Peat Harvest Licence No. 4 – South Washow Peatland Recovery Plan

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Revision	**Rev.Date**	**Revision Memo**	**Prepared by**	**Checked by**	**Approved by**

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1.0 Introduction

1.1 Project Overview

Sun Gro Horticulture Canada Ltd. (Sun Gro) retained Vertex Professional Services Ltd. (Vertex) to complete a Peatland Recovery Plan (PRP) for the South Washow *Sphagnum* peat harvest operation (hereafter referred to as "South Washow"), currently operating under Peat Harvest Licence (PHL) No. 4 (Appendix A). The PRP prepared by Vertex was submitted June 2018. Subsequently, Sun Gro retained Kontzamanis Graumann Smith MacMillan Inc. (KGS Group) in August 2018 to review the PRP and recommend revisions, which have been incorporated into this document, in response to review comments received from the Forestry and Peatlands Branch. This PRP has been prepared in accordance with *Manitoba's Submission Guidelines for Peatland Recovery Plans - Peatland Management Guidebook* (Manitoba Sustainable Development, 2017) to fulfill the requirements of *The Peatlands Stewardship and Related Amendments Act* (Government of Manitoba, 2015). The report describes the actions Sun Gro will be taking to restore the harvest area at the South Washow PHL sub-areas once operations are complete.

1.2 Background

The overall recovery objective for South Washow is to return it to a self-sustaining, peat accumulating ecosystem. Once harvest activities are complete, action will be taken to recover the former bog area to bog conditions. The average residual peat depth on-site prior to recovery activities will be approximately 0.5 m.

Given the extensive and lengthy drainage regime on-site, one of the biggest challenges to recovery will likely be re-wetting the area successfully. The other challenge will be re-vegetating to bog conditions, as it will largely depend on the success of re-wetting actions. Undesirable plant species from surrounding areas may readily establish on the bare post-harvest sites, which could alter the recovery trajectory from that of a peat accumulating ecosystem.

2.0 Baseline Information

2.1 Pre-disturbance Site Conditions

The South Washow PHL lies within the Boreal Plains Ecozone, Mid-Boreal Lowland Ecoregion, and Grindstone Ecodistrict, a region covered in natural fens and bogs (Smith et al., 1993). Deep Fibrisols on *Sphagnum* moss peat are widespread throughout the area, as are deep Mesisols on sedge and brown moss peat. The dominant vegetation in fens includes sedges (*Carex* spp.), tamarack, shrubs and brown moss, and black spruce, *Sphagnum* mosses and shrubs dominate bogs. Drainage is east towards Lake Winnipeg.

The climate of this area is characterized by short, warm summers and long, cold winters (Smith et al., 1993). Mean annual precipitation is 580 mm.

2.1.1 Ramsay Point

An Environment Act Proposal (EAP) for Ramsay Point provides detailed information on the site prior to harvest operations (Kontzamanis Graumann Smith MacMillan Inc., 2010). Prior to disturbance, Ramsay Point was a lightly to moderately treed raised bog with open *Sphagnum* moss areas.

2.1.2 Sugar Creek A

Sugar Creek A was assessed in 2017 and found to be unsuitable for harvest; therefore, no recovery plan has been developed for this sub-area (Vertex Professional Services Ltd., 2017).

2.1.3 Sugar Creek B

Sugar Creek B will not be harvested within the timeline of this PHL, therefore, no recovery plan has been developed.

2.1.4 Sugar Creek C, D and E

Sugar Creek C, D and E are part of the same contiguous bog, and, as they will be harvested together, they will be considered together in the proceeding discussions. A 2017 survey of the bog found the average depth to be 2 m of harvestable peat (Vertex Professional Services Ltd., 2017). The pH and electrical conductivity (EC) values were measured to be 4.6 and 100.7 µs/cm (Sugar Creek C), 4.3 and 84 µs/cm (Sugar Creek D) and 3.9 and 75 µS/cm (Sugar Creek E). *Sphagnum fuscum, S. warnstorfii, S. angustifolium, S. magellanicum* and *Hamatocaulis vernicosus* were the dominant peat-accumulating species. Black spruce, tamarack, jack pine (*Pinus banksiana*), leatherleaf (*Chamaedaphne calyculata*), Labrador tea, bog cranberry (*Vaccinium oxycoccus*) and bog rosemary (*Andromeda polifolia*) were also found on-site.

2.2 Current Conditions of Immediate Surrounding Areas

The area surrounding the South Washow PHL is mainly Crown land leased for pulpwood and saw log forestry (Kontzamanis Graumann Smith MacMillan Inc., 2010). The proximity to Lake Winnipeg and provincial parks means the surrounding land is widely used for recreation (cottages, parks and campgrounds), and for fishing and trapping by the Peguis First Nation, Fisher River Cree Nation, Kinonjeoshtegon First Nation, and Bloodvein First Nation. In particular the area is within the Fisher River Cree Nation Community Interest Zone.

2.2.1 Ramsay Point

The nearest community to Ramsay Point is Riverton, located approximately 40 km southeast. Beaver Creek Provincial Park is adjacent to the harvest area, and Grindstone Provincial Park is approximately 30 km southeast. Sunterra operates a peat harvesting area approximately 8 km northeast of Ramsay Point, and provincial highway 234 is approximately 2.5 km east of the harvest area. The sub-area is otherwise surrounded by wetlands, including fens and bogs, and interspersed with forested uplands.

There are no known activities planned or underway for the surrounding area that would influence recovery for this sub-area.

2.2.2 Sugar Creek C, D and E

Provincial road 325 runs approximately 7 km south of the Sugar Creek sub-area, and agricultural fields can be found within 10 km of the harvest area, between the community of Shorncliffe and Provincial road 325. The sub-area is otherwise surrounded by wetlands, fens and bogs and interspersed with forested uplands.

There are no known activities planned or underway for the surrounding area that would influence recovery for this sub-area.

3.0 Recovery Overview

3.1 Post-harvest Site Conditions

3.1.1 Ramsay Point

Ramsay Point has approximately 1,115 ha of harvestable area, 246 ha of which are currently being harvested. Sun Gro plans to open a new field each year (each field being approximately 82 ha in size) until 2030. Harvesting operations are projected to be complete in the currently active harvest area in 2034, and a field will close each following year until 2068, assuming each field can sustain harvest operations for approximately 20 years (Figure 1a). Once all harvesting operations are complete, it is proposed that there will be an average of 0.5 m of residual peat. Figure 5 in the corresponding PMP for South Washow provides a cross-section schematic of residual peat depths, Von Post classification and topographic variability for the site.

Post-harvest fields are regularly harrowed and checked for weeds, but no additional recovery activities will take place until all harvesting within the sub-area is complete.

3.1.2 Sugar Creek C, D and E

Sugar Creek C, D and E combined have 520 ha of harvestable peat. This sub-area is currently undeveloped, preparation of 70 ha is planned in 2021. Harvesting will continue within the sub-area until 2069, at which point it is expected that an average of 0.5 m of peat will remain on-site. Figure 5 in the corresponding PMP for South Washow provides a cross-section schematic of residual peat depths, Von Post classification and topographic variability for the site.

3.2 Recovery Objectives

The overall recovery objective for South Washow is to return the PHL area to a peat accumulating ecosystem, specifically to bog conditions. This requires restoring soil and hydrological conditions to support a self-sustaining vegetation community that will allow for peat accumulation.

Once harvest activities are complete, recovery activities will commence: drainage ditches will be progressively filled or blocked, and the harvest area will be re-contoured to connect to the surrounding environment and facilitate re-wetting to create a habitat favourable to peatland species, such as *Sphagnum* moss, black spruce and Labrador tea. Willows, harvested from within the PHL boundary, will be planted in the marginal areas to stabilize the soil and the MLTT will be used to introduce peatland vegetation species to the recovery area (LeBlanc et al., 2012). Straw mulch and fertilizer, if necessary, will be applied to the transferred moss layer, and monitoring will commence. Once a trajectory of recovery to bog conditions has been identified, likely within 5 to 10 years following re-wetting, access roads into the site will be decommissioned and recovered to peatland conditions for continuity across the site.

Specific recovery objectives for South Washow are as follows:

- Re-contour the site and connect it to the surrounding area, facilitating natural infill of peatland vegetation
- Raise the water table and ensure even wetting across the site, consistent with natural peatland conditions
- Establish a self-sustaining vegetation community that will allow for peat accumulation

3.3 Recovery Schedule

The recovery process for the South Washow sub-areas is outlined in Figures 1a and 1b and Table 1.

Prior to the start of recovery operations, fields classified as 'post-harvest' will be harrowed annually to prevent weed establishment. Recovery operations will begin once all harvesting at a sub-area is complete. All drainage ditches, roads and infrastructure within this area will be decommissioned and recovered.

Recovery operations are estimated to take up to 2 years, contingent upon weather and equipment. Monitoring will begin as soon as recovery operations are complete and is scheduled to take place 1, 3, and 5 years following plant spreading. The recovery trajectory at the end of 5 years will determine if and when the access roads are decommissioned. Roads will be decommissioned and recovered to bog conditions after all other areas have been successfully recovered. Once monitoring is complete, and Sun Gro and the government are satisfied with the trajectory, roads can be decommissioned, and these areas recovered to bog conditions.

3.4 Final Recovery Plan

Once harvesting is complete, clay berms, terraces and ditches will surround the harvested areas. The water table will be below peat level and average residual peat depth will be 0.5 m (Figures 2a and 2b).

Re-contouring will involve removing the berms and filling lateral and perimeter ditches to create shallow slopes (no greater than 3:1), allowing the topography of the disturbed area to blend with the surrounding environment and raise the water table. Donor material will be spread over the re-contoured area to introduce peatland vegetation, stabilize the slope and reduce erosion potential.

Following donor material placement, mulching and fertilizing, the vegetation will be given 1 year to establish on-site before any vegetation monitoring takes place. Over time, trees, shrubs, grasses and moss from the surrounding area are expected to establish through natural ingress, allowing for the development of peatland vegetation species and conditions (Figures 2a and b). Ideally, the recovered sub-areas will blend in with the surrounding environment and the site will return to a peat accumulating state.

4.0 Recovery Methods

As per the *Peatland Restoration Guide*, site recovery will consist of six stages: blocking ditches, surface preparation, vegetation collection, vegetation spreading, straw spreading and fertilizer application (Quinty and Rochefort, 2003).

4.1 Blocking Ditches

The water table must be raised to restore conditions on-site to support the development of a peat accumulating ecosystem. *The Canadian Wetland Classification System* defines a bog as peatland with a water table at or slightly below the surface, so while there is no prescribed depth for the water table, bringing it close to the surface will promote the establishment of *Sphagnum* mosses and shrubs, keeping the site similar to its surroundings (National Wetlands Working Group, 1997). Lateral, perimeter and outlet ditches will either be fully filled with peat from adjacent spoil or unused stockpile peat or, if insufficient material is available, blockages will be created at a minimum of every 100 m along the ditches. Filling ditches will be prioritized over blocking in areas where the flow

of water is perpendicular to the ditch. Filling or blocking ditches will be progressive, starting upstream and moving to downstream areas. Progressive filling will allow for minor adjustments to be made to increase or decrease water levels (e.g. creating berms to retain water or leaving some ditches open to allow for drainage) rather than requiring major, site-wide changes. It will also reduce the potential for flooding, which could affect both on-site and off-site areas. If any drainage to off-site areas is required to prevent flooding, this will be directed through the existing outlet ditches.

4.2 Surface Preparation

The peat remaining after harvest will be used as the substrate for vegetation establishment; no additional reclamation material will be added. Residual peat depths will vary, but the average thickness across the site will be 0.5 m. The residual peat conditions are expected to be suitable for establishing a peat accumulating ecosystem: pH should range from 3.5 to 7.5, electrical conductivity (EC) should be less than 500 µS/cm and humification is expected to be between H4 and H8.

