requirements

Legislation regarding the transportation, handling and storage concerning waste include:

- *Workplace Hazardous Materials Information System (WHMIS) RRO 1990, Reg 860* made under the *Occupational Health and Safety Act* states that training is legally required for all employees who are exposed or likely to be exposed to a hazardous material or controlled product at the workplace;
- *Onsite Wastewater Management Systems Regulation, MR 83/2003* outlines the requirements for handling, transport and disposal of liquid waste generated from the Project;
- The *Canadian Environmental Protection Act, 1999* requires that when an environmental emergency occurs, any person who owns or has the charge or control of the substance immediately before the emergency will notify an enforcement officer; and
- The *Dangerous Goods Handling and Transportation Act, CCSM c D12* requires reporting dangerous goods incidents by Road, Rail or Marine which meet or exceed established reporting criteria listed in the Transportation of Dangerous Goods Regulations.

1.3. Responsibilities

The Waste Management Plan forms an integral component of the Voltage Environmental Management Plan (EMP) which provides the framework for managing environmental protection measures on our Projects. Voltage is responsible for:

- The management of Project produced wastes comply with the procedures within the Waste Management Plan and industry best practices and Federal and Provincial Legislation;
- Responding immediately to resolve any issues of non-conformance/non-compliance;
- Ensuring that all employees and contractors are adequately trained and informed of the risks and requirements regarding the management of Project wastes in relation to their duties;
- Acquiring and providing Manitoba Hydro with a Hazardous Waste Generators Licence;
- Providing Manitoba Hydro, a list of licenced disposals and recycling facilities and receiving prior approval prior to use;
- Ensuring that only trained staff handle hazardous wastes;
- Maintaining an accurate log of waste generated from the project and providing these records to Manitoba Hydro at weekly meetings;
- Maintain an accurate database regarding waste transport and disposal and providing manifests to Manitoba Hydro at weekly meetings; and
- Ensuring that adequate equipment and materials are available to safely store, segregate and manage wastes.

1.4. Training

Employees will be trained and provided with the necessary information pertaining to company procedures and legislative requirements for the transportation, storage, handling and disposal of Project wastes. Training will cover safety procedures, TDG requirements, Workplace Hazardous Materials Information System (WHMIS), MSDS (SDS) and site-specific environmental training which includes legislative requirements and Project licence overview.

1.4.1. Hazardous Waste Training

Voltage will ensure all employees involved in the transportation, storage and handling of Hazardous Wastes will receive the appropriate (TDG) ground, MSDS (SDS) and WHMIS training.

Training regarding hazardous waste will include:

- Hazardous substances handling, storage, and transportation procedures;
- TDG requirements and handling responsibilities;
- WHMIS training in accordance with provincial legislation;
- Descriptions of the 9 classes of dangerous goods risk groups;
- Dangerous goods requirements accompanied by Material Safety Data Sheet and WHMIS training; and
- Responsibilities within the Voltage Emergency Response Plan and Spill Response Plans.

1.5. Characterizing Waste

Appropriate characterisation of waste materials will enable Voltage and its contractors to properly identify which materials are categorized as waste and which are likely classed as non-waste and can be re-used/recycled.

Category	Items	Disposal
Hazardous Material	Waste oil, fuel, used oil filters, contaminated soil, coolants, solvents, Equipment/Vehicle Batteries	Treatment at a Licenced Treatment Facility
Domestic Solid Waste	Organic material, non-recyclable wastes, wood poles, geotech fabric, treated wood	Possible Re-Use or Licenced Waste Disposal Facility
Construction Materials	Aluminum, steel, plastic, concrete,	Re-Use and/or Recycle facility
Wastewater	sewage and greywater	Treatment facility
Food Services	drink containers, cardboard, plastics	Recycle facility
Office Wastes	Electronics, general batteries, paper, cardboard	Recycle facility

2. Waste Storage

The proper storage and containment of waste is important for the protection of air, land, and water from contamination. All waste storage facilities will be designed in such a manner that any potential loss is minimized. Adequately sized containers will be available within the Project to enhance landfill avoidance strategies and to ensure safe storage and disposal of materials.

Waste storage will be governed by two standard principles:

1. Segregation of different waste types to facilitate disposal and/or recycling.
2. Segregation and containment of hazardous wastes to prevent a pollution incident.

2.1. Non-Hazardous Waste

All Voltage employees will respect the three 'Rs' (reduce, re-use and recycle) where applicable. Storage bins will be provided for both solid waste and recyclable non-hazardous materials. All material will be stored in a manner where it does not present a safety or environmental risk. Signage will be established to clearly identify the type of material that is acceptable for each receptacle.

Voltage will include the following measures for management of non-hazardous wastes:

2.1.1. Domestic Waste:

- Implement a waste recycling and reduction program on the Project to reduce the amount of waste that is generated;
- Paper, plastics, glass, tins, scrap metal, food and other recyclable materials will be collected in labelled, wildlife proof receptacles and recycled and/or disposed of at a registered facility;
- Appropriately sized and labelled recycling containers will be made available in site offices and on-site in order to promote landfill avoidance strategies;
- Procedures for waste minimization, reuse, recycling, storage, and disposal, will be developed and shared with all staff; and
- Waste will be collected at regular intervals to avoid the overflow of waste and attraction of wildlife.

