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BERGER PEAT MOSS LIMITED

Terms of Reference for the Big River Peat Harvest Project

Submitted to:

Ministry of Environment
Environmental Assessment and Stewardship Branch
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REPORT



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Berger



**Golder
Associates**



PART A: INTRODUCTION

Project Overview

Berger Peat Moss Ltd. (Berger) is proposing to harvest the Big River bog (the Project) located approximately 80 kilometres (km) north of Big River, Saskatchewan. The Project will assist Berger in moving closer to the increasing western markets and meeting the horticultural market demand for peat. The projected Project footprint is 554 hectares (ha) contained within a 1,355 ha lease area.

The Project includes all aspects that relate to the construction (i.e., site preparation), operation and maintenance, and closure. The first phase of the Project includes site preparation (i.e., vegetation clearing, mulching). Berger will work with the local Forest Management Agreement (FMA) holder to determine if there is interest in any merchantable timber within the harvest area should it be present. Non-merchantable timber cleared from the harvest area will be stockpiled on-site for use in the construction of internal bog roads as appropriate, and construction of a parking lot and equipment storage area. The Project is located immediately east of secondary Highway 922 and there is an existing access road into the lease area that will be used for the majority of the main access to the site. Upgrades to the existing trail (e.g., clearing of vegetation, surface leveling), and establishing the access road entrance into the harvest area will be completed during the first phase of the Project to allow vehicles and equipment to safely access the site.

The second phase of the Project includes the construction of sedimentation ponds, drainage ditches, and internal bog roads for the first section of the bog to be harvested, and other support infrastructure (e.g., staging area and site office). Harvesting operations include clearing/mulching of the surface vegetation layer, construction of field ditches, field preparation (i.e., profiling and harrowing), peat harvesting and stockpiling, and transportation to a packaging plant.

To limit the initial Project footprint, one area of the bog is harvested at a time, rather than opening up the entire bog at once. Berger is proposing to harvest the Big River bog in five phases. As new harvest areas are established, the Project infrastructure is also expanded as required, which would include extending the main drainage ditch, field drainage ditches and internal bog roads. Reclamation will begin on the portion of bog that has been harvested as the new area is established. A progressive reclamation plan is developed for the site so that harvested areas are actively being reclaimed as others are being harvested. Integrated harvest and reclamation planning enables Berger to optimize management of the peat resource and coordinate that work with reclamation monitoring and adaptive management to further support restoring the harvest area. The final phase of the Project will be closure, which includes decommissioning of infrastructure and reclamation of the disturbance area.

Requirement for Provincial Environmental Impact Statement

The provincial environmental assessment process begins with the submission of a Technical Proposal to the Environmental Assessment and Stewardship Branch (EAS Branch) of the Ministry of Environment (MOE) to determine if the Project is considered a “development”. A “development”, as defined in Section 2(d) of *The Environmental Assessment Act (EAA; 2013)*, is any project, operation, or activity, or any alteration or expansion of any project, operation, or activity, which is likely to:

- i) have an effect on any unique, rare, or endangered feature of the environment;
- ii) substantially use any provincial resource and, in so doing, pre-empt the use or potential use of that resource for any other purpose;



- iii) cause the emission of any pollutants or create by-products, residual, or waste products, which require handling and disposal in a manner that is not regulated by another act or regulation;
- iv) cause widespread public concern because of potential environmental changes;
- v) involve a new technology that is concerned with resource use and that might induce significant environmental change; or
- vi) have a significant impact on the environment or necessitate a further development, which is likely to have a significant impact on the environment.

Berger submitted a Technical Proposal to the MOE-EAS Branch on April 14, 2016. On May 25, 2016 the MOE-EAS Branch determined that the Project met the criteria of Section 2(d)(i) of the *EAA* (2013) and an environmental assessment would be required (EAB File # 2016-004).

Requirement for Federal Environmental Assessment

Under Section 8 of the *Canadian Environmental Assessment Act, 2012* (*CEAA* 2012), only designated projects are subject to the screening process through which the Canadian Environmental Assessment Agency (the Agency) will determine if a federal environmental assessment is required. Designated projects are defined under the *Regulations Designating Physical Activities* (2012, amended in December 2014). The proposed Project is not included on the designated project list in the Schedule to the *Regulations Designating Physical Activities*; as such a federal environmental assessment is not anticipated to be required. However, it is understood that under Section 14(2) of the *CEAA* (2012) the Minister of Environment and Climate Change Canada may designate a physical activity that is not prescribed by regulations if in the opinion of the Minister, either the carrying out of that physical activity may cause adverse environmental effects or public concerns related to those effects may warrant the designation. The proposed Project has not been designated as by the Minister as requiring a federal assessment.

Federal legislation such as the *Navigation Protection Act* (2012), the *Fisheries Act* (2012), the *Species at Risk Act* (SARA 2002), and the *Migratory Birds Convention Act* (1994) will be considered and the appropriate federal agency will be contacted directly should the Project require further review or discussion.

Scope of the Environmental Assessment

The Project scope includes all aspects that relate to the planning, design, construction, operation and maintenance, and closure of the Project components. While the total lease area is 1,355 ha, only 467 ha or 34 percent (%) has currently been identified for harvesting. The total harvest area will be confirmed with further evaluation of the peat resource. The remaining lease area will be used as a buffer area (undeveloped), donor sites to facilitate future reclamation activities, and a portion will be used for non-harvest components of the Project, such as the access road, site office and staging area, sedimentation ponds, outlet ditches, drainage ditches and internal bog roads. Specifically, the scope of the Project includes:

- site preparation, including vegetation clearing and mulching and temporarily stockpiling trees for use in constructing the internal bog roads;
- construction of staging area for supporting infrastructure, including a site office/lunch room facility, parking lot, an equipment repair and maintenance garage, a containment pad for aboveground storage tanks, and the generator facility;



BIG RIVER TERMS OF REFERENCE

- construction and maintenance of sedimentation ponds;
- construction and maintenance of the drainage structures including a main drainage ditch around the harvest site, outlet ditch that releases discharge (water) into the surrounding environment via the sedimentation ponds, and field drainage ditches dividing the area to be harvested into individual peat fields (phased over the life of the Project);
- construction and maintenance of internal bog roads (phased over life of the Project);
- peat harvesting and temporary stockpiling of the peat on-site (seasonal - April to October; phased over the life of the Project);
- site maintenance (e.g., vegetation management, drainage structure inspection and maintenance, erosion control, access road);
- progressive reclamation of harvested parcels within the bog (phased over the life of the Project);
- transportation of the peat to packaging plant (the packaging plant itself is not included as part of the scope of this Project) (phased over the life of the Project); and
- decommissioning of support infrastructure and reclamation of the disturbance area.