Harvest procedures change the meso- and micro-topography of the site, and, in some areas, can create a severely hummocky peat surface. In other areas, smooth surfaces will gently slope toward lateral drainage ditches. To create meso- and micro-topography consistent with the surrounding environment and suitable for peatland vegetation establishment, areas will be levelled to create a smooth or slightly rough surface (elevation differences of less than 10 cm). Levelling will also remove any peat crusts and non-peatland vegetation that would impede the establishment of the moss donor material.

To allow the harvested area to blend in with the surrounding landscape, a maximum 3:1 slope will be constructed along the outside margins of harvested areas using either peat, mineral soil capped with at least 15 cm peat, or a peat-mineral mix, depending on the soil type of the adjacent area.

4.3 Vegetation Collection

Donor material will be collected from pre-determined donor sites (Figures 3a and 3b), which are mostly undisturbed areas within the PHL boundary that support natural bog and fen vegetation. Material will be collected at a 1:10 ratio of donor material to total disturbed area. Collection of material from bog donor sites will be prioritized.

4.4 Vegetation Spreading

Plant material will be spread over the recovery area to a depth of 1 to 2 cm. Once plant material has been placed, additional disturbance to the area will be minimized to encourage vegetation establishment. Trees and shrubs are expected to establish on-site through natural ingress over time.

4.5 Straw Spreading

Straw mulch helps prevent evaporation from the recovering peat surface and acts as a protective layer for the donor plant material. Weed-free straw will be applied to the area as soon as possible following donor material spreading at a rate of 3,000 kg/ha, as per the *Peatland Restoration Guidelines* (Quinty and Rochefort, 2003).

4.6 Fertilizer Application

Fertilizer may be applied following donor material and straw spreading in recovery areas where vegetation establishment and development is poor due to insufficient nutrients. If necessary, and depending on soil test results, rock phosphate will be applied at a rate of up to 150 kg/ha or phosphate fertilizer (P_2O_5) at a rate of up to 19.5 kg/ha (Quinty and Rochefort, 2003).

5.0 Moss Donor Sites

5.1 Site and Source Material Description

5.1.1 Ramsay Point

The total recovery area for Ramsay Point is expected to be 1,129 ha. Given that the moss donor site should be 10% of the recovery area (Quinty and Rochefort, 2003), the donor site for Ramsay Point must be at least 113 ha. Sun Gro has committed to maintaining a 100 m buffer around the harvest area to act as a moss donor site when it comes time to recover the area (Figure 3a), an area approximately 399 ha in size.

5.1.2 Sugar Creek C, D and E

The total recovery area for Sugar Creek C, D and E sub-areas is 539 ha. Given that the moss donor site should be 10% of the recovery area, the donor site for Sugar Creek must be at least 54 ha. An inspection of satellite images suggests that the land west and south of the harvest area, within the PHL boundary, could provide suitable donor material (Figure 3b as D-1, D-2, D-3, D-4 and D-5), an area of approximately 227 ha in size.

5.2 Material Collection

Plant material will be collected in late fall or winter, under frozen conditions, to minimize damage to the donor site from machinery and the risk of machinery sinking in soft ground, and to allow rapid recovery of the donor site (Quinty and Rochefort, 2003). To reduce disturbance to donor material, collection will be prioritized along existing cut lines or clearings. If suitable material is not available along existing cut lines or clearings, new linear clearings will be made. Cleared lines will have a maximum width of 3 m and follow a wandering path to reduce the line of sight. Lines will be spaced at a minimum distance of 50 m apart.

For best results, the MLTT approach suggests that approximately 90% of a living moss layer be collected to a depth of approximately 10 cm from an area representing 10% of the recovery area (LeBlanc et al., 2012). The remaining 10% of the living moss layer will be left to re-vegetate the donor site. The living moss layer will be shredded to pieces between 1 and 3 cm long using a rotovator or similar equipment and collected into piles for transport to the recovery site (LeBlanc et al., 2012; Quinty and Rochefort, 2003).

5.3 Material Placement

Donor material should be spread as soon as possible following collection, but if the material cannot be spread within 3 days of collection, large stockpiles will be created in strategic locations to minimize transport time. Stockpiles created in late winter should be in place for no more than 3 weeks; those stockpiles created in the fall could sit for 6 months before placement to ensure regeneration potential from the donor material is maintained.

To reduce the risk of equipment problems with soft ground, donor material will be spread in either late winter or fall (Quinty and Rochefort, 2003). Donor material will be spread, using a manure spreader or similar equipment, as

evenly as possible over the whole recovery area to a depth of 1 to 5 cm, according to a rate of 1 m2 donor material to 10 m2 spreading area (Quinty and Rochefort, 2003). As soon as possible following donor material spreading, straw mulch will be applied at a rate of 3,000 kg/ha, the minimum rate required to maximize plant establishment. To reduce disturbance to donor material, and equipment and resource expenses, straw should be spread using a sideways straw spreader or similar equipment. Depending on the results of soil fertility tests, rock phosphate fertilizer may then be applied at a rate of 150 kg/ha to encourage peatland vegetation establishment.

6.0 Trees and Vegetation

The Timber Damage Appraisal found no areas of merchantable timber on-site, so reforestation will not be addressed in this report (Appendix C).

7.0 Decommissioning and Re-vegetating Roads and Structures

Decommissioning of all facilities on-site will include the following:

- Phase I and, where necessary, Phase II Environmental Site Assessments to identify any areas of contamination
- As requested in the *Guidelines for Environmental Site Assessments in Manitoba* (Manitoba Sustainable Development, 2016), assessment criteria for any remediation work will use the most current versions of the *Canadian Environmental Quality Guidelines*, the *Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil*, and Health Canada *Guidelines for Canadian Drinking Water Quality* wherever possible. If these guidelines do not provide adequate information to assess a specific parameter, published guidance documents from another jurisdiction will be used following approval from relevant government representatives

7.1 Decommissioning Processing Facilities, Secondary Structures and Storage Areas

Most of the infrastructure was constructed on clay capped with gravel. The gravel layer will be removed and returned to borrow pits where possible, or it may be screened and sold for re-use. Where possible, the clay layer will be excavated and returned to borrow pits, or it may be used as part of the site recovery process.

Some areas were built on concrete pads. Once building materials have been removed, concrete pads will be destroyed, and the concrete will be hauled off-site to an appropriate waste disposal facility.

7.2 Decommissioning Roads

Regular monitoring of the site's recovery progress will take place for at least 5 years once recovery operations are complete, so roads required for access during monitoring will remain in place until monitoring activities have been completed. Roads will be decommissioned and reclaimed progressively following the timeline of recovery and monitoring activities.

Once roads are deemed unnecessary they will be decommissioned according to the *Manitoba Forestry Road Management Guidelines* (Manitoba Conservation and Water Stewardship, 2012). Depending on the condition and location of the road, the process may include the following:

- Removal of any water crossings

- Implementation of erosion prevention measures at water crossings and along the road
- Removal of any arch culverts or bridge structures
- Posting signs, for the safety of others, to indicate road closure

Roads were made of ditching material capped with gravel. The gravel layer will be removed and returned to borrow pits where possible, or it may be screened and sold for re-use. Where possible, the ditching material layer will be excavated and used as part of the site recovery process.

For those roads or laydown areas constructed on peat, the peat will be partially or fully removed to create a surface level with the surrounding area, and the peat will be used for filling ditches or as reclamation material.

For any roads constructed using clay capped with gravel, the gravel layer will be removed and returned to borrow pits where possible, or it may be screened and sold for re-use. Where possible, the clay layer will be excavated and returned to borrow pits, or it may be used as part of the site recovery process.

7.3 Recovery of Decommissioned Infrastructure Sites

Infrastructure sites are constructed on pads of clay capped with gravel. There are three approaches for recovering padded areas, depending on the material remaining on-site after decommissioning.

7.3.1 Preferred Approach – Peat Inversion

Gravel and clay are removed and returned to borrow pits or sold for re-use. The exposed peat layer must then be de-compressed to create a level surface across the site that is conducive to connected vertical and lateral water flow (Bird et al., 2017). The bucket of a backhoe is used to turn, or 'fluff', the top 1 m of compressed peat across the whole area. The fluffed surface is then lightly tapped down using the back of the bucket until the peat is within approximately 10 cm of the elevation of the surrounding area.

Once the peat has been de-compressed, the area will be re-vegetated using the MLTT and following the procedures described in Sections 4.3 to 4.6. Monitoring of recovery progress will take place for a minimum of 5 years following re-vegetation.

7.3.2 Alternative Approach 1 – Clay Inversion

Gravel is removed and returned to borrow pits or sold for re-use. If clay cannot be returned to a borrow pit, the compressed peat layer beneath the clay should be brought to the surface to support peatland conditions across the site.

Clay material is excavated to access the underlying peat material according to the techniques described by Bird et al. (2017) and Canada's Oil Sands Innovation Alliance (2017). A minimum of 50 cm of the underlying peat material is excavated and set aside so that it can be used to cap the infilled clay material. The excavated area is backfilled with clay material and then capped with the peat material. Once the peat is in place, any excess clay material will be removed from site and disposed of at an appropriate waste facility. The area will then be re-vegetated using the MLTT and following the procedures described in Sections 4.3 to 4.6. Monitoring of recovery progress will take place for a minimum of 5 years following re-vegetation.

7.3.3 Alternative Approach 2 – In-situ Recovery

The last alternative involves recovering the padded areas without entirely removing or inverting the clay layer (Canada's Oil Sands Innovation Alliance, 2017). Once the gravel cap has been removed, the clay layer is removed to an elevation that is level with the surrounding environment. The clay material removed will be disposed of off-site at an appropriate waste facility. An organic amendment (straw, stockpiled peat, etc.) will be mixed into the top 5 to 10 cm of clay to de-compact the layer and create a habitat more suitable for plant growth.

Depending on the water levels within the clay layer, ditches and holes may be dug across the site to encourage hydrological connectivity with the surrounding peatland and to ensure sufficient moisture for plant establishment. Once the clay layer is sufficiently wet, donor material can be spread across the area using the MLTT and following the procedures described in Sections 4.3 to 4.6. Monitoring of recovery progress will take place for a minimum of 5 years following re-vegetation.

8.0 Monitoring and Assessment

The overall recovery objective is to restore South Washow to a self-sustaining peat accumulating ecosystem, specifically to bog conditions. Monitoring of recovery progress will commence once recovery operations (re-contouring, re-wetting and donor material spreading) are complete and the area is left to sustain itself. Monitoring will be conducted to identify restoration deficiencies, determine corrective actions, and, ultimately, determine if peatland conditions have been sufficiently recovered. Recovery progress will be reported to Manitoba Sustainable Development following each round of monitoring. When Manitoba Sustainable Development agrees that the PHL has been successfully recovered and all licence criteria have been met, the licence will be surrendered to the Forestry and Peatlands Branch of Manitoba Sustainable Development, and responsibility for the site will return to the Crown.

The following table details the monitoring objectives and thresholds for South Washow.