2.1.2. Construction Waste:

- Identify the appropriate waste facilities and transporters (industrial and domestic) that will dispose of Project generated waste appropriately (4.1).
- Any waste material that cannot be recycled will be disposed of at a licenced waste disposal site, in compliance with Provincial requirements;
- Provide portable, secure, solid waste receptacles at temporary laydown/storage areas and construction camps, and empty them regularly; and

- Different waste streams will be segregated to facilitate disposal and reuse/recycling using designated areas or containers that are clearly labelled and separated by its characterization.

2.2. Hazardous Waste

Hazardous waste includes dangerous goods that are no longer used for their original purpose, which include substances that are intended for recycling, treatment, or disposal, or in storage, or transit before recycling, treatment or disposal.

Hazardous Waste will be stored in a designated area which prevents unauthorized access and is appropriately signed to identify the area as hazardous waste storage. Hazardous wastes will be stored and handled in a manner that prevents loss and includes secondary containment. Waste streams will be separated and properly signed to identify its contents. The storage area should be set up in a manner that facilitates recovery in the event of a spill.

In order to achieve this, Voltage will include the following practices for managing hazardous waste:

- The Waste Management Plan will be reviewed with all staff and subcontractor's staff;
- Share the WMP with all staff and sub-contractor's staff and ensure that all individuals understand the Plan and are aware of the environmental risks associated with products and wastes on site;
- SDS sheets will be in a known, visible, accessible location for easy reference;
- Types and quantities of hazardous materials that will be used or generated at the Project site will be estimated and used to plan how waste will be stored, handled, and disposed of consistent with all applicable regulatory requirements;
- Structures used to store hazardous waste will be made to withstand all weather conditions and will meet all safety, environment and fire protection requirements;
- Hazard signs will be used at storage locations to identify the nature of materials being stored;
- Hazardous material will be labelled according to WHMIS requirements;
- All bulk storage containers will be contained in designated areas and be covered to prevent precipitation from entering;
- All hazardous waste storage sites will be located a minimum of 100m from any waterbody, wetland or Environmentally Sensitive Site (ESS);
- Used oil storage areas will be equipped with the appropriately sized Emergency Spill Kit;
- Ensure that a Hazardous Materials Manifest is maintained for all hazardous products and wastes generated at the project site;
- Ensure that all staff have been trained in WHMIS and TDG;
- Hazardous waste storage tanks will be protected from internal and external damage, corrosion, fire, heat which might cause the storage tank to fail which could result in personal or environmental damage;

- Records of all hazardous waste generated, transported, stored or disposed will be retained and provided to Manitoba Hydro; and
- In the event of a release the Spill Response Plan (Appendix C) will be followed.

2.3. Inspection of Storage Sites

Waste Storage inspections will occur on a regular basis to ensure the following:

- Wastes are being segregated based on waste characteristics;
- Storage of hazardous wastes are located on impermeable surfaces that includes secondary containment system, with 110% capacity of the container;
- There is no cross contamination of materials (e.g. hazardous and nonhazardous or wood and metal etc.);
- Wastes are contained in covered containers which are protected from the elements;
- Containers are being filled fully prior to removal;
- Waste documentation is being retained.

Storage containers used to store hazardous waste must be:

- Containers are fit for purpose (i.e. Adequately sized and structurally sound);
- Containers containing hazardous materials are properly labelled (SDS and placarded) identifying its contents;
- In good condition and free of any signs of leaks;
- Protected from weather;
- Compatible with the materials being stored to avoid corrosion or chemical reactions that could result in fire;
- Kept closed except when adding waste;
- Not opened, handled, or stored in any way that could result in the leaks or ruptures;

3. Reduce/Re-Use/Recycle

Voltage is committed to responsible resource management by reducing the amount of waste and reinforcing our reduce-reuse-recycle program. The reduce-reuse-recycle program is intended to minimize the amount of waste generated by limiting the amount of waste transferred to landfills.

3.1. Reduce Waste

Voltage will make every reasonable attempt to reduce the amount of waste produced through the Project by ensuring building materials ordered are the correct size and volume needed for work. Excess materials will be returned to the supplier when possible or utilized on other projects. New materials will not be purchased if there are existing materials available throughout the Project that can be utilized.

3.2. Reuse Waste

Voltage will reuse materials and parts where possible by cleaning and repairing to allow reuse in other applications. Used formwork (wood) will be re-used whenever possible or re-purposed for secondary functions. At the end of life, used formwork will be disposed of as construction waste at a registered waste facility. Voltage will keep an inventory of materials in order to identify suitable reuse opportunities.

Certain reuse activities require Manitoba Hydro approval (i.e.; timber salvage, spoil piles) either within the project itself, or with local landowners. Voltage will ensure approval has been provided by Manitoba Hydro and that procedures for the traceability of materials have been established prior to materials being offered to landowners and local communities.

3.3. Recycling Waste

Recycling is a key component of the Voltage Waste Management Plan and is the third component of the "Reduce, Reuse, and Recycle" waste hierarchy. Voltage will isolate recycled materials by segregating where practicable (metal cans and plastic bottles) allowing them to be converted into a new substance or product thereby reducing the quantity of wastes requiring disposal. To the extent practical, construction materials will be purchased in totes, drums or containers that can be returned to the vendor.

Voltage will ensure:

- Voltage will attempt to recycle items that can be recycled;
- Recycling bins are available at our work sites and storage yards;
- Recycling opportunities are identified prior to beginning our projects; and
- Recycling storage areas will be separated and identifiable at waste storage areas.

4. Waste Disposal

4.1. General Waste Disposal

Characterization of waste streams is required to determine if wastes will be acceptable at recycling facilities or will require disposal at a waste disposal site. Only approved disposal sites will be used for the disposal, transfer or treatment of waste from the Project. Checks will be made to ensure that it covers the type of waste to be disposed. Voltage has identified the following waste disposal sites as potential sites that will be utilized on the Project and the materials they will accept.