Opening a new peat harvesting operation location typically takes between one to three years. It is anticipated that harvesting within the bog may occur over a period of 20 to 30 years. Berger incorporates progressive reclamation into resource management planning, opening only small parcels of the bog at a time to limit the size of the Project footprint. Rather than waiting until the entire bog has been harvested, reclamation activities within each parcel begin once the parcel has been harvested. Final decommissioning and reclamation of the site facilities will occur over three years once harvesting operations are complete. Given that reclamation of fully harvested areas will occur progressively throughout operations, it is anticipated that only the last harvesting phase will require reclamation during the final three years of closure.

Duty to Consult

The Project has triggered the Crown's duty to consult with potentially affected First Nation and Métis communities. Procedural aspects of the consultation process have been assigned to Berger to assist the province in fulfilling its duty to consult. As part of the process, Berger is required to consult with First Nations and Métis communities identified by the MOE-EAS Branch to provide them with information to facilitate understanding of the Project and how it may potentially affect their Treaty and Aboriginal rights and traditional uses of the area. A Consultation Plan has been prepared that outlines how Berger will fulfill the procedural aspects of the consultation process that have been assigned (Appendix A).

Terms of Reference

When a project is considered a "development", then the proponent is required to draft the Terms of Reference (TOR) for the preparation of the Environmental Impact Statement (EIS). The TOR outlines the required scope of the environmental assessment, identifies the key effects to be studied, and provides a set of criteria to judge the completeness of the environmental assessment by regulatory agencies.



Berger has prepared the following TOR to outline the information that will be obtained as part of the environmental assessment, and how this information will be presented and evaluated in the EIS. The MOE Guidelines for the Preparation of the Terms of Reference (MOE 2014) were referenced in the preparation of the TOR, in addition to gathering information from several sources such as existing literature, peat moss associations in Canada, the public, and provincial agencies. The TOR to reflect the potential concerns and issues that have been identified for the Project and for other similar developments. The TOR should not be considered exhaustive or restrictive, as concerns other than those already identified could arise during the completion of the environmental assessment.

Environmental Impact Statement Table of Contents

The environmental assessment investigates the potential risks and benefits of the Project in the context of the existing biophysical and socio-economic conditions. In addition to identifying potential risks and specifying appropriate mitigation designs and policies, the EIS will also incorporate conceptual plans for decommissioning and reclamation of the site. The EIS considers a number of components, including issue scoping (e.g., purpose of the Project, need for the Project, and Project concerns), baseline studies, effects predictions, determination of significance, and recommended monitoring and follow-up programs. Although the environmental assessment will evaluate all potential Project environment interactions, the intent is to focus the assessment on those interactions with the greatest potential to result in significant residual effects to the biophysical and socio-economic environments.

The EIS will be organized into a main document and stand-alone baseline report. The EIS will be written to satisfy a wide range of technical knowledge, be clear and concise, consistent and accurate, and transparent in describing methods, assumptions, and drawing conclusions. The assessment of potential effects on the biophysical and socio-economic environments will be organized by discipline; that is, all information pertaining to a discipline (i.e., study areas, existing environment, residual effects assessment, uncertainty, and monitoring and follow-up) will be provided within the discipline section. The annotated EIS Table of Contents for the Project is provided below (Part B). Reference to the appropriate section of the stand-alone baseline report will be included for supporting detail as necessary.

PART B: TERMS OF REFERENCE

The following sections of the TOR describe the information that will be presented within each section of the EIS. Sufficient information will be provided for each so that informed conclusions can be reached regarding the potential for significant residual effects on the biophysical and socio-economic environments.

EXECUTIVE SUMMARY

The Executive Summary will provide an overview of the EIS including:

- a description of the Project components and activities, Project location and environmental setting;
- a summary of the provincial environmental assessment process, anticipated applicable permits and approvals required;
- a summary of the engagement activities completed for the Project; this will include the results of community information sessions, meetings with regulatory agencies, and engagement and duty to consult activities with First Nations and Métis communities;



BIG RIVER TERMS OF REFERENCE

- an overview of the assessment approach, valued components (VCs), spatial and temporal boundaries and the assessment cases considered;
- a summary of the predicted residual effects of the Project, determination of significance, and monitoring and follow-up programs; and
- a summary of commitments made by Berger throughout the EIS.

The executive summary will be written in non-technical language, and avoid the use of scientific jargon.



Table of Contents

1.0 INTRODUCTION.....1

1.1 Project Overview.....1

1.2 Proponent.....1

1.3 Project Location.....1

1.4 Need for the Project and Benefits.....1

1.5 Regulatory Requirements.....1

1.6 Structure of the Document.....1

2.0 PROJECT ALTERNATIVES.....2

3.0 PROJECT DESCRIPTION.....2

3.1 Introduction.....2

3.2 Project Components and Activities.....2

3.2.1 Project Components.....2

3.2.2 Project Activities.....3

3.3 Human Resource Requirements.....3

3.4 Health, Safety, and Environmental Management.....3

3.5 Accidents, Malfunctions, and Unplanned Events.....4

3.6 Ancillary Projects.....4

4.0 ENGAGEMENT AND DUTY TO CONSULT ACTIVITIES.....4

4.1 Engagement Activities.....4

4.2 Duty to Consult.....5

5.0 ENVIRONMENTAL ASSESSMENT APPROACH.....5

5.1 Scope of the Assessment.....6

5.2 Valued Components.....6

5.3 Assessment Boundaries.....7

5.3.1 Spatial Boundaries.....7

5.3.2 Temporal Boundaries.....8

5.3.3 Assessment Cases.....8

5.4 Description of the Environment.....8



BIG RIVER TERMS OF REFERENCE

5.5	Project Interactions and Mitigation.....	9
5.6	Residual Effects Analysis	10
5.7	Prediction Confidence and Uncertainty.....	11
5.8	Residual Effects Classification and Determination of Significance	11
5.9	Monitoring and Follow-up	11
6.0	DISCIPLINE SECTIONS.....	12
7.0	EFFECTS OF THE ENVIRONMENT ON THE PROJECT	12
8.0	SUMMARY AND CONCLUSIONS	13
9.0	REFERENCES.....	13

APPENDICES

APPENDIX A

Consultation Plan



1.0 INTRODUCTION

1.1 Project Overview

A brief overview of the Project will be provided to familiarize the reader and present a framework or structure for the organization of the information that will follow. A description of the intended scope of work and summary of the specific components and/or activities involved with completing the Project will be provided.