Recovery Objective	Recovery Target	Indicator	Threshold	Assessment Procedure	Monitoring Schedule
Re-contour the site to connect it to the surrounding area	Re-contoured slopes and ditches are stable and soil erosion is minimal	Topography	• Grass and low-lying vegetation cover ≥ 70% in re-contoured areas	• Visual assessment of erosion • Vegetation assessment plots (% cover) of sloped areas	Years 1, 3 and 5
Raise water table and ensure sufficient wetting across the site	Stabilized water level near the top of the peat layer to facilitate growth of natural peatland vegetation species	Hydrology	• Water level is between -40 cm and +10 cm of ground surface throughout growing season • Peat is wet or moist • Water is not flowing out of the recovery area to drainage ditches unless water table needs to be lowered due to flooding	• Visual inspection of surface water and measurements of depths and areas as needed • Installation of water wells to monitor water table levels beneath reclaimed surface • Regular inspection of water levels in drainage ditches	Years 1, 3 and 5
Establish a self-sustaining vegetation community on-site that resembles that of surrounding peatland	Water chemistry consistent with natural peatland ecosystems	Hydrology	• pH is between 3.5 and 7.5 • EC is < 500 µs/cm	• pH and EC testing	Years 1, 3 and 5
	Bog vegetation cover increases throughout monitoring period	Vegetation	• Peatland vegetation cover > 75% • Non-peatland species < 50% cover	• Vegetation assessment plots (% cover by species, health)	Year 1, 3 and 5
	Establishment of trees and shrubs along transitional areas	Tree density	• 100 stems/ha of mixed black spruce and tamarack	• Sapling count and vegetation assessment plots (% cover by species)	Years 1, 3 and 5
	Absence of weeds throughout site	Vegetation	• Weed cover is < 1% in 1 ha area	• Regular visual inspections for weeds on-site • Vegetation assessment plots (% cover by species)	Years 1, 3 and 5
Minimize impact on surrounding areas	Donor sites return to their original condition	Vegetation	• Increased cover of desirable vegetation species at donor site • Weed cover is < 1%	• Vegetation assessment plots (% cover by species)	Year 1

9.0 Research

Sun Gro currently collaborates on peatland restoration research activities with PERG at Université Laval, in addition to researchers at the University of Waterloo, Brandon University and Ducks Unlimited Canada. Research currently takes place at sub-areas within the No. 2 (Elma) and No. 3 (Julius). No research has been planned for South Washow, but that may change as development progresses. The results of the research carried out in the Eastern Region PHLs will help inform recovery decisions for these newer harvest areas in the Interlake Region.

10.0 Adaptive Management Strategies

Adaptive management strategies will be developed and applied, as required, based on monitoring and research results.

10.1 Sensitive Wildlife and Vegetation Species in the Area

Six instances of the tuberous grass pink orchid (*Calapogon tuberosus*) were identified during the EAP for Ramsay Point (Kontzamanis Graumann Smith MacMillan Inc., 2010); twice along the proposed development area and four times outside the development area. The adverse effects of developing in the area were found to be moderate, given that the plant is considered rare in Manitoba, but not at a national level. Special measures were taken to minimize the impact to this orchid by informing staff of each plant's location to avoid unintentional disturbance, and by coordinating additional monitoring of its existence and health with the Native Orchid Conservation Inc.

10.2 Pool Creation

Depending on site conditions after surface preparation, or if ditch filling/blocking fails to retain sufficient moisture to re-wet the peat, pools may be created to encourage more re-wetting of the site as required. Pools should not exceed 2 m in depth and will not contact the mineral layer underlying the peat (Quinty and Rochefort, 2003).

10.3 Fertilizer Application

In the event that establishment and growth of moss species are not meeting recovery target thresholds, soil samples should be collected as part of the following round of monitoring to test nutrient levels, particularly phosphorus. Phosphorus is known to be a limiting factor to the establishment and growth of mosses, so if phosphorus levels are low, fertilizer should be applied to the site to facilitate moss establishment. Slow release phosphate fertilizers, such as granulated phosphate rock, are recommended for their high efficiency and should be applied at rates of 150 kg/ha (Quinty and Rochefort, 2003).

10.4 Low Vegetation Establishment

Should the recovery area show no re-vegetation by peatland species at the end of the monitoring period, despite all recommended restoration actions being followed, the site may be reclaimed to an alternative ecosystem. This strategy would only be implemented with approval from Manitoba Sustainable Development.

Trees and shrubs are expected to establish on-site through natural ingress. If natural ingress is not evident within the first 5 years of vegetation assessments, saplings and shrubs will be sourced from local nurseries and planted throughout the site to obtain the desired species density.

10.5 Non-target Species and Weed Management

Sun Gro has a weed control procedure in place to keep weeds from establishing on the bog perimeters or the peat fields (Sun Gro Horticulture Canada Ltd., 2017). This procedure involves a combination of harrowing, glyphosate herbicide application and spot-spraying in non-peat areas, hand-picking in areas inaccessible to mobile equipment. Equipment is thoroughly cleaned between bogs to prevent cross-field contamination and weed checks are carried out on a weekly basis.

For areas undergoing re-vegetation, weeds will be controlled through hand-picking, localized mowing or spot-spraying of herbicide. The method used will depend on the number of weeds, location/access, proximity to sensitive wetlands and waterbodies, and type, cover and height of native vegetation. Spot-spraying will be utilized for persistent patches of weeds. Mowing or tilling will be used for large patches where there is minimal native vegetation. Hand-picking will be used for small patches where there is high cover of native vegetation and/or areas within 30 m of sensitive wetlands or waterbodies.

10.6 Fire Response

Sun Gro has a fire hazard suppression protocol, which includes employee training in fire hazard suppression and control (Sun Gro Horticulture Canada Ltd., 2018a and b). This protocol meets the standards of the *Manitoba Wildfires Act* (Government of Manitoba, 2015b). Firefighting drills are held regularly to familiarize employees with equipment and test response times.

To prevent fires from occurring, stockpiles are limited to 12 x 30 ft and their temperature is probed weekly to ensure that it is not excessively heating. Fireguards around sites are maintained, brush and residue are burned in winter months on snow cover, and hot spot infrared scans are done after a fire is put out to reduce risk of spread. If small spot fires are observed, the burning peat is gathered into a water pail to prevent spreading. Equipment is regularly maintained and checked to ensure that spark arrestors are functional.

In the event of an on-site fire, employees are trained to notify their team members or team lead and respond in accordance with the Fire Protocols described in the South Washow Peatland Management Plan. If the fire is manageable, the nearest fire department will be contacted immediately, and employees will work to limit the spread of fire. If the fire is large or conditions are unsafe, employees will evacuate, and the nearest fire department will be notified.

11.0 References

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FIGURES

N

Moose Creek Wildlife Management Area

Ramsay Amendment 1 65 ha

Moose Creek Wildlife Management Area

Beaver Creek Provincial Park

Ramsay Amendment 2 64 ha

Ramsay Point 1659 ha

Moose Creek Wildlife Management Area

bing

Legend

- Peat Harvest Licence Area
- Peat Surface Lease
- Recovery Site 1
- Recovery Site 2
- Moose Creek Wildlife Management Area
- Provincial Park
- Outlet Ditch
- Perimeter Ditch
- Lateral Ditch
- Secondary Road

0 200 400 800 m

1:20,000

Aerial Image from Bing Maps, 2014

sungro HORTICULTURE

Recovery Sites Ramsay Point

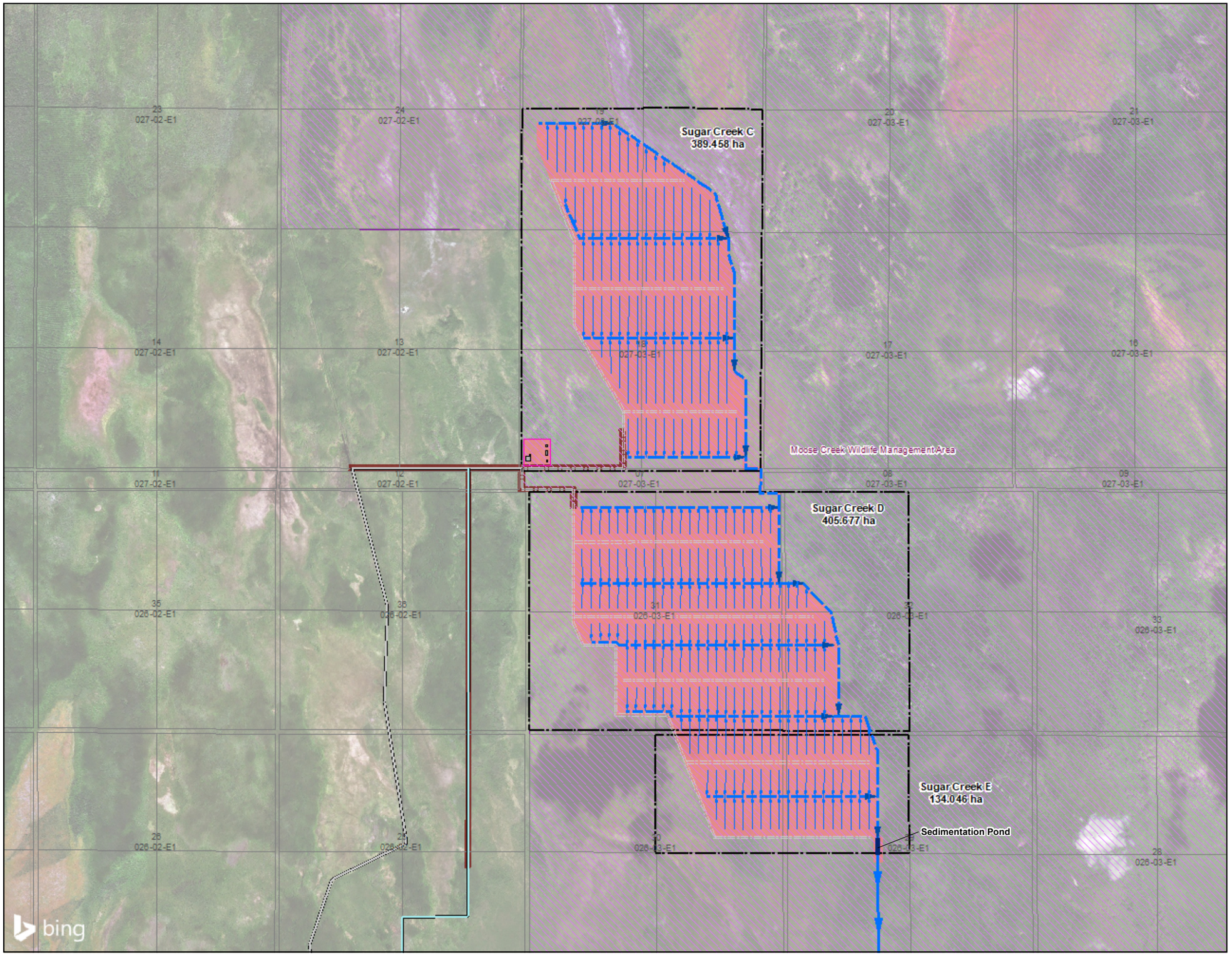
VERTEX

DRAWN:	PS
APPROVED:	MM
DATE:	AUG 23/19

FIGURE: 1a

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects\Sun Gro Horticulture\MXDs\2018\18N-01650 (Manitoba PRPs)\South Washow\Figure 1a Recovery Sites Ramsay Point.mxd



N

Legend

- Peat Harvest Licence
- Proposed Peat Surface Lease
- Recovery Site 1
- Recovery Site 2
- Moose Creek Wildlife Management Area
- Lateral Ditch
- Outlet Ditch
- Perimeter Ditch
- Proposed Access Road (Existing Trail)
- Alternate Access Road
- Secondary Road

0 0.25 0.5 1 km

1:25,000

Notes: Aerial Image from Bing, 2014

sungro HORTICULTURE

Recovery Sites
Sugar Creek C, D and E

VERTEX

DRAWN:	PS	FIGURE: 1b
APPROVED:	MM	
DATE:	AUG 23/19	

VERSATILITY. EXPERTISE.