4.1.1. Licenced Waste Disposal Facilities

Waste Disposal Site Location	Accepted Materials
Brady Landfill 1777 Brady Rd, Winnipeg, MB	Clean fill - Soil, Clay, or Concrete Wood, Geofabric, Broken Pallets, Household waste
Lorette Waste Management 23 MB-206, Lorette, MB	Clean fill - Soil, Clay, or Concrete Wood, Geofabric, Broken Pallets, Household waste
Steinbach Landfill 104 Hanover Rd E, Steinbach, MB	Clean fill - Soil, Clay, or Concrete Wood, Geofabric, Broken Pallets, Household waste
RM of Stuartburn 38045 Road 8N	Clean fill - Soil, Clay, or Concrete Wood, Geofabric, Broken Pallets, Household waste
RM of Emerson Franklin Transfer Station SE22-2-4E, North of P.R. 201 and RD 22E	Clean fill - Soil, Clay, or Concrete Wood, Geofabric, Broken Pallets, Household waste

4.2. Hazardous Waste Disposal

Wastes that are classified as hazardous present a greater danger to human health and the environment than other waste material as a result of their specific chemical, physical and biological properties. Hazardous waste will be disposed in a way that complies with the *Canadian Environmental Protection Act, 1990* and the *Hazardous Waste Regulation, Man Reg 195/2015*.

4.2.1. Licensed Hazardous Waste Disposal Facilities

Facility	Accepted Materials
GFL Environmental Inc. 1090 Kenaston Boulevard Phone: 204-987-9600	Used Oil, Oil Filters, Used Antifreeze Empty Oil Containers Batteries
Miller Environmental Corporation 1803 Hekla Avenue Phone: 204-925-9600	Used Oil, Oil Filters, Used Antifreeze Empty Oil Containers Batteries
Mid Canada Soil Treatment Facility 1373 Bernat Rd. (204) 878-2369	Hydrocarbon Impacted Soil

4.3. Hazardous Waste Transportation

To prevent unauthorized transport of waste, Voltage employees and their subcontractors will comply with Duty of Care requirements set out in the *Transportation of Dangerous Goods Act* and supporting Regulations.

Voltage will utilize licensed hazardous waste carriers to transport hazardous waste. Hazardous Waste carriers must possess a "hazardous waste carrier licence" issued by Manitoba Sustainable Development. Licenced waste carriers are required to complete the appropriate paperwork (Appendix H) for the waste being transferred. All disposal of hazardous waste will be through licensed disposal facilities. A copy of all Waste Dockets and Material Acceptance Forms will be retained and provided to the Client upon request.

4.4. Wastewater Disposal

All wastewater generated will be handled in accordance with *the Environment Act, c.c.s.m. c. E125* and the *Onsite Wastewater Management Systems Regulation, MR 83/2003* requirements. Voltage will utilize licenced waste haulers with approved vehicles for the removal of all domestic and grey wastewater throughout the Project.

4.4.1. Licenced Waste Haulers

Company	Location	Provincial Registration #
Rene's Septic Services	Steinbach, Mb.	H-0152
Steinbach Hydrovac Ltd.	Steinbach, Mb.	H-0291
Mel's Septic Service	Niverville, Mb.	H-0209
Jim's Septic Service	Grunthal, Mb.	H-0081
Metrow's & Rolly's Septic Service	Lorette, Mb.	H-0311

4.4.2. Domestic Wastewater

Wastewater from toilets at temporary construction camps and portable sanitation facilities at work sites will be collected by a licenced hauler in approved vehicles and hauled to existing licenced wastewater treatment plants or wastewater disposal facilities designed to accept this type of waste as per *Onsite Wastewater Management Systems Regulation, MR 83/2003*.

4.4.3. Grey Wastewater

Grey water will be collected by a licenced hauler in approved vehicles and hauled to existing licenced wastewater treatment plants or wastewater disposal facilities designed to accept this type of waste as per *Onsite Wastewater Management Systems Regulation, MR 83/2003*.

4.5. Documentation

The list below identifies the documentation Voltage will generate and retain as part of its waste program:

- Amounts of waste generated within the Project and receipts from disposal facilities;
- Waste Dockets including Waste Carriers Registration Number for Hazardous Waste Disposal and Liquid Waste Disposal; and
- Waste Acceptance Forms from Mid Canada Soil Treatment Facility.

APPENDIX E: EROSION AND SEDIMENT CONTROL PLAN



Manitoba – Minnesota Transmission Line Project

B.6. Environmental Management Plan

Appendix E: Erosion and Sediment Control Plan



Table of Contents

1. Introduction	2
1.1. Purpose	2
1.2. Roles and Responsibility	2
1.2.1. Environmental Coordinator	2
1.2.2. Project Environmental Manager	3
1.3. Legislation	3
1.4. Training	3
2. Erosion and Sediment Controls Guidelines.....	4
2.1. Causes of Erosion.....	4
2.2. General Guidelines	4
The General Erosion and Sediment Control site measures will include	4
2.3. Silt Fence.....	5
2.4. Straw Wattles.....	5
2.5. Seeding	6
2.6. Dewatering Bags.....	6
3. Construction Guidelines	7
3.1. Soil Management	7
3.2. Surface Water	7
3.3. Inspection and Maintenance	8

1. Introduction

The Erosion and Sediment Control Plan (ESC) is intended to be used as a guideline for employees on erosion and sediment control applications, best management practices, construction requirements, as well as, outlining applicable Legislation and other environmental requirements and guidelines. The Erosion and Sediment Control Plan identifies Voltage's procedures and outlines erosion and sediment control measures that Voltage employees and our subcontractors will utilize during the project to address impacts and ensure compliance.

