

GENERAL OPERATIONAL NOTES

- Tonnage Limit:** It is a condition of this licence that no more than 750,000 tonnes of aggregate material shall be removed from this licensed property annually. The area to be extracted is 57.27 hectares.
- Access:**
 - The only pit entrance/exit will be directly onto Witmer Road with the access located approximately 220 metres east of the property's west boundary and coinciding with a former farm access point. A steel bar gate (or equivalent) shall be installed at this access point and it shall be secured after hours when the pit is not operational. The pit entrance will be paved into the pit to the furthest distance of either the front-edge of the weigh scale or 30.0 metres.
 - Additional access points will be gated with a farm-type gate (or equivalent) and restricted to pit staff and/or farm equipment and include: i) access to the +/-8.5 metre wide farm lane to Bleams Road and ii) the off-site Dry-Fresh Sugar Maple Hardwood Deciduous Forest [FODM5-9 (A)].
- Fencing:**
 - The majority of the site is fenced with 1.2 metre high post and wire fencing, however, during the pit start-up stage, it shall be inspected and any portions that are in disrepair will be replaced. New fencing (1.2 metre high Paige wire) will be constructed along the southern limit of the pit adjacent to the Dry-Fresh Sugar Hardwood Deciduous Forest [FODM5-9 (A)].
 - No fencing will be required next to the Dry-Fresh White Pine Naturalized Conifer Plantation [FOCM6-1] since the abutting lands are owned by the licensee and the eastern property boundary is fenced (refer to Note 3a) up to the edge of the Schindelstедdle Pond, and/or site access is restricted. To demark the extraction boundary next to the plantation (including the identified buffer), 1.5 metre high T-bar posts (or equivalent) will be placed every 7.5 metres and remain in place for the pit life.
- Silt Fencing:** A single row of light-duty silt fence barrier (as per OPSD 219.100) shall be erected:
 - On the toe of the slope on the external side of all berms prior to berm construction and remain in place until the berm ground cover has established and/or there is minimal potential of soil erosion from the berm.
 - For Berm 1, the silt fencing must be installed 10.0 metres from the surveyed dripline of the abutting woodlot [FODM-9 (B)] in advance of the berm construction.
 - On the perimeter of the conifer plantation [FOCM6-1] on the outside of the T-bars for a minimum of one year or until there is no risk of erosion into the plantation.
- Site Buildings:** The weigh scale and scale house facilities shall be located near the main entrance/exit at Witmer Road. A maintenance/storage shed for on-site equipment may be located in proximity to the weight scale, within Phase 4.
- Fuel Storage:** Above-ground fuel storage with 100% containment facilities will be located near the front entrance/exit and located on a concrete pad. Semi-portable equipment used on-site (i.e., crushers, screeners, generators, etc.) will be refueled by a mobile fuel truck and follow the necessary requirements under the Gasoline Handling Act. In the unlikely event of any fuel spill, it must be reported to the MECP immediately and a Spill Response Plan must be posted on-site (i.e., in the scale house).
- Groundwater:** The final groundwater elevation has been determined by Harden Environmental to vary from the north portion at 355.2 masl to 353.2 masl in the south portion. The surface water elevation in the Schindelstедdle South Wetland Complex is +/-355.3 masl.
- Berms:**
 - Numerous berms are required and their locations are shown on the Operational Plan – Sheet 2 of 7 and include:

Berm	Height	Timing
1	5.0	Prior to Phase 1
2	5.0	Prior to Phase 1
3	5.0	Prior to Phase 1
4	4.0	Prior to Phase 2
5	4.0	Prior to Phase 3
6	4.0	Prior to Phase 3
7	4.0	Prior to Phase 3
8	0.5	Prior to Phase 1
9	2.0	Prior to Phase 1