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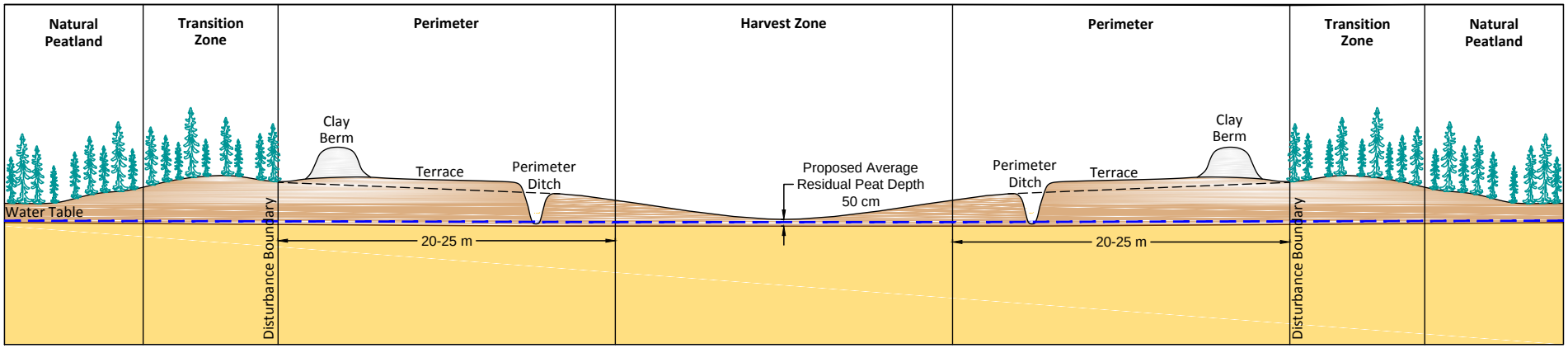
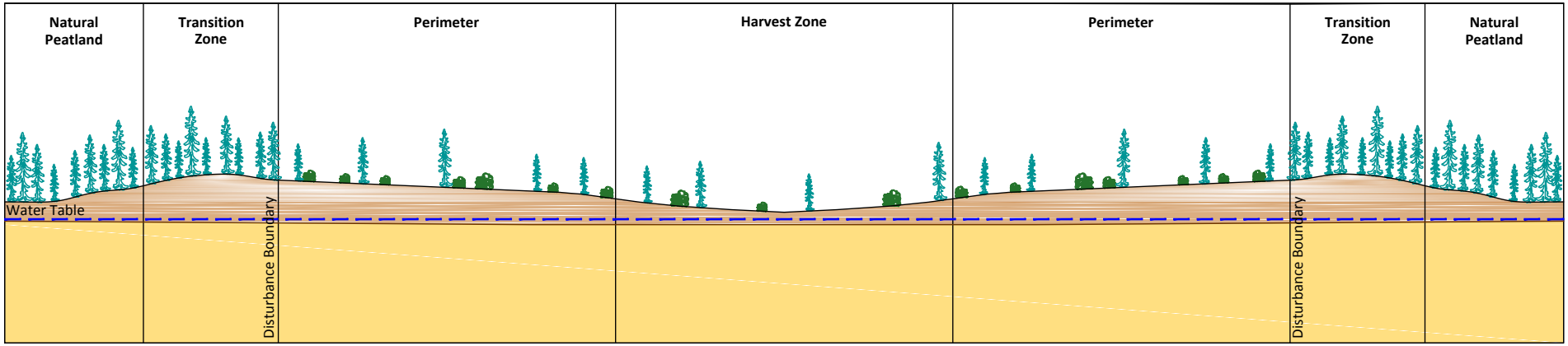


Post-Harvest



Post-Recovery

Legend

- Peat
- Subsoil
- Black Spruce
- Willow
- Shrub

NOT TO SCALE

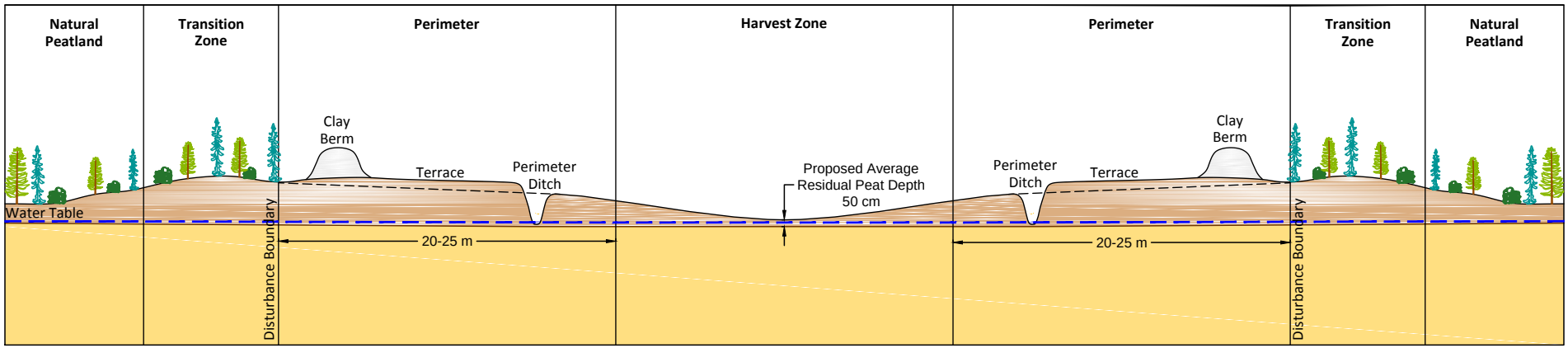
Sub-area Recovery Plan Ramsay Point

DRAWN:	JG	FIGURE: 2a
APPROVED:	IH	
DATE:	JUN 14/18	

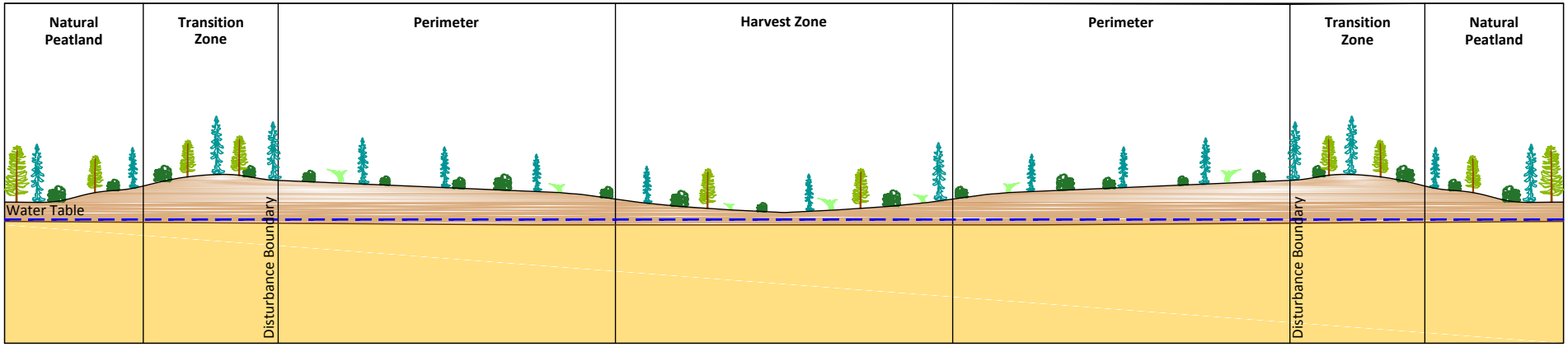
VERTEX

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects\Sun Gro Horticulture\MXDs\18N-01650 (Manitoba PHLs)\Cross Sections\18N-01650 Typical Sections.dwg



Post-Harvest



Post-Recovery

Legend

- Peat
- Subsoil
- Tamarack
- Black Spruce
- Willow
- Shrub
- Carex spp.

NOT TO SCALE

sungro HORTICULTURE

Sub-area Recovery Plan Sugar Creek C, D and E

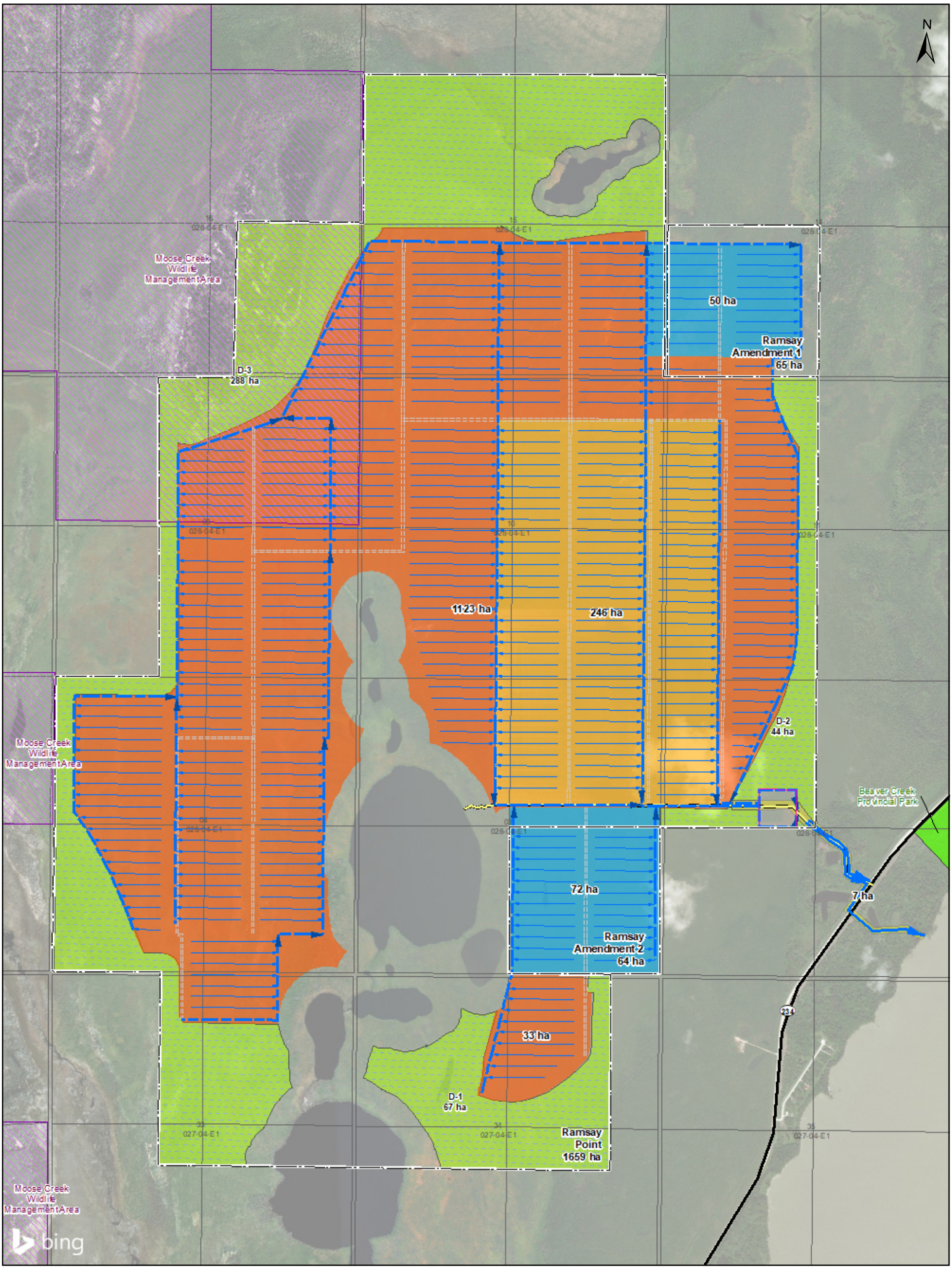
VERTEX

DRAWN:	JG
APPROVED:	IH
DATE:	JUN 14/18

FIGURE: **2b**

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects\Sun Gro Horticulture\MXDs\18N-01650 (Manitoba PHLs)\Cross Sections\18N-01650 Typical Sections.dwg



Legend

- Peat Harvest Licence Area
- Peat Surface Lease
- Active Harvest Area
- Pending Harvest Area
- Harvestable Area
- Peripheral Disturbance Area
- Donor Site
- Moose Creek Wildlife Management Area
- Provincial Park
- Outlet Ditch
- Perimeter Ditch
- Lateral Ditch
- Access Road
- Secondary Road