1.2 Proponent

This section will provide specific information about Berger, including:

- company name;
- key contact information for representatives responsible for the Project and the EIS;
- corporate mission and values;
- associations and certifications held by Berger; and
- scientific research Berger is involved in.

1.3 Project Location

The purpose of the section will be to provide context so that the reader can understand where the Project is situated with respect to the main existing environmental features. A brief description of the location of the proposed Project at a regional and local scale, and current and historical land and resource use in the area will be provided. Maps showing the location of the proposed Project relative to other land uses and developments, and nearby communities will be presented.

1.4 Need for the Project and Benefits

A rationale for the need for the Project will be provided. The rationale will describe Berger's motivation and understanding of how the proposed Project meets the market demands for peat moss, as well as the potential benefits to local communities and Saskatchewan in general. The "benefit of" the Project outlines what is to be achieved by carrying out the Project. Anticipated benefits of Berger's investment into the Project and into the province will be described (e.g., employment opportunities, royalty revenue, increased spending in the vicinity of the Project).

1.5 Regulatory Requirements

An overview of the regulatory requirements for the Project will be provided. The overview will contain a summary of the potential permits/approvals/licenses/authorizations that are required prior to the construction and operation phase of the Project. A list of applicable federal, provincial, and municipal Acts and Regulations will also be presented. Approvals, authorizations, permits, licenses, leases, and agency letters anticipated to be required, and those already received, including those that have been submitted and are currently under review, will be included. A concordance table will be included as an appendix that outlines how the EIS has meet these TOR.

1.6 Structure of the Document

This section will provide an outline of the EIS to direct the reader to those sections of relevance or interest.



2.0 PROJECT ALTERNATIVES

This section of the EIS will identify and consider the effects of “alternative means of carrying out the Project.” “Alternative means” are the various technically and economically feasible ways under consideration by the proponent that would allow a designated project to be carried out (the Agency 2015). This analysis will identify economically and technically feasible alternatives, and include environmental and social considerations that were evaluated as means of implementing the Project. As per the Operational Policy Statement: *Addressing “Purpose Of” and “Alternative Means” under the CEAA, 2012* (the Agency 2015), consideration of alternative means should the following steps:

- identify technically and economically feasible alternative means;
- list their potential effects on valued components (VCs);
- select the approach for the analysis of alternative means; and
- assess the environmental effects of the alternative means.

3.0 PROJECT DESCRIPTION

3.1 Introduction

The section presents details of the Project to support the assessment of the potential Project effects on the environment. Detailed descriptions of the Project components and activities completed throughout exploration, site preparation and construction, operations and maintenance, and closure will be provided. The anticipated schedule of each Project phase will be presented. Environmental design features and mitigation that will be implemented to reduce or eliminate the effects of the Project on the environment will also be discussed. Berger’s Veriflora® Certification and reclamation policy are also discussed. Information will be provided in sufficient detail to enable an accurate assessment of the potential residual environmental effects of the proposed Project.

3.2 Project Components and Activities

This section will discuss the facilities and infrastructure that will be required during site preparation and construction, operation and maintenance, and closure of the Project. Maps, figures, and illustrations will be used as necessary to provide a visual representation of the Project and its activities.

3.2.1 Project Components

A description of the Project components will include a description of the following:

- access road;
- internal bog roads;
- sedimentation ponds;
- drainage ditches;
- stockpiling areas; and
- infrastructure and support facilities (e.g., equipment staging area, site office trailer).



3.2.2 Project Activities

Information will be provided to describe in detail the following Project activities:

- exploration;
- site preparation and construction;
- operations and maintenance; and
 - water level management;
 - field harrowing;
 - peat harvesting;
 - field maintenance and monitoring;
 - seasonal site closure; and
 - transportation of product.
- closure
 - decommissioning;
 - reclamation planning;
 - post-reclamation monitoring; and
 - financial assurance.

3.3 Human Resource Requirements

This section will identify the anticipated construction workforce and number of permanent seasonal employees required for operation and maintenance, and the potential needs to be met by local recruitment. The estimate of the human resource requirements for the Project includes direct and indirect employment requirements.

A brief description of the necessary training and personal protective equipment that will be provided to employees to adhere with the requirements of Berger's Environmental Management System and Safety Program and meet requirements under *The Saskatchewan Employment Act* (2014) and *The Occupational Health and Safety Regulations* (1996) will be provided.

3.4 Health, Safety, and Environmental Management

A summary of Berger's health, safety and environmental management system will be provided. This will include details regarding Berger's Permit Management and Environmental Management systems and how they are integrated to maintain compliance with environmental requirements on all harvesting and production sites. Components of the environmental management system that will be described include:

- Best Management Practices;
- Occupational Health and Safety Plan;



- Environmental Protection Plan;
- Waste Management Plan;
- Emergency Response Plan (including procedures for Spill Response and Fire); and
- Woodland Caribou Habitat Mitigation and Monitoring Plan.

3.5 Accidents, Malfunctions, and Unplanned Events

This section of the EIS will present a description of potential credible accidents and malfunctions associated with the Project, and the conditions under which they could occur. Proposed mitigations and contingency plans will be provided in the EIS. The assessment will focus on bounding conditions to attempt to maintain an appropriate level of conservatism in the assessment. Potential accidents, malfunctions and unplanned events that may occur during construction, operation and maintenance, and closure of the Project will be identified. Environmental design features, mitigation practices, and emergency response plans to manage these events will be identified.