1.1. Purpose

The purpose of the Erosion and Sediment Control Plan is to summarize acceptable work practices with a goal of controlling sediment and erosion and minimize the impacts caused by construction throughout the Project.

The purpose of an Erosion and Sediment Control Plan is to:

- Minimize the potential for erosion by effective planning, procedures and water management techniques;
- Apply erosion control measures to prevent mobilization of sediment when necessary; and
- Apply sediment control measures to prevent sediment release.

Voltage will take the necessary steps to control sediment and erosion by:

- Implementing and training employees in the Erosion and Sediment Control Plan;
- Ensuring employees are aware of the requirements prior to conducting work; and
- Continually monitoring controls to ensure its effectiveness.

1.2. Roles and Responsibility

Voltage has both a legal and social responsibility to manage and minimize erosion and sedimentation generated from our construction activities. Voltage employees are responsible for incorporating environmental protection, complying with legislation, and adhering to contract/permit requirements. Voltage employees and Voltage environmental staff will work together to ensure environmental protection and contractual commitments have been met throughout our projects. The provisions of this plan are applicable to all facilities and construction sites managed and operated by Voltage and its Subcontractors.

1.2.1. Environmental Coordinator

The Environmental Coordinator will ensure:

- All Environmentally Sensitive Sites (ESS) have been identified and flagged in the field to limit the amount of ground disturbance within these areas;
- Oversee sensitive work within these areas to ensure environmental protection is maintained;
- Inspect and monitor controls regularly to ensure their effectiveness; and

- Identify non-compliance/conformance and remedy the issue immediately and communicate occurrence to Manitoba Hydro.

1.2.2. Project Environmental Manager

The Project Environmental Manager will ensure:

- Procedures are implemented, and staff are trained in the project specific requirements; and
- Notifications and reporting to the Client and, if applicable, regulatory agencies are completed in a timely manner.

1.3. Legislation

The primary piece of legislation that protects waterbodies from erosion and sediment events is the Federal *Fisheries Act, 1985*.

Within the Act, it is an offense to deposit a deleterious substance into waters frequented by fish and to carry out activities that result in the harmful alteration, disruption or destruction fish habitat. Sediment that is added to waters has the potential to harm fish and their habitat and thereby contravene these provisions of the Fisheries Act.

1.4. Training

Erosion and Sediment Control training will be undertaken in accordance with commitments identified in the Voltage Environmental Management Plan ensuring employee competency. Regular toolbox talks will also be conducted and include erosion and sediment control principles and regulatory requirements. The goal is to increase awareness of any erosion and sediment control issues that has the potential to occur during the project.

2. Erosion and Sediment Controls Guidelines

There are numerous options available that help prevent and/or mitigate the effects of erosion and sedimentation. Erosion and Sediment Control (ESC) will be installed prior to starting construction activities in areas of identified environmental sensitivities. Additional ESC measures will be included into site-specific plans, as required, based on field observations. Voltage will utilize a range of Erosion and Sediment Control measures depending on site specific characteristics. Site specific plans will be developed as required to address Project site ESC. Whenever feasible, natural materials will be selected over unnatural materials.

2.1. Causes of Erosion

There are numerous construction activities that have the potential to contribute to or cause erosion and sedimentation on job sites.

The following is a list of potential causes:

- Clearing of vegetation;
- Soil compaction;
- Backfilling;
- Watering of sites;
- Grading;
- Wind;
- Vehicle traffic; and
- Movement from Heavy machinery.

2.2. General Guidelines

The General Erosion and Sediment Control site measures will include:

- Install, monitor, and manage appropriate erosion and sedimentation control measures to minimize and/or avoid sediment mobilization to drainages, or waterbodies;
- ESC measures, such as silt fence and wattles, will be installed prior to the commencement of work to prevent sediment from entering any nearby water bodies and soil-disturbed areas.
- Ensuring adequate and appropriate erosion and sedimentation control materials (silt fencing, straw wattles and geotextiles/tarps) are on-site and available prior to commencement of construction;
- Planning construction activities to occur under suitable dry or frozen conditions, if possible;
- Natural vegetation buffers will be maintained. Removal of riparian vegetation will be avoided whenever possible.
- Disturbed areas will be re-shaped with existing contours as soon as practical; and
- Replacement of topsoil and subsoils with the original site characteristics as soon as practical after construction.

- Measures will be introduced to manage water flowing onto the site and water pumped or diverted off-site to ensure all sediments are removed prior to leaving the site;
- Installing Erosion and Sediment Control measures immediately upon the identification of a need;
- Minimizing the clearing of vegetation and grubbing of soil to reduce the amount of bare soil;
- Spreading mulch or native vegetation over sites to as soon as practicable after construction to reduce rain caused erosion and stabilize disturbed soils; and
- Utilizing straw/hay bales to intercept and slow sheet flow and promote deposition of sediment.

2.3. Silt Fence

Silt fence is a temporary way of providing perimeter protection around streams, lakes and other watercourses by preventing the movement of soil, sediments and other contaminants from soil-disturbed areas.