0 200 400 800 m

1:20,000

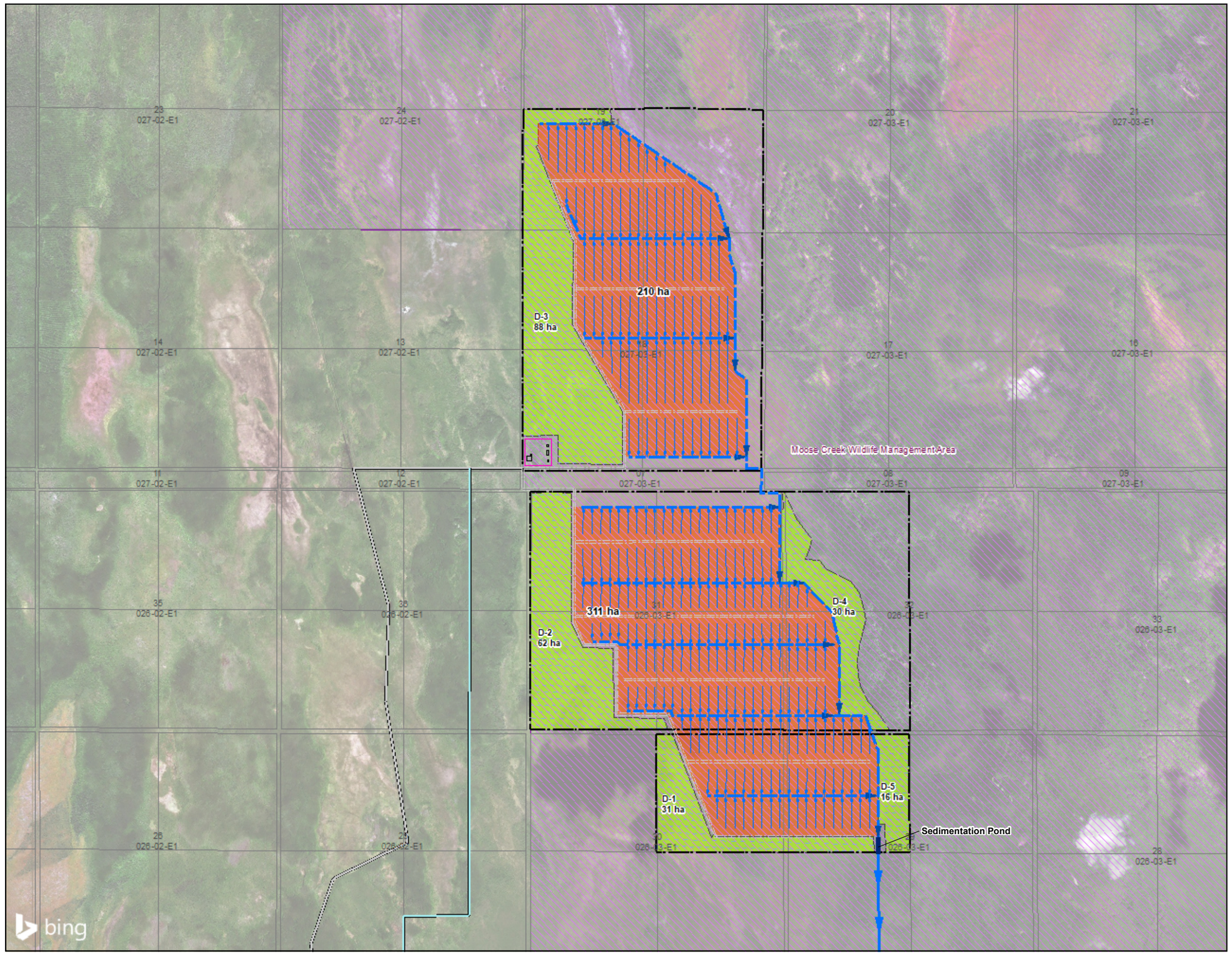
Aerial Image from Bing Maps, 2014

Proposed Moss Donor Site Locations Ramsay Point

VERTEX	DRAWN: PS	FIGURE: 3a
	APPROVED: MM	
	DATE: AUG 23/19	

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects\Sun Gro Horticulture\MXDs\2018\18N-01650 (Manitoba PRPs)\South Washow\Figure 3a Proposed Moss Donor Site Locations Ramsay Point.mxd



N

Legend

- Peat Harvest Licence
- Proposed Peat Surface Lease
- Harvestable Area
- Donor Site
- Moose Creek Wildlife Management Area
- Lateral Ditch
- Outlet Ditch
- Perimeter Ditch
- Proposed Access Road (Existing Trail)
- Alternate Access Road
- Secondary Road

0 0.25 0.5 1 km

1:25,000

Notes: Aerial Image from Bing, 2014

sungro HORTICULTURE

Proposed Moss Donor Site Locations Sugar Creek C, D, and E

VERTEX

DRAWN:	PS	FIGURE: 3b
APPROVED:	MM	
DATE:	AUG 23/19	

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects\Sun Gro Horticulture\MXDs\2018\18N-01650 (Manitoba PRPs)\South Washow\Figure 3b Proposed Moss Donor Site Locations Sugar Creek.mxd

TABLES

Table 1. Progressive Recovery Timeline
Sun Gro Horticulture Canada Ltd.
Peat Harvest Licence Area No. 4 - South Washow
Project #: 18N-01650

	Sub-area									
	Ramsay Point					Sugar Creek C, D and E				
Recovery Site	Size (ha)	Harvesting Initiated	Harvesting Ceased	Recovery Initiated	Recovery Operations Complete	Size	Harvesting Initiated	Harvesting Ceased	Recovery Initiated	Recovery Operations Complete
1	1123	2014	2068	2069	2071	527	2021	2069	2070	2072
2	7	-	-	TBD	TBD	12	-	-	TBD	TBD

"-" - Not Applicable

TBD - To Be Determined based on successful recovery trajectory

Recovery Site 1 - post-harvest and peripheral disturbance areas

Recovery Site 2 - the peat surface lease, processing facilities and stockpile area

APPENDIX A

Peat Harvest Licence

Manitoba

Licence No. / Licence n°: 4

Issue Date / Date de délivrance : June 15, 2015

REVISED/REVISE :

REVISED/REVISE :

Issued to:

SUN GRO HORTICULTURE CANADA LTD.

Issued for:

All those portions of sections 09-28-04, 10-28-04, 11-28-04, 02-28-04, 03-28-04, 04-28-04, 15-28-04, 16-28-04, 34-27-04, 33-27-04, 31-26-03, 30-26-03, 32-26-03, 29-26-03, 18-27-03, 19-27-03, 26-27-03, 28-27-03, 29-27-03, 27-27-03, 35-27-03, 23-27-03 and 22-27-03 EPM as shown on the map attached as Schedule "A" to this Licence;

(collectively the "Licence Area").

Licence term:

This Licence is valid until December 31, 2030

This Licence is issued in accordance with and subject to The Peatlands Stewardship Act, its regulations, both as may be amended from time to time, and the terms and conditions set out in this Licence.

<Signature removed>

DIRECTOR
THE PEATLANDS STEWARDSHIP ACT

DEFINITIONS

In this Licence,

"Active Area" means the area(s) within a Licence Area that are experiencing activities related to the peat harvesting process, such as, but not limited to, clearing of brush or trees, ditching, or the removal of materials. Also, an Active Area requires an Environment Act Licence and triggers the requirements for the restoration security under the Regulation;

"Crown" means Her Majesty the Queen in right of the Province of Manitoba, as represented by the Forest and Peatlands Management Branch of Manitoba Conservation and Water Stewardship, or such successor branch or agency of the Government of Manitoba;

"Crown Peat Return" means the statutory declaration required by the Regulation, as amended from time to time;

"Director" means the person appointed as the director of peatlands stewardship under The Peatlands Stewardship Act, or such successor to that person;

"The Peatlands Stewardship Act" or the **"Act"** means The Peatlands Stewardship Act (C.C.S.M., c. P31), as amended from time to time; and

"Regulation" means the Peatlands Stewardship Regulation (M.R. 82/2015), as amended from time to time.

AUTHORIZATION

1. Subject to the terms and conditions of this Licence, the Licencee is authorized to engage in peat harvesting by removing peat from Crown peatland within the Licence Area for commercial purposes, including any activity undertaken on or in respect of the Licence Area to facilitate the removal of peat from the Licence Area, continued vertically downward.

2. Thirty (30) days prior to making an area within the Licence Area active (Active Area), the Licencee shall notify the Director of its plan and provide the security required under clause 9 of this Licence.

PLANNING

i. PEATLAND MANAGEMENT PLAN

3. The Licencee shall submit to the Director a peatland management plan in accordance with the Act. The Licencee shall manage the Licence Area in accordance with the approved management plan.

ii. PEATLAND RECOVERY PLAN

4. The Licencee shall submit to the Director a peatland recovery plan in accordance with the Act. The Licencee must ensure that the activities set out in the approved peatland recovery plan are undertaken in the Licence Area and completed at the time set out in the plan.

5. Until the peatland recovery plan is approved by the Director, the Licencee shall comply with the Environment Act Licence requirements respecting the mine closure plan it prepared under the *Mine Closure Regulation 67/99.*

6. Any alteration of a peatland management plan or peatland recovery plan is subject to submission to the Director or a proposed alteration to that plan and approval by the Director of that alteration.

FEES AND CHARGES

7. The Licencee shall pay to the Crown an annual land reservation charge in accordance with the Regulation.

8. The Licencee shall pay to Crown the prescribed royalty fee by March 1st each year in accordance with the Regulation.

9. In accordance with the Regulation, the Licencee shall provide to the Director the form of security approved by the Director before any activity under this Licence begins in any Active Area.

RECORDS AND REPORTING

10. The Licencee shall make, maintain and submit to the Crown such records as are required by the Act and Regulation.

11. The Licencee shall make, maintain and submit to the Crown such reports as are required by the Act and Regulation.

12. The Licencee shall submit to the Director a Crown Peat Return, setting out the information required by the Regulation.

13. The Licencee shall meet with the Director, or his or her representatives, in each year of the Licence term. The Licencee will present its annual reports and annual plan at the meeting. The annual meeting may be held concurrently with any meeting required under The Environment Act Licence.

LIABILITY

14. The Licencee shall indemnify and save harmless Her Majesty the Queen in Right of the Province of Manitoba, her Ministers, officers, agents and employees from and against any and all claims, liability and demands for or by reason of anything done or omitted to be done by the Licencee or its agents or employees with respect to the Licence Area.

15. This Licence shall in no way limit Manitoba Hydro's or the Government of Manitoba's right to raise or lower the water levels on any body of water which may affect the Licence Area and Manitoba Hydro or the Government of Manitoba shall not be held liable for changes in the water level. This Licence does not imply any guarantee of water levels at the Licence Area.

GENERAL TERMS AND CONDITIONS

16. This Licence may be suspended, cancelled or its renewal refused in accordance with the Act and the Regulation.

17. In addition to the rights under clause 16 of this Licence, the Director may cancel this Licence if the Licencee makes an assignment for the benefit of creditors, becomes bankrupt or insolvent, takes the benefit of, or becomes subject to, any statutes that may be in force relating to bankrupt or insolvent debtors (the appointment of a receiver or receiver and manager of the assets of the Licencee being conclusive evidence of insolvency), or if any certificate or order is made or granted for the winding-up or dissolution of the Licencee, voluntarily or otherwise.

18. This Licence does not provide any other authority that may be required under federal or provincial enactments that may apply to the Licence Area or the Licencee's activities. The Licencee shall obtain and comply with all other authorizations as may be necessary for its activities on the Licence Area, including, but not limited to, a Licence under The Environment Act.

We, the undersigned Licencee, or duly authorized representative of the Licencee, have read, in their entirety, the terms and conditions contained in this Licence. We understand the rights and responsibilities attached to this Licence, and we further understand that failure to comply with any Licence terms and conditions may result in the suspension or cancellation of the Licence, or any other enforcement actions as provided for in The Peatlands Stewardship Act.

THE LICENCEE

<Signature removed>

Per: _____
Title:

Per: _____
Title:

I/We have authority to bind the Licencee.