3.6 Ancillary Projects

Due to the long life cycle of the peat harvesting business, Berger intends to establish a long-term presence in Saskatchewan for at least 50 years. This would include Berger's business objective of bringing into operation three separate harvesting operations and if market conditions allow building a new packaging plant in Saskatchewan. Ancillary projects or anticipated supporting infrastructure that may be required as a result of this Project will be described.

4.0 ENGAGEMENT AND DUTY TO CONSULT ACTIVITIES

4.1 Engagement Activities

Berger recognises the importance of meaningful engagement with stakeholders to identify local issues that may be related to or have an effect on the proposed Project. As a new company working in Saskatchewan, Berger also recognises the importance of establishing a local presence and building and maintaining a positive relationship with the communities surrounding the Project. Engagement is a valuable aspect of Berger's planning and development phase as it provides an opportunity for Berger to achieve the following objectives:

- foster an understanding of the Project and provide an opportunity for people in the area to show support and/or identify concerns about the potential effects of the Project through public notification and involvement;
- provide an opportunity to build relationships with the nearest residents to the project, and discuss and incorporate local concerns into Project planning; and
- respond to and documenting public issues in a timely manner.

Berger is in the process of developing an engagement plan for the Project. Berger has initiated contact with the public i.e., (local communities, and other concerned members of the public), First Nations and Métis communities, and regulatory agencies (i.e., municipal and provincial governments). Berger will continue to engage with local and First Nations and Métis communities throughout the environmental assessment and permitting process. Berger has and will also continue to meet with provincial and municipal government and regulatory agency staff throughout the environmental assessment process.



A description of all engagement activities (names of groups, locations, dates, and formats) that have been conducted in support of the Project will be summarized. In addition, results and feedback received will be provided, along with how this information will be addressed by Berger will included in this section. Future communication and engagement activities, including schedules and linkages to Project milestones and the environmental assessment process will also be described.

4.2 Duty to Consult

The Project has triggered the Crown's duty to consult with potentially affected First Nation and Métis communities. Berger is committed to engaging First Nations and Metis communities with potential interest in the Project, and supporting the Crown in carrying out their Duty to Consult. A Consultation Plan has been prepared (Appendix A) and the results of these consultation efforts will be documented in the engagement section of the EIS. This will include a description of the attempts to contact each of the six First Nation and eight Métis communities identified by the MOE-EAS Branch, specific community concerns, how those concerns will be addressed by Berger, and any agreements developed with the communities.

5.0 ENVIRONMENTAL ASSESSMENT APPROACH

This section of the EIS will provide a brief overview of the main steps considered in the environmental assessment approach, including:

- define the scope of the assessment including input received from regulatory agencies, engagement and consultation activities, and guidance documents;
- identify the VCs for each discipline upon which the assessment will focus and the associated measurement indicators and assessment endpoints for VCs;
- define spatial and temporal boundaries used to analyze and assess effects;
- describe existing conditions, including the cumulative effects of previous and existing developments for each VC;
- conduct a pathway analysis to identify Project components or activities with the potential to create a residual effect; mitigation developed for removing pathways or limiting effects is also presented;
- conduct an assessment for each VC to predict residual effects from the Project;
- conduct an assessment for each VC to predict the cumulative effects of previous and existing projects and activities, the Project and potential future projects that have been proposed, but not yet approved (if applicable);
- evaluate and describe the level of certainty that can be placed on predicted residual effects;
- determine the significance of cumulative effects from the Project and potential future projects that have been proposed, but not yet approved (if applicable); and
- identify monitoring and follow-up programs to address uncertainty.

General descriptions of each of the steps are provided in this section of the EIS, with detailed descriptions provided in each discipline section of the EIS.



5.1 Scope of the Assessment

This section of the EIS will present the scope of the environmental assessment. The scope of the environmental assessment incorporates input received from regulatory agencies, input from engagement and consultation activities, and advice provided in guidance documents relevant to environmental assessment practice.

5.2 Valued Components

This section of the EIS will summarize the approach and methods for selection of VCs for environmental, economic, social, and heritage disciplines. Valued components refer to environmental features that may be affected by a project and that have been identified to be of concern by the proponent, scientists, government agencies, Aboriginal peoples, or the public (the Agency 2014). The selection of appropriate VCs allows the assessment to be focused on those aspects of the natural and human environment that are of greatest importance to society and species conservation.

The selection of VCs will consider the following factors:

- presence, abundance, and distribution within, or relevance to the area associated with the Project;
- potential for interaction with the Project and sensitivity to effects;
- species conservation status or concern (e.g., rarity, sensitivity and uniqueness);
- ecological and socio-economic value to communities, government agencies, and the public;
- traditional, cultural and heritage importance to First Nation and Métis peoples; and
- experience with similar projects.

The VCs selected for this assessment will be drawn from the following categories:

- atmospheric environment (e.g., air quality and greenhouse gas emissions);
- hydrogeological and surface water environment (e.g., groundwater, hydrology, surface water quality);
- aquatic environment (e.g., fish and fish habitat);
- terrestrial environment (e.g., soils, vegetation, wildlife);
- land and resource use and heritage resources (e.g., tourism and recreation, cultural sites, heritage resources,); and
- socio-economic environment (e.g., employment and economy, traffic, community services and infrastructure).

This section will also describe how assessment endpoints and measurement indicators for each of the VCs are used in the environmental assessment of the Project. Assessment endpoints are qualitative expressions used to assess the significance of residual effects on VCs and represent the key properties of the VC that should be protected for future human generations (i.e., incorporates sustainability). For example, self-sustaining and ecologically effective fish and wildlife populations, continued land use opportunities, and protection of heritage



sites may be assessment endpoints for fish and wildlife, land and resource use, and heritage resources, respectively.

Assessment endpoints are typically not quantifiable and require the identification of one or more measurement indicators that can be directly linked to the assessment endpoint. Measurement indicators represent properties of the environment and VCs that, when changed, could result in or contribute to an effect on assessment endpoints.