The following are general guidelines for the installation of silt fence:

- Silt fence is best installed using an excavated trench. When conditions or landscape do not allow for the use of heavy equipment, digging the trench using a shovel will suffice;
- Ensure a minimum of 6 inches of fabric is buried within trench and fabric side is facing the disturbed area;
- The height of the fence should not be greater than 1 m above ground;
- Wooden stakes are preferable, however, where rock or other hard surfaces prevent the penetration of wood, metal stakes are available.;
- Once installed, ensure trench is back filled and compacted;
- Regular inspections of silt fence should occur, particularly before and after heavy rainfall events; and
- Remove the fence in a manner that prevents the release of the contained sediment into the protected area.

2.4. Straw Wattles

Straw wattles provide protection to sensitive areas such as streams, rivers and drainage ditches by reducing erosion and slowing down aboveground water velocities. Wattles work by shortening the slope length, reducing water flow velocities and trapping sediment on site. Straw wattles are used in areas where ground disturbance has occurred (i.e. removal of topsoil, vegetation clearing, etc.) or where there is risk of soil being dislodged and carried off site (i.e. riverbanks). Proper installation is essential to effective use.

The following is a brief installation guide:

- Dig a trench 3-4" deep with a slight downslope (to prevent ponding);
- Lay the wattle in trench firmly, ensuring that it sits evenly;
- Anchor the wattle by driving wooden stakes through the netting, into the ground;
- Ensure one stake is secure at both ends of wattle; and

- Ensure that a minimum of 5, equally spaced stakes are used per 10 m of length on the downhill side of the wattle in order to support any accumulated weight.

2.5. Seeding

Naturally occurring vegetation is an important characteristic that prevents the erosion and sedimentation of banks, ridges, hillsides and riparian areas. Spreading seed over disturbed areas is integral in the reclamation process after a project is complete to re-vegetate.

Vegetation creates ground stability, therefore seeding can be an effective means of avoiding sedimentation of nearby watercourses. Native vegetation will be used for seeding wherever possible. By planting native vegetation, the risk of introducing an invasive species is eliminated and the potential of long-term success of re-vegetation is enhanced.

2.6. Dewatering Bags

Dewatering bags are a filtration method for the removal of sediment laden water. Site water is pumped from the polluted site into the bag where the sediment is contained while allowing the filtered water to pass through. These bags come in a variety of sizes and act as a means of trapping sediment from polluted sites and slowing down water velocities during dewatering activities.

3. Construction Guidelines

Apart from the physical installation of Erosion and Sediment Control measures, Voltage will also utilize environmentally responsible construction practices to provide mitigation.

These General construction practices include:

- Construction activities will be planned, when possible, to occur under suitable dry or frozen conditions;
- Utilizing riparian setbacks/buffer zones in and around wetlands/waterbodies;
- Existing vegetation will be retained, and low impact clearing methods will be utilized to maintain the integrity of the soil;
- Ground disturbance will be minimized by flagging/staking the construction footprint and access points;
- Implementing a no machine zone around all identified waterbodies to reduce potential ground disturbance and damage to vegetation except at crossing locations;
- Disturbance of root systems during clearing will be minimized to extent possible to maintain soil integrity; and
- Gravel pads constructed or graded will be done in a manner where water drains away from all waterbodies, riparian buffer, and wetlands.

3.1. Soil Management

Soil management will be applied for all areas with a potential for erosion and sediment movement. Soil management consideration will include the following:

- Stockpiles will be placed on stable level ground and be above the high-water mark to minimize soil displacement;
- Minimize the duration that soil is left exposed through progressive ground cover revegetation; and
- In environmentally sensitive areas, soil stockpiles will be stabilized by using tarps and geotextiles to limit exposure to heavy rains.

3.2. Surface Water

Surface water has the potential to increase sediment, damage surrounding vegetation, disturb fish habitat and have other adverse environmental effects. During construction it is not always possible or practical to provide surface cover for all disturbed areas. Commonly used methods for controlling surface water include the modification of slope surfaces, the reduction of slope gradients, controlling flow velocity, diverting flows around the affected area, and providing upstream storage for runoff.

Voltage will implement the following work practices to minimize any adverse effects:

- Drainage and sediment control will be prioritized based on the proximity to sensitive site;
- Surface run-off will be minimized using erosion and sediment control techniques in areas of Environmental Sensitivity;

- Diversion berms or drainage ditches will be created in areas with exposed slopes to direct run-off through vegetated areas away from waterbodies and wetlands;
- Silt fences will be installed when deemed appropriate to retain sediment on-site and reduce run-off velocities;
- Drainage activities will be diverted through vegetated areas or a means of slowing the velocity of water flow to limit erosion and sediment creation; and
- Work will be performed under suitably dry or frozen ground conditions.

3.3. Inspection and Maintenance

- Regular inspections and maintenance of ESC measures must be conducted to ensure its effectiveness and any required repairs will be done immediately;
- Monitor wetlands/waterbodies and erosion and sediment controls on a regular basis particularly after significant rainfall events; and
- Erosion protection and sediment control installations shall only be removed after disturbed areas are protected.