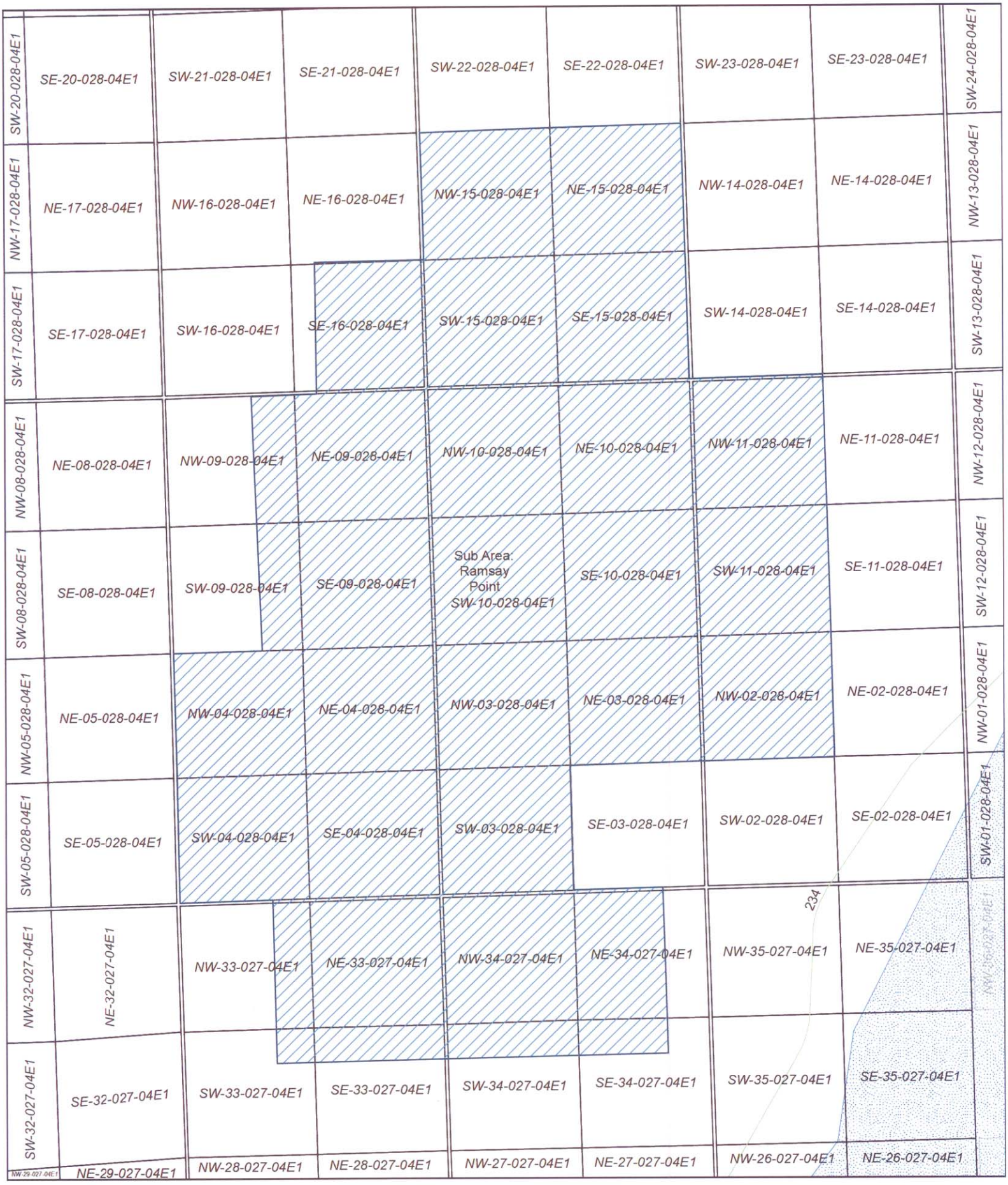
Schedule "A" Maps

Peat Harvest Licence No. 4

Company: SUN GRO HORTICULTURE CANADA LTD

Licence Group: South Washow

Sub Area: Ramsay Point
Sub Area: Sugar Creek A
Sub Area: Sugar Creek B
Sub Area: Sugar Creek C
Sub Area: Sugar Creek D
Sub Area: Sugar Creek E



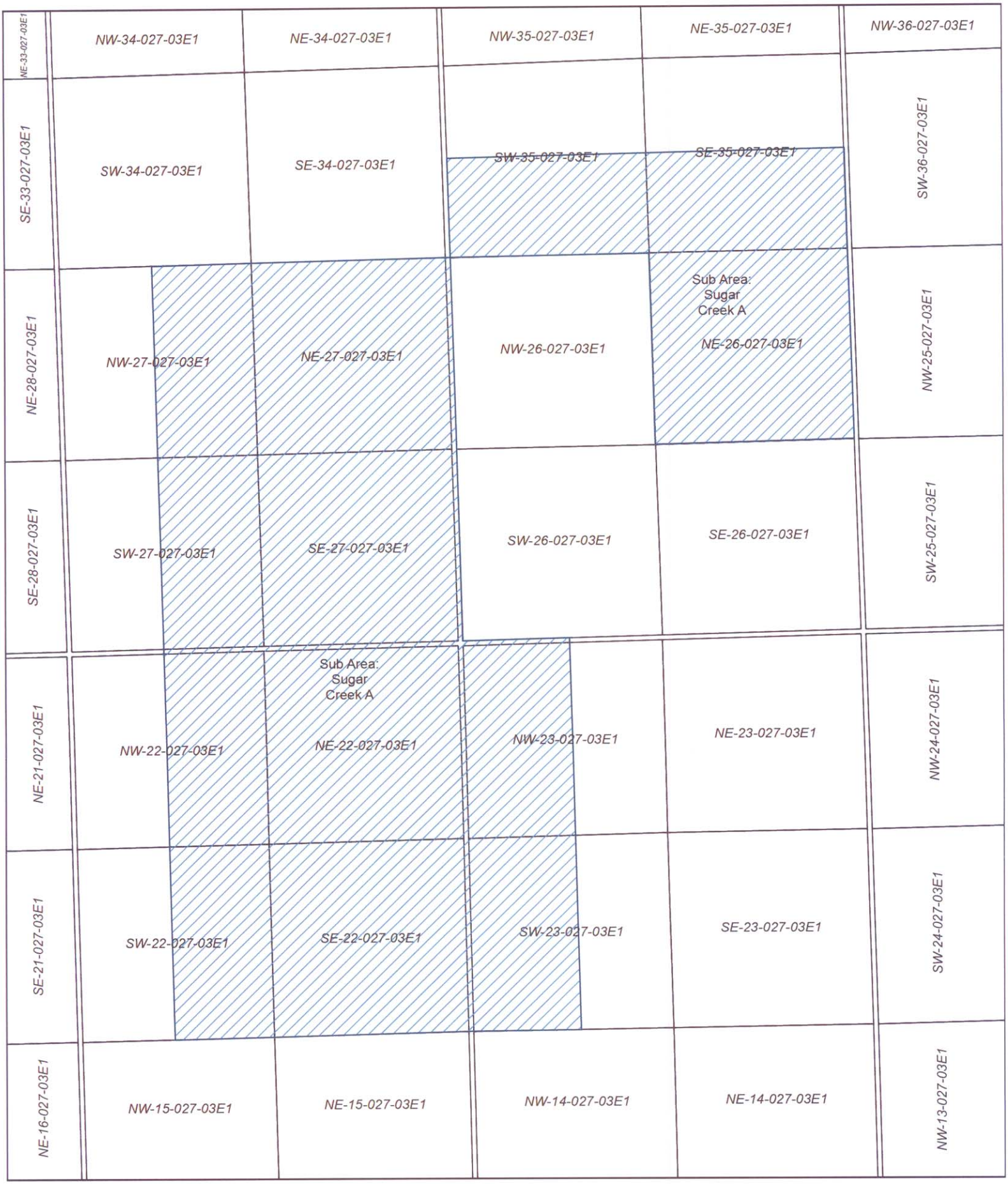
Company: SUN GRO HORTICULTURE CANADA LTD.

Sub Area: Ramsay Point

0 0.45 0.9 1.8 Kilometers

1:30,000

N W E S



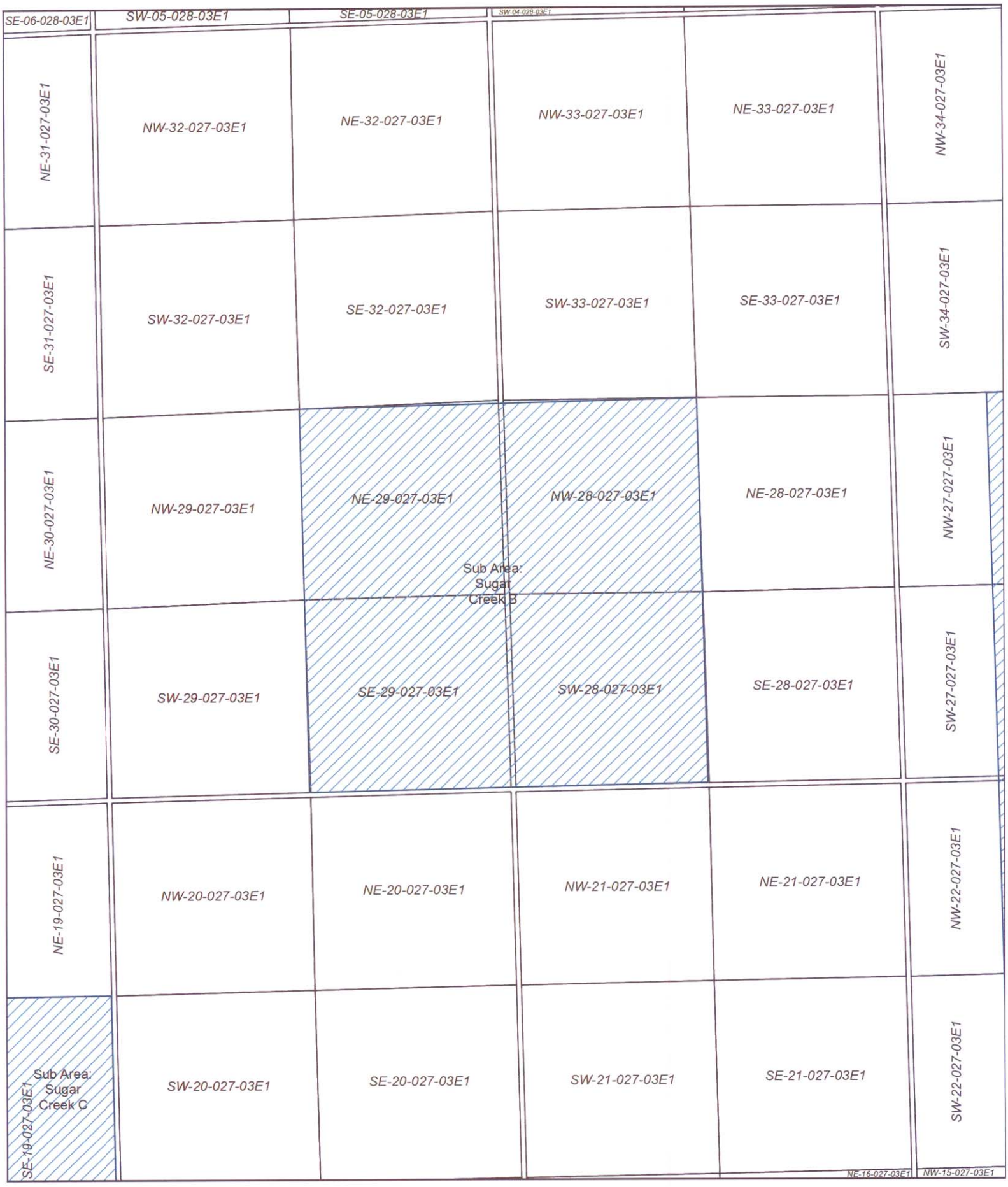
Company: SUN GRO HORTICULTURE CANADA LTD.