All VCs have measurement indicators, but not every VC has an assessment endpoint. For example, VCs such as air quality, hydrogeology and hydrology may be considered as measurement indicators for other VCs, and do not have an assessment endpoint (i.e., may be referred to as intermediate components). Intermediate components are considered to be important aspects of the natural and human environment, and are evaluated to determine how they may influence assessment endpoints. The evaluation includes an analysis of changes in measurement indicators for the intermediate components. The results of the analysis are provided to other disciplines (e.g., aquatic and terrestrial environment, and socio-economic environment) for inclusion in their residual effects analysis.

5.3 Assessment Boundaries

Assessment boundaries define the geographic and temporal scope or limits of the analysis of effects from the Project on the environment. These boundaries encompass the areas within (spatial boundaries) and times during (temporal boundaries) which the Project, and in combination with previous, existing and reasonably foreseeable developments, is expected to interact with the VCs. Because the responses of physical, biological, cultural, and economic properties to natural and human-induced disturbance will be unique and occur across different scales, a multi-scale approach will be used for describing baseline conditions (existing environment) and predicting effects from the Project on VCs.

5.3.1 Spatial Boundaries

This section will describe the process for defining the study areas for each discipline. Defining the geographic extent of the study areas for each discipline is a key element of the environmental assessment process. Spatial boundaries are selected to be appropriate for each discipline (e.g., atmospheric environment, surface water environment, terrestrial environment) and associated VCs, using the following criteria:

- physical extent of the Project;
- physical extent of Project-related effects;
- physical extent of key environmental systems (e.g., watershed boundary of potentially affected streams); and
- ecological and socio-economic attributes (e.g., movement and distribution) of VCs.

Study areas are designed to capture the maximum extent of potential effects from the Project and other previous, existing, and reasonably foreseeable future developments. Spatial boundaries will be illustrated on maps of appropriate scale and rationale provided in the discipline section.



5.3.2 Temporal Boundaries

This section will describe the process for defining the temporal boundaries for the environmental assessment. The environmental assessment is designed to evaluate the short and longer-term changes from the Project and associated effects on the biophysical and human environments. The temporal boundaries identified for the assessment of effects from the Project including previous, existing, and reasonably foreseeable developments are specific to the VCs being assessed. Temporal boundaries include the duration of residual effects from previous and existing developments that overlap with residual effects of the Project and the period over which the residual effects from reasonably foreseeable developments will overlap with residual effects from the Project. The temporal boundaries will be defined for each discipline and rationale provided.

5.3.3 Assessment Cases

The concept of assessment cases is applied to the associated spatial boundary of the assessment to estimate the incremental and cumulative effects from the Project and other developments. The approach incorporates the temporal boundary for analyzing the effects from previous, existing, approved, and reasonably foreseeable developments before, during, and after the anticipated life of the Project. This section will provide a brief description the assessment cases considered in the EIS. The assessment cases are discipline-specific and include the following.

- **Base Case** – represents existing conditions including cumulative changes from previous and existing developments and activities. The Base Case is supported by baseline studies that were completed to better understand the existing physical, biological, and socio-economic environments that may be influenced by the Project. As such, the Base Case reflects the effects of past and existing disturbances, such as agriculture and livestock grazing, all-season roads, seasonal roads, trails, drainage ditches, existing peat harvesting projects, and forestry operations on each VC. Natural disturbances such as fire, insect outbreaks, and disease also influence the Base Case.
- **Application Case** – represents predictions of the effects of the Base Case combined with the effects that may result from the Project.
- **Reasonably Foreseeable Developments (RFD) Case** – represents predictions of the cumulative effects of the Application Case, plus projects that are currently under application review or that have officially entered a regulatory application process, and are therefore, considered reasonably foreseeable.

5.4 Description of the Environment

This section will describe the approach to compilation of relevant background information required for environmental assessment purposes. The stand-alone baseline report will be referenced as appropriate.

The baseline information will include natural and/or human-caused trends that may alter the environmental, economic, social, and heritage setting, irrespective of the changes that may occur because of the proposed Project or other projects and/or activities in the area. The baseline information will also explain if and how other past and present projects and activities in the study area have affected or are affecting each VC. Traditional Knowledge, if available, will be included in the baseline information.

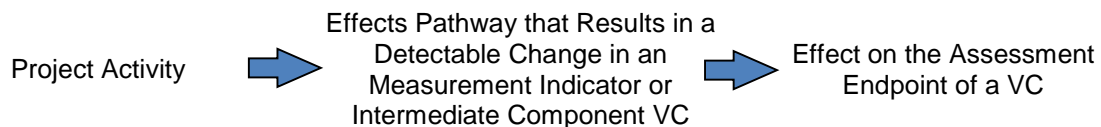
The approach to the review and use of relevant historical data, along with the design of field programs to fill data gaps in historical information will be discussed. Where additional Project- and VC-specific field studies are



conducted, the scope and methods to be used will follow existing published documents, including government and regulatory guidelines and methods pertaining to data collection and analysis methods, where these are available. Where methods used for the assessment deviate from applicable published guidance, the rationale for the variance will be provided in the EIS.

5.5 Project Interactions and Mitigation

This section will describe the approach to identifying and validating Project interactions with VCs. Interactions (linkages) between Project components or activities, and the corresponding potential changes to measurement indicators are identified by a pathway analysis that is then used to focus the residual effects assessment for the VCs. The first part of the analysis is to identify all potential effects pathways for all phases of the Project. Each pathway is initially considered to have a linkage to potential effects on VCs. For an effect to occur there has to be a Project component or activity that results in a detectable change to the measurement indicators and a correspondent effect on a VC.



The development of the potential pathways is followed by the screening of pathways to determine if mitigation is required; and if so, the development of environmental design features and mitigation that can be incorporated into the Project to remove or avoid a pathway or limit adverse effects on VCs. Environmental design features and mitigation include engineering design elements, environmental best practices, management policies and procedures, and spill response and emergency contingency plans. The description of environmental design features and mitigation will be specific to each discipline and the associated VCs. Any uncertainty associated with the effectiveness of proposed mitigation actions will be noted.