APPENDIX F: BIOSECURITY MANAGEMENT PLAN



Manitoba – Minnesota Transmission Line Project

B.6. Environmental Management Plan

Appendix F: Biosecurity Management Plan



Table of Contents

1. Introduction	2
1.1. Purpose	2
1.2. Legislative Requirements	2
1.3. Roles and Responsibilities	2
1.4. Training	3
2. Equipment Cleaning	4
2.1. Rough Cleaning	4
2.2. Fine Cleaning	4
2.3. Disinfecting	4
2.4. Inspection	4
3. Biosecurity Risk Levels	5
3.1. Low Risk	5
3.2. High Risk	5
3.3. Winter Condition Modifier (WCM)	5
4. Cleaning Procedures Based on Risk Level	6
4.1. Cleaning at Low Risk Sites	6
4.1.1. Low Risk Sites (Summer)	6
4.1.2. Low Risk Sites (Winter)	6
4.2. Cleaning at High Risk Sites	6
4.2.1. High Risk Sites (Summer)	6
4.2.2. High Risk Sites (Winter)	7
5. Cleaning Stations	8
5.1. Biosecurity Signage	8
5.2. Biosecurity Waste	8
6. Cleaning Documentation	9
6.1. Pre-Project	9
6.2. Daily	9
7. Appendix A	10
8. Appendix B	11

1. Introduction

Voltage Power (Voltage) is committed to protecting and preserving all environmental aspects that may be affected during construction on our projects. We believe in working in an environmentally responsible manner that exceeds the social, economic, and environmental expectations of our clients and stakeholders.

This Biosecurity Management Plan has been developed to provide guidance to Voltage Power employees and our subcontractors on the responsibilities and actions required to protect agricultural land from pests and diseases on the project.

1.1. Purpose

Voltage employees and our subcontractors have an obligation to manage our work in a manner that has the least amount of negative impacts to the environment. The purpose of the Biosecurity Management Plan is to ensure employees entering/exiting and travelling between parcels of agricultural lands are adhering to the required cleaning protocols to protect against the spread of noxious weeds and diseases that may be found on agricultural lands.

1.2. Legislative Requirements

Within Manitoba there is no specific legislation regarding biosecurity for activities taking place on agricultural lands.

- The Noxious Weeds Act, C.C.S.M. c. 38 and the Noxious Weeds Regulation (42/2017) provides a list of weeds designated as tier 1, tier 2 and tier 3 based of their prevalence, distribution and invasiveness.

1.3. Roles and Responsibilities

The Voltage Power Environmental Management Plan (EMP) provides guidance to staff and the framework for achieving environmental protection on our projects. The Biosecurity Management Plan forms an essential component of the EMP.

Within the context of the Biosecurity Management Plan, Voltage Power is accountable for:

- Ensuring all staff have been adequately trained and understand the requirements of the Biosecurity Management Plan;
- Ensuring all staff and activities comply with Manitoba Hydro's Biosecurity Management Plan and responding quickly to resolve any issues of non-compliance;
- Ensuring all equipment arriving to the project has been thoroughly cleaned and the required documentation has been completed and submitted to Manitoba Hydro;
- Ensuring areas identified as requiring cleaning have been set up with adequate supplies and facilities to allow workers to achieve the required cleaning and disinfecting requirements;
- Ensuring all access points possess the proper signage which indicates the level of cleaning required to enter/exit site; and

- Ensuring employees entering onto agricultural lands are completing and submitting the required cleaning and vehicle inspection forms within the required timeframes.

1.4. Training

Voltage Power will ensure all staff working on the Project have received the appropriate level of Biosecurity training. This will include a knowledge of cleaning procedures and required project documentation. Topics discussed during training will include: the objectives of the Biosecurity Management Plan, low risk cleaning protocols, high risk cleaning protocols, and an overview of documents that are required to be completed. Training logs will be retained and provided to Manitoba Hydro upon request.

2. Equipment Cleaning

Equipment cleaning is a critical component to the agricultural protection as it reduces the likelihood of soil and manure transport which contain organisms of concern from one field to the next. Vehicles and Equipment that will be used on the Project will be thoroughly cleaned and inspected prior to arriving to ensure they are free of soil/ seeds/ debris. Manitoba Hydro Equipment Cleaning Record Form (Appendix A) will be completed for each vehicle/equipment and submitted to Manitoba Hydro prior to being mobilized onto the Project ROW.

Vehicles/Equipment will also require inspections and possibly either rough or fine cleaning depending on the shape of equipment, time of year and biosecurity risk when moving from one parcel of land to another within the Project.

The application of disinfectant may also be required after the initial cleaning occurs. These steps will provide the required protection of crops and farmlands for the duration of the Project.

2.1. Rough Cleaning

Rough cleaning is the removal of soil, plant material or crop debris using hand tools such as brooms, brushes, scrapers and shovels. Rough cleaning will occur on-site before leaving the cleaning area.

This step in the cleaning of mats, vehicles and equipment must occur on-site before leaving the controlled access zone to a off-project washing facility.

2.2. Fine Cleaning

Fine cleaning involves the use of high-pressure air, hot water or steam to remove accumulated soil, plant material or crop debris. The emphasis will be on High Risk areas of vehicles/equipment where heavy concentrations of soil or crop debris has accumulated (tires, tracks, wheel wells, etc.).

A rough clean should be conducted prior to fine cleaning to reduce the amount of time and water required.

2.3. Disinfecting

Disinfecting of vehicles/equipment is the final step when working in a controlled access zone where the risk level is High. Matting, vehicles and equipment should receive a fine clean prior to the application of disinfectant.

Disinfecting requires the use of a substance that destroys the spores of clubroot and crop diseases. Disinfectants will be a 1-2% virkon solution or 4ml per litre of water to synergize solution if required by the local landowner. The disinfectant solution will be misted on rough cleaned and fine cleaned areas of equipment that have contacted soils.

2.4. Inspection

Vehicles/Equipment require a final visual inspection and the required Biosecurity Cleaning Record documentation which indicates the level of cleaning that was applied prior to leaving washing area.