Sub Area: Sugar Creek A

0 0.3 0.6 1.2 Kilometers

1:20,000

N W E S



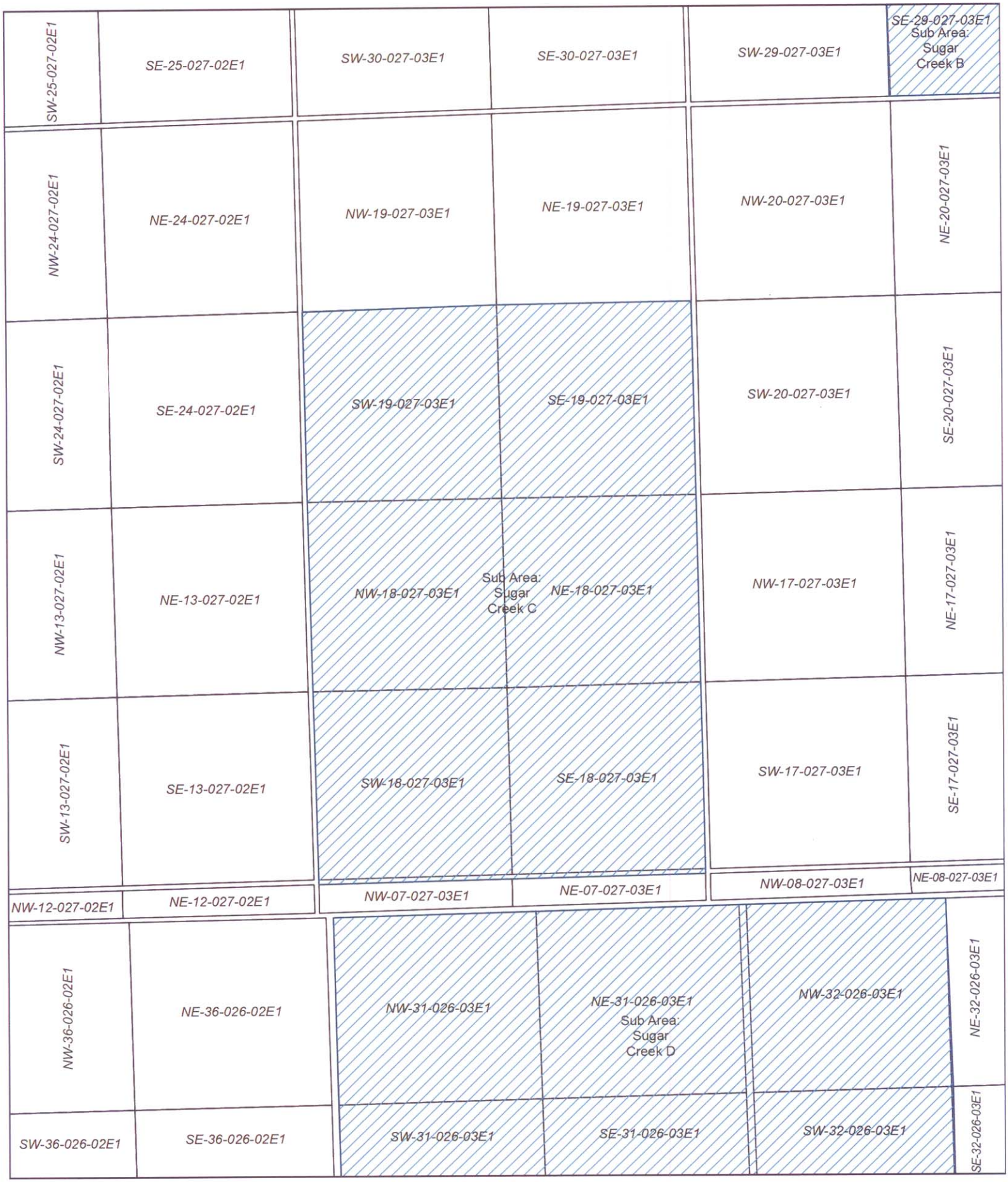
Company: SUN GRO HORTICULTURE CANADA LTD.

Sub Area: Sugar Creek B

0 0.3 0.6 1.2 Kilometers

1:20,000

N W E S



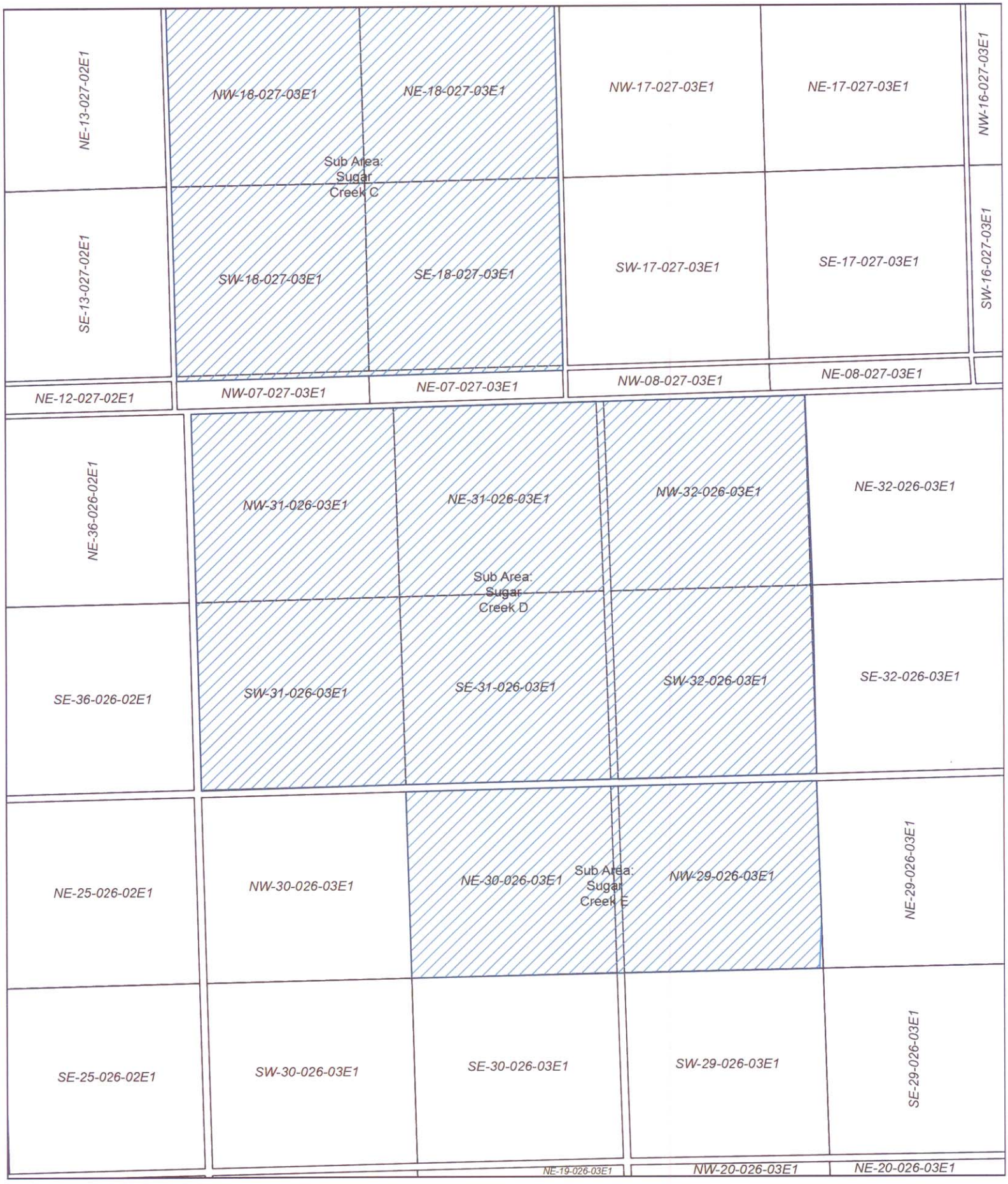
Company: SUN GRO HORTICULTURE CANADA LTD.

Sub Area: Sugar Creek C

0 0.3 0.6 1.2 Kilometers

1:20,000

N W E S



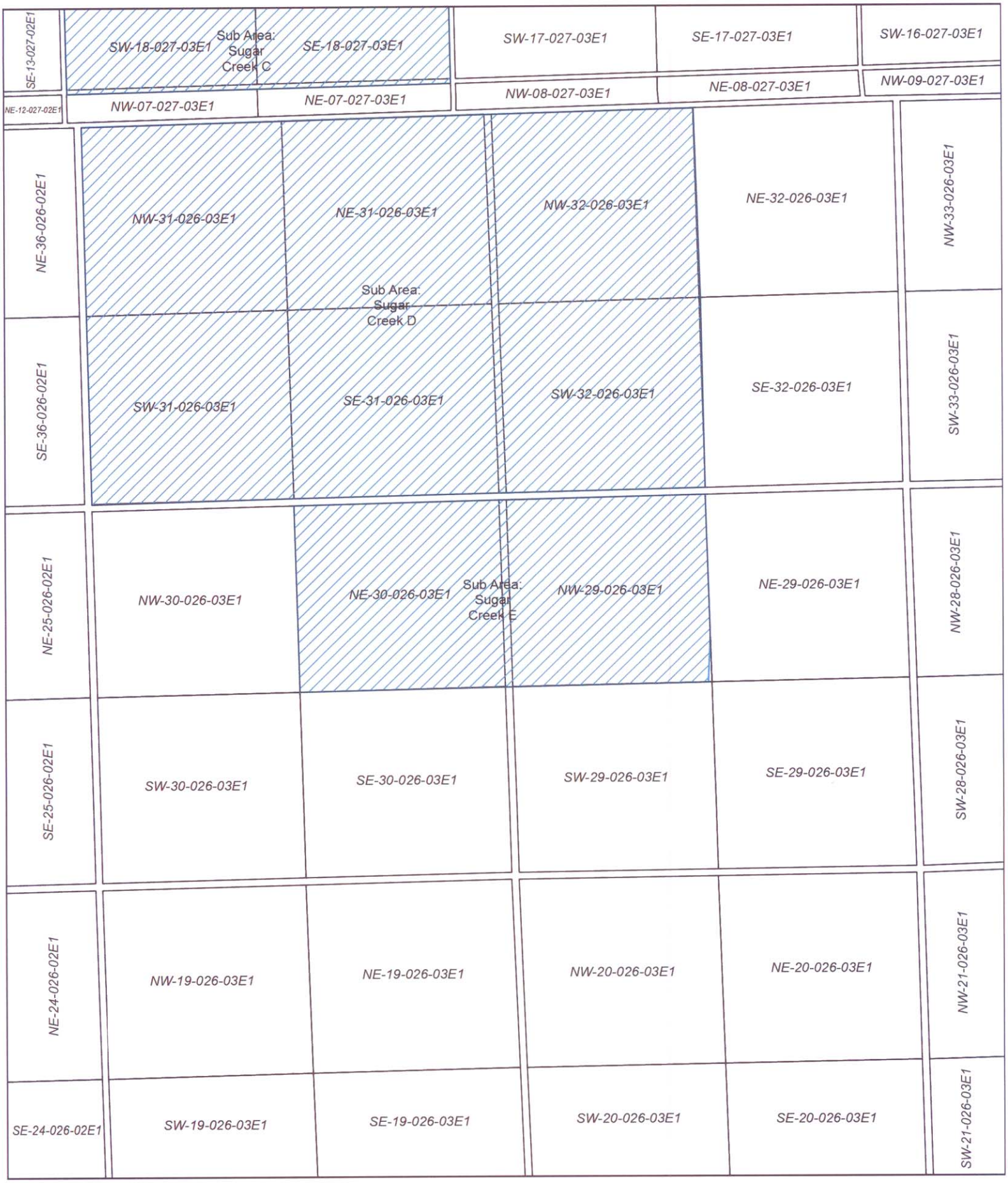
Company: SUN GRO HORTICULTURE CANADA LTD.

Sub Area: Sugar Creek D

0 0.3 0.6 1.2 Kilometers

1:20,000

N W E S



Company: SUN GRO HORTICULTURE CANADA LTD.