The purpose of the pathway analysis is to focus the residual effects analysis on linkages that require a more comprehensive assessment of effects on VCs, or those pathways that are likely to result in residual effects on a VC. Pathways are determined to have no linkage, a secondary (minor) linkage, or a primary linkage using scientific knowledge, logic, experience with similar developments, and the effectiveness of environmental design features. Each potential pathway is evaluated and described as follows:

- **no linkage** – analysis of the potential pathway reveals that there is no valid linkage between the Project and the VC, or the pathway is removed by environmental design features or mitigation so that the Project would not be expected to result in a measurable environmental change and would therefore have no residual effect on a VC relative to existing conditions (i.e., Base Case) or guideline values;
- **secondary** – pathway could result in a measurable minor environmental change, but would have a negligible residual effect on a VC relative to Base Case or guideline values, and is not expected to contribute to effects of other existing, approved, or reasonably foreseeable developments to cause a significant effect; or
- **primary** – pathway is likely to result in an environmental change that could contribute to residual effects on a VC relative to Base Case or guideline values.



Pathways with no linkage to a VC, either because there was no linkage initially or because environmental design features or mitigation will remove (avoid) the pathway, are not advanced for further assessment. Pathways that are assessed to be secondary and demonstrated to have a negligible residual effect on a VC through simple qualitative or semi-quantitative evaluation of the pathway are also not advanced for further assessment. In summary, pathways determined to have no linkage to a VC or those that are considered secondary are not expected to result in environmentally significant effects on the assessment endpoint of VCs, individually or cumulatively. Primary pathways require further effects analysis and classification to determine the environmental significance of the Project effects on VCs with assessment endpoints.

A comprehensive table identifying Project interactions and potential effects, and describing associated mitigation will be developed and included in each of the discipline sections of the EIS.

5.6 Residual Effects Analysis

The residual effects analysis is based on the Project interactions that are determined to be primary in the pathway analysis. For primary pathways that require a residual effects analysis, the concept of assessment cases is applied to estimate the incremental and cumulative effects from the Project, as well as previous, existing and reasonably foreseeable developments. This section will describe the approach for residual effects analysis that is completed for the Application Case and the RFD Case.

The Application Case represents predictions of the cumulative effects of the developments in the Base Case combined with the effects from the Project. Where relevant, this case is used to identify the incremental changes from the Project that are predicted to occur between the Base Case and the Application Case. The RFD Case scenario includes the Application Case plus additional reasonably foreseeable developments in the region that have not yet been approved. Developments and activities that are currently under application review, have officially entered a regulatory application process were considered reasonably foreseeable. The difference between the Application Case and the RFD Case is that the Application Case considers the incremental effects from the Project in isolation of potential future land use activities.

The VCs requiring an analysis under the RFD Case are determined by understanding whether the residual effects from the Project and one or more additional developments (or activities) overlap or interact with the temporal or spatial distribution of the VC. Where potential cumulative effects from the RFD Case are identified for these VCs, these effects will be assessed using the same approach used for the Project-specific effects analysis. The residual effects analysis for the Application Case and RFD Case considers the proposed environmental design features and mitigation identified in the Project Interaction and Mitigation section (Section 5.5).

Results of the effects analyses for the Application Case and RFD Case are used to describe the magnitude, duration and geographic extent of the predicted changes to measurement indicators and residual effects on VC assessment endpoints. Expected changes are expressed quantitatively or numerically, wherever possible. For example, the magnitude of the effect may be expressed in absolute or percentage values above or below baseline conditions or a guideline value. The duration, including reversibility, of the effect typically is described in years relative to the phases of development of the Project and the spatial extent of effects is typically expressed in area or distance from the Project. In addition, the direction, frequency, reversibility, probability and context of effects are described, where applicable. Rankings such as short term duration or moderate magnitude are not used in the effects analysis. These rankings are applied to the classification of effects and determination of significance, where definitions of these rankings are provided.



5.7 Prediction Confidence and Uncertainty

This section will describe how the environmental assessment will address prediction confidence and uncertainty. Because the biophysical and human environments change naturally and continually through time and across space, most assessments of effects embody some degree of uncertainty. The confidence and uncertainty sections of the EIS will identify the key sources of uncertainty and discuss how uncertainty was addressed to increase the level of confidence that residual effects will not be worse than predicted. Where possible, a strong attempt will be made to reduce uncertainty in the EIS to increase the level of confidence in effects predictions.

Discipline studies may use quantitative methods, such as sensitivity analyses, or qualitative discussion to assess prediction confidence to the extent reasonable. Assumptions for statistical tests, as well as details on models used as part of the EIS, will be discussed within applicable disciplines. Where appropriate, uncertainty may also be addressed by additional mitigation, as required, or through monitoring programs designed to verify the effects predictions or the effectiveness of mitigation. Each discipline section will include a discussion of how uncertainty will be addressed and provide a qualitative evaluation of the resulting level of confidence in the residual effects analyses.

5.8 Residual Effects Classification and Determination of Significance

The purpose of the residual effects classification is to describe the residual incremental and cumulative adverse effects from the Project and other developments on VCs using a common set of criteria. The classification criteria provide definitions that permit a clear, thorough and unambiguous classification of residual effects such that reviewers and readers can follow and apply the logic used in the assessment and reach the same classification for a given residual effect. The residual effects classification is then used to make significance determinations. The intent of the environmental assessment is to predict if the Project is likely to cause a significant adverse (i.e., negative) effect on the environment or to cause public concern. Although positive changes associated with the Project will be described, neutral and positive effects are not assessed for significance.

Definitions for residual effects criteria will be provided, as well as an overview of the approach and method used to classify effects and predict significance. Residual effects criteria used in the determination of significance include direction, magnitude, geographic extent, duration, reversibility, frequency, and likelihood. It is difficult to provide definitions for residual effects criteria and significance that are universally applicable to each VC. Consequently, specific definitions for VCs will be provided within each discipline section of the EIS. As much as possible, residual adverse effects will be classified and significance determined using established guidelines, thresholds or target values and scientific principles. The evaluation will be complemented by the discipline environmental assessment practitioners' experience and understanding of the VC, as well as input received from the regulatory agencies.