3. Biosecurity Risk Levels

3.1. Low Risk

Low Risk Biosecurity land classification is one where the potential introduction of a biosecurity concern is not anticipated due to there being no presence of a known biosecurity risk (soil borne disease or the presence of tier 2 and tier 3 weeds) having been identified through the pre-assessment surveys.

3.2. High Risk

High Risk Biosecurity land classification is one where there is an immediate threat or loss that could occur to crops or livestock due to the introduction of new pests or the increase of existing pests within a specified area.

3.3. Winter Condition Modifier (WCM)

During winter conditions when the ground conditions are frozen and there is adequate snow cover to provide a barrier between equipment and the ground, a Winter Condition Modifier (WCM) can be applied to reduce the risk level and cleaning requirements required for a given area. Voltage environmental staff will work with Manitoba Hydro in assessing work areas and implementing the required changes as they occur.

4. Cleaning Procedures Based on Risk Level

The following outlines the cleaning protocols Voltage Power will employ while entering/exiting Low and High-Risk agricultural sites.

4.1. Cleaning at Low Risk Sites

4.1.1. Low Risk Sites (Summer)

- If possible, work will be scheduled to be completed during winter months where ground conditions are frozen and there is a barrier from snow between vehicles/equipment and soil;
- Stop at access upon entrance/exit – perform visual inspection of vehicle/equipment - No soil/seeds - proceed on/off site;
- Stop at access upon entrance/exit – perform visual inspection of vehicle/equipment - soil/seeds present - Rough clean (using broom/shovel to knock off soil/seeds) - Proceed on/off site;
- Operators of vehicles/equipment will complete the Biosecurity Cleaning Record Form prior to entering/exiting the wash site.

4.1.2. Low Risk Sites (Winter)

- If possible, work will be scheduled to be completed during winter months where ground conditions are frozen and there is a barrier from snow between vehicles/equipment and soil;
- Stop at access upon entrance/exit – perform visual inspection of vehicle/equipment - **No soil/seeds** - proceed on/off site;
- Stop at access upon entrance/exit – perform visual inspection of vehicle/equipment - **soil/seeds present** - Rough clean (using broom/shovel to knock off soil/seeds) - Proceed on/off site;
- Operators of vehicles/equipment will complete the Biosecurity Cleaning Record Form prior to entering/exiting the wash site.

4.2. Cleaning at High Risk Sites

4.2.1. High Risk Sites (Summer)

- If possible, areas of identified noxious weeds or soil borne pathogens will be avoided by utilizing alternate accesses;
- If possible, work will be scheduled to be completed during winter months where ground conditions are frozen and there is a barrier from snow between vehicles/equipment and soil;
- Stop at entrance/exit – perform visual inspection of vehicle/equipment - **No soil/seeds present**- Apply disinfectant - Proceed on/off site;

- Stop at entrance/exit – perform visual inspection of vehicle/equipment – **soil/seeds present** – Rough clean (broom shovel, scrapers) - **No soil/seeds remaining** - Apply disinfectant - Proceed on/off site;
- Stop at entrance/exit – perform visual inspection of vehicle/equipment – **soil/seeds present** – Rough clean (using broom/shovel to knock off soil/seeds) - **soil/seeds remaining** – Fine Clean (pressure washer/compressed air) - Apply disinfectant - Proceed on/off site;
- Operators of vehicles/equipment will complete the Biosecurity Cleaning Record Form prior to entering/exiting the wash site.

4.2.2. High Risk Sites (Winter)

- If possible, areas of identified noxious weeds or soil borne pathogens will be avoided by utilizing alternate accesses;
- If possible, work will be scheduled to be completed during winter months where ground conditions are frozen and there is a barrier from snow between vehicles/equipment and soil;
- Stop at entrance/exit – perform visual inspection of vehicle/equipment - **No soil/seeds**
- Apply disinfectant - Proceed on/off site;
- Stop at entrance/exit – perform visual inspection of vehicle/equipment – **soil/seeds remaining**- Rough clean (using broom/shovel to knock off soil/seeds or Fine clean using compressed air) - Apply disinfectant - Proceed on/off site;
- Operators of vehicles/equipment will complete the Biosecurity Cleaning Record Form prior to entering/exiting the wash site.

5. Cleaning Stations

Voltage Power will work with Manitoba Hydro and determine controlled access points, transition zones, and cleaning station locations based on field risk levels and cleaning prescriptions.

Cleaning stations will be installed at identified locations for:

- Rough Cleaning; and
- Fine Cleaning.

All cleaning stations will have signage that indicates the level of required cleaning and will include the access ID number.

5.1. Biosecurity Signage

Signage will be installed at all controlled access/exit points and on field transition zones prior to beginning construction on the Project. Signage will indicate the required cleaning requirements for a specific work area. Signage will be updated as changes occur throughout the Project. Signage will remind workers to review project documentation (MB Hydro Map books, Project Site Classification Spreadsheets, etc.).

5.2. Biosecurity Waste

Materials released from the washing process will be fully contained (i.e., sump pit, berm). Excess material from the cleaning operations (soil/seeds/debris, water and disinfectant) will be:

- Removed from site and disposed at a Manitoba Hydro pre-approved licenced waste disposal facility;
- If landowner permission is granted, excess material may be mixed and then buried on-site at a minimum depth of 2 m and at least 10m from any drain/drainage ditch.