Sub Area: Sugar Creek E

0 0.3 0.6 1.2 Kilometers

1:20,000

N W E S

APPENDIX B

Appendix B. Manitoba Conservation Data Centre Rare Species Database Results
Sun Gro Horticulture Canada Ltd.
All Manitoba PHLs
Project #: 18N-01650

Category	Scientific Name	Common Name	S Rank	ESEA[1]	SARA[2]	COSEWIC[3]	2-12-10E	3-12-10E	21-5-16E	4-28-4E	11-30-5E	10-31-5E
Plant	*Pogonia ophioglossoides*	Rose pogonia	S1	-	-	-	X	-	-	-	-	-
Plant	*Platanthera lacera*	Fringed orchid	S1S2	-	-	-	X	-	-	-	-	-
Plant	*Cladium mariscoides*	Twig rush	S2S3	-	-	-	-	X	-	-	-	-
Plant	*Chelone glabra*	Turtlehead	S2	-	-	-	-	-	X	-	-	-
Plant	*Calopogon tuberosus*	Tuberous grass-pink	S2	-	-	-	-	-	-	X	-	-
Plant	*Rhynchospora alba*	White beakrush	S3	-	-	-	-	-	-	-	X	-
Bird	*Cardellina canadensis*	Canada warbler	S3B	-	Threatened	Threatened	-	-	-	-	-	X

[1]*Endangered Species and Ecosystems Act*
[2]*Species at Risk Act*
[3]Committee on the Status of Endangered Wildlife in Canada

APPENDIX C

Manitoba

Government of Manitoba GST Registration # R107863847
No. d'inscription du gouvernement du Manitoba aux fins de la TPS : R107863847

SUN GRO HORTICULTURE
770 SILVER STREET
AGAWAM MA
USA
01001-2907

INVOICE / FACTURE

Invoice Date	Invoice No.	Page
Date de facture	Numero de facture	Page
2015/12/15	1800119333	1/ 1

Customer#/Client no 6207226

MANITOBA CONSERVATION AND
WATER STEWARDSHIP
Accounting Services
42 - 200 Saulteaux Cres
Winnipeg MB R3J 3W3
Canada
Telephone: (204) 945-7864

Item No. / No de l'article	Item/Service Description / Description de l'article ou du service	Amount / Montant
001	21 - Damage Appraisal SunGro Ramsay	4,235.07

The sum total contains the following taxes:
La somme totale inclut les taxes suivantes:

A/R GST Output tax	0.000 % CA00	CAD	0.00
A/R GST Output tax	0.000 % CA00	CAD	0.00
A/R PST Output Tax	0.000 % CAMB	CAD	0.00

TOTAL AMOUNT DUE / MONTANT TOTAL À PAYER EN DOLLARS CANADIENS CAD 4,235.07

Notes:
Remarques:
Timber Damage Appraisal Assessment for:
SunGro Ramsay Point Project - Phase 3

OFFICE USE ONLY

2-19-1	5403606	$966.28
2-19-3	5403606	$3,174.92
2-19-2	5403606	$93.87
275-2	1023100	$4,235.07

Payment -Total amount due should be paid by cheque or money order payable to MINISTER OF FINANCE (MANITOBA).
A daily interest charge equivalent to rate below per annum applied commencing 1st day past due.
All cheques returned to the Province of Manitoba will be assessed a chargeback fee of $20.00.
Paiement -Le montant total à payer devrait être réglé par chèque ou par mandat à l'ordre du MINISTRE DES FINANCES (MANITOBA). Des intérêts quotidiens équivalant au taux annuel indiqué ci-dessous seront facturés à compter du premier jour après la date d'échéance. Tous les chèques renvoyés à la Province du Manitoba feront l'objet de frais de 20 $.
TERMS:Within 30 days Due Net/Montant net à payer dans les 30 jours.
Rate/Taux: 2.70 %

Assessment Summary – SunGro Ramsay Point Project Phase 3

December 11, 2015

1) Area of Disturbance:

Plantations (<10 years)	= 0.00 ha,
Plantations (>10 years)	= 0.00 ha,
Timber	= 63.50 ha,
Unproductive	= 20.30 ha,
Total	**= 83.80 ha**

2) Establishment Cost: (Total Plantation Area 0.00 * $882.35/ha) **= $0.00**

3) Timber Volume:

Plantations (>10 years)

Softwood	= 0.00 m^3,
Tamarack	= 0.00 m^3,
Hardwood	= 0.00 m^3,

Timber

Softwood	= 552.16 m^3,
Tamarack	= 0.00 m^3,
Hardwood	= 0.00 m^3,
Total	**= 552.16 m^3**

4) Total Timber Value:

Softwood (Volume * Dues $1.75)	= $966.28,
Tamarack (Volume * Dues $1.75)	= $0.00,
Hardwood (Volume * Dues $1.75)	= $0.00,

Total = $966.28

5) FRC Calculation:

Softwood (Volume * FRC $5.75)	= $3,174.92,
Tamarack (Volume * FRC $0.50)	= $0.00,
Hardwood (Volume * FRC $0.50)	= $0.00,

Total = $3,174.92

6) Fire Protection (Total Volume * FPC $0.17) **= $93.87**

7) High Value Forestry Site: (actual costs) **= $0.00**

8) Staff Time & Expense Cost: (actual costs) **= $0.00**

Total Damage Appraisal **= $4,235.07**

<Original signed by>

Signature._____
Volume Assessment – Tim Harapiak (Regional Forester)

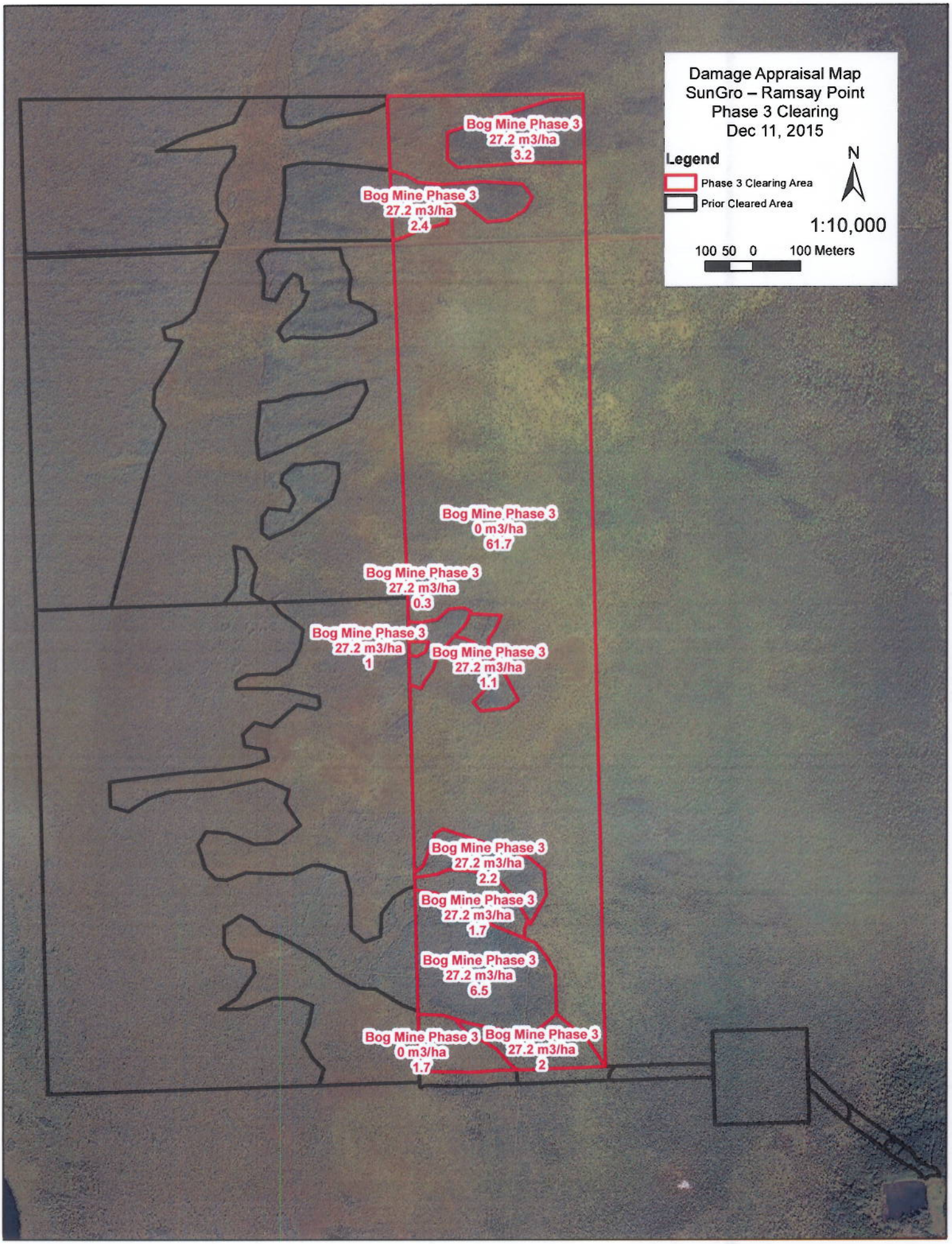
<Original signed by>

Signature:_____
Value Assessment – Gwen McGimpsey (Timber Sales Manager)

<Original signed by>

Approved _____
Regional Forester – Tim Harapiak

Manitoba
Conservation and Water Stewardship
Forestry and Peatlands Management


Damage Appraisal Map
SunGro – Ramsay Point
Phase 3 Clearing
Dec 11, 2015
Legend
Phase 3 Clearing Area
Prior Cleared Area
N
1:10,000
100 50 0 100 Meters
Bog Mine Phase 3
27.2 m3/ha
3.2
Bog Mine Phase 3
27.2 m3/ha
2.4
Bog Mine Phase 3
0 m3/ha
61.7
Bog Mine Phase 3
27.2 m3/ha
0.3
Bog Mine Phase 3
27.2 m3/ha
1
Bog Mine Phase 3
27.2 m3/ha
1.1
Bog Mine Phase 3
27.2 m3/ha
2.2
Bog Mine Phase 3
27.2 m3/ha
1.7
Bog Mine Phase 3
27.2 m3/ha
6.5
Bog Mine Phase 3
0 m3/ha
1.7
Bog Mine Phase 3
27.2 m3/ha
2

Manitoba

Government of Manitoba GST Registration # R107863847
No. d'inscription du gouvernement du Manitoba aux fins de la TPS : R107863847

SUN GRO HORTICULTURE
770 SILVER STREET
AGAWAM MA
USA
01001-2907

INVOICE / FACTURE

Invoice Date / Date de facture	Invoice No. / Numero de facture	Page / Page
2018/02/28	1800138639	1/ 1

Customer#/Client no 6207226
SUSTAINABLE DEVELOPMENT
Accounting Services
42 - 200 Saulteaux Cres
Winnipeg MB R3J 3W3
Canada
Telephone: (204) 945-7864
Contact: Forestry & Peatland Mgmt

Item No. / No de l'article	Item/Service Description / Description de l'article ou du service	Amount / Montant
001	Sungro Ramsay - Phase 4	6,050.10

The sum total contains the following taxes:
La somme totale inclut les taxes suivantes:

A/R GST Output tax	0.000 % CA00	CAD	0.00	
A/R GST Output tax	0.000 % CA00	CAD	0.00	
A/R PST Output Tax	0.000 % CAMB	CAD	0.00	

TOTAL AMOUNT DUE / MONTANT TOTAL À PAYER EN DOLLARS CANADIENS CAD 6,050.10

Notes:
Remarques:

Timber Damage Appraisal Assessment for:
SunGro Ramsay Point Project - Phase 4

OFFICE USE ONLY

2-19-1	5403606	$1,380.40
2-19-2	5403606	$134.10
2-19-3	5403606	$4,535.60
275-2	1023100	$6,050.10

Payment -Total amount due should be paid by cheque or money order payable to MINISTER OF FINANCE (MANITOBA).
A daily interest charge equivalent to rate below per annum applied commencing 1st day past due.
All cheques returned to the Province of Manitoba will be assessed a chargeback fee of $20.00.
Paiement -Le montant total à payer devrait être réglé par chèque ou par mandat à l'ordre du MINISTRE DES FINANCES (MANITOBA). Des intérêts quotidiens équivalant au taux annuel indiqué ci-dessous seront facturés à compter du premier jour après la date d'échéance. Tous les chèques renvoyés à la Province du Manitoba feront l'objet de frais de 20 $.
TERMS:Within 30 days Due Net/Montant net à payer dans les 30 jours.
Rate/Taux: 5.20 %