5.9 Monitoring and Follow-up

Monitoring programs are proposed to address the uncertainties associated with the effects predictions and the performance of mitigation. In general, monitoring is used to verify the effects predictions. Monitoring is used to identify any unanticipated effects and provide for the implementation of adaptive management to limit these effects. Monitoring will be completed by qualified individuals and is used to implement adaptive management during the life of the Project. This section presents the concepts of adaptive management and different types of monitoring.



6.0 DISCIPLINE SECTIONS

The EIS will be structured so that the results of the environmental assessment on a discipline-specific basis will be provided in separate sections for each component of the biophysical and socio-economic environments listed below:

- atmospheric environment;
- hydrogeological and surface water environment,
- aquatic environment;
- vegetation;
- wildlife;
- land and resource use;
- heritage resources; and
- socio-economic environment.

The sections will follow the approach outlined in Section 5.0; generally, the sub headings within each of the discipline sections will be as follows:

- 1) Introduction
- 2) Valued Components
- 3) Assessment Boundaries
- 4) Description of the Existing Environment
- 5) Project Interactions and Mitigation
- 6) Residual Effects Analysis
- 7) Prediction Confidence and Uncertainty
- 8) Residual Effects Classification and Determination of Significance
- 9) Monitoring and Follow-up
- 10) Conclusions

7.0 EFFECTS OF THE ENVIRONMENT ON THE PROJECT

This section of the EIS will assess the effects of the environment on the Project consistent with Section 2(1)(c) of the CEAA, which defines “environmental effects,” in part, as “any change to the Project that may be caused by the environment, whether any such change or effect occurs within or outside Canada.” Accordingly, this section will focus on the effects of the environment on the Project, including by not necessarily limited to consideration of natural hazards such as:

- climate change;



- extreme weather events;
- natural seismic events; and
- fire.

This section of the EIS will identify changes or effects on the Project that may be caused by the above-mentioned hazards, the likelihood and severity of the changes or effects, and mitigation planned to avoid or limit the changes or effects.

8.0 SUMMARY AND CONCLUSIONS

A summary of the predicted residual effects for each VC, including the classification of residual adverse effects and determination of significance for incremental and cumulative effects from the Project and other existing, approved and reasonably foreseeable developments for those VCs that have an assessment endpoint. A commitments register and summary of monitoring and follow-up activities proposed for each discipline will also be provided.

9.0 REFERENCES

CEAA (Canadian Environmental Assessment Act). 2012. (S.C. 2012, c. 19, s. 52). Government of Canada.

Fisheries Act (2002). R.S.C. 1985 c.F-14. Government of Canada.

Migratory Birds Convention Act. 1994. S.C. 1994 c.22. Government of Canada.

MOE (Ministry of Environment). June 2014. Guidelines for the Preparation of the Terms of Reference. A Guide to Developing the Terms of Reference for a Proposed Project (or Development) Under *The Environmental Assessment Act*. Prepared by the Environmental Assessment Branch. 22 pages. Available at: <http://publications.gov.sk.ca/documents/66/89136-eaTermsOfReferenceGuidelinesDec2015.pdf>

Navigation Protection Act. 2012. R.S.C. 1985. c.N-22. Government of Canada.

Regulations Designating Physical Activities. 2012, last amended on December 31, 2014. SOR/2012-147. Government of Canada.

SARA (Species at Risk Act). S.C. 2002, c. 29. 2009. Government of Canada.

The Agency (Canadian Environmental Assessment Agency). 2014. Technical Guidance for Assessing Cumulative Environmental Effects under the *Canadian Environmental Assessment Act*, 2012. Canadian Environmental Assessment Agency. December 2014. Draft. Available at: http://www.ceaa.gc.ca/Content/B/8/2/B82352FF-95F5-45F4-B7E2-B4ED27D809CB/Cumulative_Environmental_Effects-Technical_Guidance-Dec2014-eng.pdf

The Agency. 2015. Operational Policy Statement Addressing “Purpose of” and “Alternative Means” under the *Canadian Environmental Assessment Act*, 2012. Updated March 2015. Available at: <http://www.ceaa.gc.ca/default.asp?lang=En&n=1B095C22-1>

The Occupational Health and Safety Regulations. 1996. Chapter O-1.1 Reg 1. Government of Saskatchewan.

The Saskatchewan Employment Act. 2014. Chapter S-15.1. Government of Saskatchewan.



APPENDIX A

Consultation Plan



March 2017

BIG RIVER PEAT HARVEST PROJECT

First Nation and Métis Consultation Plan

Submitted to:

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REPORT



Report Number: 1547160-P005





Table of Contents

1.0 INTRODUCTION.....	1
2.0 IDENTIFICATION OF FIRST NATION AND MÉTIS COMMUNITIES.....	1
3.0 CONSULTATION OBJECTIVES	2
4.0 CONSULTATION PLAN	2
5.0 CONSULTATION SUMMARY AND REPORT.....	3
TABLES	
Table 1: Consultation Plan Tasks.....	2



1.0 INTRODUCTION

Berger Peat Moss Ltd. (Berger) is proposing to establish a peat harvesting operation within the Big River bog located approximately 80 kilometres (km) north of Big River, Saskatchewan (the Project). The projected Project footprint is 554 hectares (ha) contained within a 1,335 ha lease area located on provincial Crown land. The Project includes all aspects that relate to the construction (i.e., site preparation), operation and maintenance, and decommissioning and reclamation of the Project.

Berger submitted a Technical Proposal to the Ministry of Environment (MOE) Environmental Assessment and Stewardship Branch (EAS Branch) in April 2016. Following review of the Technical Proposal, the MOE-EAS Branch determined that the Project met the criteria of Section 2(d)(i) of the *Environmental Assessment Act* (2013) and an environmental assessment would be required (EAB File # 2016-004). The MOE-EAS Branch also determined that the Project triggered the Crown's Duty to Consult.

The purpose of this document is to outline the proposed First Nation and Métis Consultation Plan that Berger intends to carry out for the Project. This Consultation Plan is designed to meet procedural aspects of Duty to Consult that the MOE has delegated to Berger as outlined in the *Consultation Notification of Proposed Big River Peat Harvesting Project letter (MOE File: 2016-004)* dated June 24, 2016.