6. Cleaning Documentation

6.1. Pre-Project

Vehicles/Equipment will be thoroughly cleaned prior to arriving to the project to ensure they are free of soil/ seeds/ debris. Manitoba Hydro Equipment Cleaning Record Form (Appendix A) will be completed prior to Vehicles/Equipment being mobilized onto the Project and submitted electronically to Manitoba Hydro via: TLC.AgriculturalBiosecurity@hydro.mb.ca

6.2. Daily

Equipment/Vehicles/Personnel accessing Project sites are required to complete the Manitoba Hydro Biosecurity Cleaning Record Form (Appendix B). This form will capture structure #, cleaning station ID#, Access ID#, Risk Level, Type (vehicle/equipment/pedestrian), cleaning prescription (rough/fine/disinfection), operators name and date. These forms will be submitted electronically to Manitoba Hydro daily via: TLC.AgriculturalBiosecurity@hydro.mb.ca

All cleaning records will be digitized into an Excel Spreadsheet and submitted on a weekly basis. This documentation will be retained for the duration of the project.

7. Appendix A

0111



EQUIPMENT CLEANING RECORD TRANSMISSION LINE CONSTRUCTION

Project *	Section *
-----------	-----------

Complete at cleaning area.

Unit number *		
Equipment type *	DATE OF CLEANING *	yyyy mm dd
Cleaned by *		
Location of cleaning *	Free of oil leaks? * <input type="checkbox"/> Yes <input type="checkbox"/> No	
Inspected by *	Signed by *	yyyy mm dd
Remarks		

Complete at destination site.

Destination		
Delivered to site by		
Inspected for cleanliness at site? <input type="checkbox"/> Yes <input type="checkbox"/> No	Free of oil leaks? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Inspected by	Signed by	yyyy mm dd
Remarks		

APPENDIX G: VOLTAGE WASTE DOCKET

Section 1: Generator Information

Generator Name:			
Mailing Address:		City/Town:	
Province:	Postal Code:	Office Phone Number:	

Physical Address:		Generator Location Name	
Approval Code:		Voltage Job Number:	
Description of Waste:			
Estimated Quantity:		Shipping Date:	

Facility Certification: I hereby certify that the waste material has been properly characterized, described, classified and packaged for shipping as per applicable Federal, Provincial, and local regulatory requirements and laws. I certify the waste is acceptable by regulator permit and license acceptance. As the authorized generators representative, I understand that it is the generators responsibility to fully classify the generated waste.

Generator Authorized Representative:		Signature:	
Company Name:		Office Phone Number:	

Section 2: Transportation Information

Transportation Company:		Unit Number:	
Mailing Address:		City/Town:	
Province:	Postal Code:	Office Phone Number:	
Driver Name:		Driver Signature:	
Unit License Plate:		Driver Phone Number:	

Section 3: Facility/Receiver Information

Facility/Receiver Name:		Phone Number:	
Physical Address:			
Mailing Address:		City/Town:	
Province:		Postal Code:	
Secure Approval Code:			
Waste Destination:	<input type="checkbox"/> Landfill Disposal	<input type="checkbox"/> Treatment Pad	<input type="checkbox"/> Recycling Facility
Waste Discrepancy:			

Additional Information:

Disposal Facility Certification: I hereby certify that the waste material has been received, and all the above information to the best of my knowledge is accurate.

Scale Ticket Number:		Received Date:	
Scale Totals:	Gross:	Tare:	Net:
Waste GPS Locations:	Cell:	Grid:	Elevation:
Facility Authorized Representative:		Signature:	

Section 4: Liquid

Work Completed:			
Amount (m3):		Type of Fluid:	
Location of Disposition:			

Section 5: Additional Information

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Copies:	
COLOR	COLOR

APPENDIX H: MID CANADA CONTAMINATED SOIL ACCEPTANCE FORM



**MidCanada Environmental Services
Soil Division**

Material Acceptance Application

1. SOURCE INFORMATION

Generator's Name: _____

Contact Name: _____ Phone #: _____

Source Location: _____
(address or legal description)

Type of Operation: Petroleum Storage Industrial Spill Site
 Other (describe): _____

Consultant or Testing Agency: _____

Contact Name: _____ Phone #: _____

2. CHARACTERIZATION

Type of Operation: Excavated Soil From Tank Removal Spill Residue
 Excavated Soil From Tank Remediation Drill Cutting
 Other (describe): _____

Estimated Tonnage: _____ tonnes

Shipping Method: Bulk Bag Other (describe): _____

Soil Classification: Coarse Grained (sand/gravel) _____%
 Fine Grained (sand/gravel) _____%
 Other (describe): _____ _____%

Types of Debris Present in Soil: _____

Is there potential for free phase liquid contaminants in soil shipments? Yes No

Estimated Shipping Dates: _____ to _____

3. ANALYTICAL RESULTS

Constituent	Concentration		Comments
	Max	Min	
Benzene			
Toluene			
Ethylbenzene			
Xylene			
F1 PHC			
F2 PHC			
F3 PHC			
F4 PHC			
Flash Point			
Benzo(a)pyrene			
Naphthalene			
Other			

4. BILLING INFORMATION

Customer: _____

Contact: _____

Phone #: _____ Email: _____

Legal Address: _____

Purchase Order Number: _____

5. CERTIFICATION

The Generator hereby certifies that, to the best of his/her knowledge, the information provided on this application is complete and accurate.

The Generator agrees to advise MidCanada Environmental Services immediately in the event of any revisions to the information provided herein.

The Generator acknowledges that in the event that the material shipped to MidCanada is found to have characteristics that differ from those provided in the application, MidCanada can require the Generator to remove the material from the facility at the Generator's expense.

 Signature of Generator's Representative _____
 Date

6. FOR MIDCANADA USE ONLY

 Date Received Reviewed By Approval No.