2.0 IDENTIFICATION OF FIRST NATION AND MÉTIS COMMUNITIES

As described in the *Government of Saskatchewan First Nation and Métis Consultation Framework* (2010), there are consultation requirements where a proposed project falls within a First Nation or Métis community's traditional territory. The MOE considers several sources of information to determine which First Nations and Métis communities require consultation when Duty to Consult has been triggered. A description of the determination criteria is provided in the *Proponents Guide: Consultation with First Nations and Métis in Saskatchewan Environmental Impact Assessment* (MOE 2011). Several First Nations and Métis communities were identified by the MOE and have been provided with notification of the Consultation Notification dated June 24, 2016 and procedural aspects of the Duty to Consult that have been delegated to Berger. The MOE requires that consultation occur with the following six First Nations and eight Métis communities:

- Ahtahkakoop First Nation;
- Big River First Nation;
- Flying Dust First Nation;
- Pelican Lake First Nation;
- Waterhen Lake First Nation;
- Witchekan Lake First Nation;
- Big River Métis Local #59;
- Chitek Lake Métis Local #97;
- Dore / Sled Lake Métis Local #67;
- Green Lake Métis Local #5;
- Leoville Métis Local # 64;
- Timber Bay Métis Local #20;
- Timberland Métis Local #121; and
- Weyakwin Métis Local #16.



3.0 CONSULTATION OBJECTIVES

The primary objective of this Consultation Plan is to assist the MOE in meeting its Duty to Consult. Although the Duty to Consult ultimately resides with the Crown, the MOE has delegated certain procedural aspects to Berger, as the proponent is in the best position to accurately describe the Project and any potential adverse effects to the environment. Through the execution of this Consultation Plan, Berger will provide to the identified First Nations and Métis communities, specific information related to the location, scope, and schedule for the proposed Project, as well as potential adverse environmental effects that may result from the Project. Information from the First Nations and Métis communities will be gathered on how these potential changes may affect their ability to pursue their traditional activities such as hunting, fishing, trapping, or other traditional activities within the vicinity of the Project (i.e., the Big River bog). This information will be documented and considered in the Environmental Impact Statement.

4.0 CONSULTATION PLAN

This section provides the details of the Consultation Plan and is designed to meet the requirements of the MOE. The Consultation Plan builds upon relationships already established with First Nations and Métis communities through Berger’s engagement activities, which were initiated in the summer of 2016 and will be ongoing throughout the environmental assessment process. Table 1 provides a detailed breakdown and description of the proposed activities that will be completed as part of the Consultation Plan.

Table 1: Consultation Plan Tasks

Name of Task	Description of Task
Initial Notification	Each First Nation and Métis community identified by the MOE will be contacted to identify and establish communication channels (e.g., points of contact), identify elected officials or their authorized designates, and establish the preferred and most appropriate means of consultation. The initial contact will establish the need and venue for consultation and community-specific protocols for all future communication and meetings. All attempts to contact specific communities and the steps taken to engage will be documented.
Presentation of Project-specific Details	Project-specific information will be provided in plain language by Berger representatives or representatives from Golder. Information would include a general description of the Project, including the location, schedule (short, medium, and long-term plans), specific Project activities, ongoing environmental studies, and overview of the environmental assessment approval process. A summary of the potential effects from the Project on the environment, and associated mitigation to reduce these effects will also be presented. Focus will be on Project-specific changes with the potential to adversely affect First Nations and Metis ability to exercise their right to hunt, fish, and trap for food and carry out traditional uses. Input and issues of concern identified by the First Nations and Métis communities during this process will be documented. The format and venue for the delivery of the Project-specific information will be mutually agreed upon. Examples of how information may be provided include: a presentation to the Chief and Council or other Band or Métis Local representatives, presentations to general Band meetings, site visits, and informational handouts and factsheets.
Collection of land use data	Data will be sought from each First Nation and Métis community on how the Project may potentially affect their ability to hunt, fish, trap, or conduct other traditional activities, as a result of changes to the surrounding environment. This may involve conducting interviews with individual land users or Elders.



Table 1: Consultation Plan Tasks

Name of Task	Description of Task
Specific Community Concerns	If requested by a First Nation or Métis community, Berger (or their representatives) will meet with each community to discuss in more detail comments and concerns from the potentially affected community. Concerns will be considered during Project planning, and a strategy to avoid or mitigate potential adverse effects will be developed with the community. Overall, Berger will incorporate, where appropriate, the views of First Nations and Métis communities to avoid or limit the effects on hunting, fishing, trapping and traditional activities, into the Project designs. Any decision or agreements with the communities will be documented.
Follow Up	Berger will provide an opportunity to follow up and provide summary results of the completed environmental assessment to each First Nation and Métis community. If required, Berger will participate further with consultation activities between the MOE and the First Nations and Métis communities.

MOE = Saskatchewan Ministry of Environment; Berger = Berger Peat Moss Ltd.; Golder = Golder Associates Ltd.

The number and scope of the Duty to Consult meetings will be dependent on the individual expectations and preferences of each First Nation or Métis community. Berger has engaged Golder Associates Ltd. (Golder) to assist Berger in carrying out the Consultation Plan, this includes contacting each community to set up meetings, providing information materials to communities, participating in phone calls and attending meetings with or on behalf of Berger as necessary. Berger will be responsible for the cost of implementing this Plan.

5.0 CONSULTATION SUMMARY AND REPORT

Berger will document all correspondence, attempts at correspondence, communication, and meeting summaries. A report summarizing these activities will be provided to MOE and included in the Environmental Impact Statement. The following information will be included:

- list of First Nations and Métis communities provided with Project-specific information;
- copies of Project-specific information provided to the First Nations and Métis communities;
- how and when the Project-specific information was given to the First Nations and Métis communities;
- dates and locations of activities or meetings with First Nations and Métis communities;
- names of individuals contacted and lists of participants of all activities or meetings with First Nations and Métis communities;
- minutes of all meetings or other records of decisions;
- summary of all consultation efforts and outcomes, including concerns raised by First Nations and Métis communities;
- summary of any land use information shared with Berger with respect to hunting, fishing, trapping or other traditional activities; and
- proposed follow-up plan with First Nations and Métis communities.

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