- All berms will be constructed as per the Berm Design Sketch as shown on Sheet 4 of 7, constructed of on-site overburden, subsoil or topsoil and vegetated with perennial legume/grass to control erosion. Refer to General Operational Note 9c) regarding vegetation maintenance. The only berm which the Licensee will be required to maintain (cut regularly) is Berm 9 and only the front (Witmer Road) side.
 - Berms 3 – 7 shall be constructed between September 1 and April 15.
 - Berm 1 must be constructed a minimum 10.0 metres from the dripline of the abutting Dry-Fresh Sugar Hardwood Deciduous Forest [FODM5-9 (B)].
 - Berm 9 will be constructed at the rear limit of the 30.0 metre setback along Witmer Road and all others will be constructed a minimum 3.0 metres from the abutting fence line, where applicable.
 - All berms will be removed as part of the progressive rehabilitation of the pit except:
 - Berms 5, 6, 7: The rear portion of the lower slopes where shrubs have been planted (see Note 9b).
 - Berm 8: The entire 0.5 metre high berm.
- Vegetation:**
- Vegetation to be planted prior to extraction of Phase 1 shall include:
 - Along the Witmer Road pit frontage, a row of mixed coniferous trees to include 35% Eastern White Cedar, 30% White Spruce and 35% Eastern White Pine, being a minimum 1.2 metres in height at planting and spaced 4.0 – 5.0 metres apart. If available and practical, the trees may be transplanted from FODM5-9 (A).
 - Between the toe of the slope of Berm 3 and the eastern boundary fence, ten (10) Gray Dogwoods and ten (10) Ninebark shrubs shall be planted in clumps on 3.0 metre centres and be 1.0 metres in height at time of planting.
 - Between Berm 8 and the Wetland Boundary (outside the Licensed Boundary), three (3) Red-Osier Dogwood and five (5) Eastern White Cedars to augment as a visual barrier and be 1.0 metres in height at time of planting.
 - Within all setback areas where berms are not present and not planted in annual row crops, these areas shall be allowed to passively naturalize as this will increase the area available for Common Milkweed and nectar plant growth (i.e., Monarch habitat), provide preservation of Eastern Cottonwood seedlings, provide protection of retained fencerows and hedgerows to specifically protect White Spruce around the margins of the conifer plantation, increase insect populations as a greater food sources for the three regionally rare birds, enhance conditions for grassland and shrub habitat bird species and enhance conditions for insect pollinators.
- Specifically the setback between Berm 1 and the western boundary shall be allowed to naturalize to woodland herbs and shrubs.
- Vegetation to be planted prior to extraction of Phase 3 shall be between the outside portion of Berms 5, 6 and 7 and the boundary fence and partially up the side slopes of these berms. Species to be planted total seventy-five (75) Gray Dogwoods and fifty-five (55) Ninebark, being a minimum of 1.0 metres in height at planting and planted in clumps on 3.0 metre centres.
 - Maintenance of the berms, proposed pit slopes, and rehabilitated areas shall be carried out throughout the life of the pit. If significant areas of vegetation die, they shall be replaced immediately during the next appropriate planting season. As well, if significant areas of erosion occurs on any berms or within a rehabilitated area, it shall be repaired immediately and reseeded during the next appropriate planting season.
- Tree Removal:** Any trees and/or stumps that are removed to accommodate the extraction operation may be; a) buried on-site, b) burned on-site but subject to a Township of Wilmot Burn Permit being issued, and/or c) removed from the site.
- Stripping:** Topsoil, subsoil and overburden shall be stripped and used for the construction of temporary berms until needed for final rehabilitation. Additional stripped material will either be placed directly onto the final pit floor/side slopes for progressive and final rehabilitation, or, if necessary, stored in separate stockpiles on the floor and eventually used for progressive and final rehabilitation. No topsoil or subsoil will be removed from the site.
- Extraction Depth:** Excavation shall be carried out in 2 to 3 lifts (each lift not exceeding 8.0 metres in depth), with a final pit floor elevation being 354.7 masl at the south (i.e., Phase 1) and 356.7 masl at the north (i.e., Phase 3) and shall provide a minimum buffer of 1.5 metres above the identified water table.
- Direction of Extraction:** The direction of extraction for each phase is shown on Sheet 2 of 7.
- Stockpile Heights / Locations:** Aggregate stockpiles may be located within any of the Phases (1-4) but shall be located on the lowest pit floor elevation where possible and not exceed 20.0 metres in height. The stockpiles will be primarily located within the Processing Area noted on the Operational Plan.
- Hours of Operation:**
- | | |
|--------------------------|---|
| Site Preparation: | 7:00 a.m. to 7:00 p.m. Monday to Friday |
| Extraction / Processing: | 7:00 a.m. to 7:00 p.m. Monday to Friday
7:00 a.m. to 6:00 p.m. Saturdays |
| Shipping: | 6:00 a.m. to 7:00 p.m. Monday to Friday
6:00 a.m. to 6:00 p.m. Saturdays |

- There shall be no extraction, processing or shipping on Sundays or any Statutory Holiday. Maintenance and repair of on-site equipment as required from time to time, may occur beyond these hours.
- Occasionally, public construction project contracts require night time delivery of aggregate. Night time deliveries will require municipal notification and approval in advance of night work and be restricted to loading and shipping only and no other site work (i.e., crushing, screening, extraction, recycling, washing) will be permitted.
- Equipment:** Proposed equipment to be used on-site may include, but not limited to; scrapers, bull dozers, power shovels and dump trucks for stripping and rehabilitation and front-end loaders, dump trucks, conveyor belts and portable processing equipment during extraction.
- Processing:** Screening, blending and crushing will occur within; a) the 'Processing Area', b) the 'Recycling Area', and c) with some limited activity at or near the pit face, (subject to the Noise Recommendations) and processing shall be located at the lowest pit floor elevation or as specified by the Noise Recommendations.
- Aggregate Washing:** The wash plant will be located within Phase 1 with water derived from the wash ponds constructed into the water table; subject to approval by MECP, including (if necessary) a Permit to Take Water.
- Aggregate Recycling:** The Licensee is permitted to import concrete and asphalt for recycling and resale and/or blending purposes. Recycling shall occur within the 'Recycling Area' as noted on Sheet 2 of 7.
- Importation of Fill:** The Licensee shall be permitted to import clean inert fill to facilitate the side slopes and final agricultural land use, except, no infill material shall be permitted on any portion of the licensed site north of the Schindelstедdle South Wetland Complex, (corresponding with the Region of Waterloo's Issues Contributing Area, and as denoted on Sheet 7 of 7). The Licensee must ensure that all material imported is tested at the source before it is deposited on-site to ensure it meets MECP criteria listed under Table 1 of the "Soils, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act." Where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1 for Sodium Absorption Ratio and Electrical Conductivity do not have to be met, in accordance with MNRF Policy No. A.R. 6.00.03. Sampling results must be provided to MNRF, MECP or the Region of Waterloo upon request.
- Scrap:** Scrap material that is generated on-site is to be stored in the vicinity of the scale house or maintenance/storage building and removed from the site on an ongoing basis (i.e., annually).
- Dust Mitigation:** Dust shall be mitigated on-site. Water or any other MECP approved dust suppressant shall be used to control dust on internal roads as often as required. When calcium chloride is used, it will be applied using Best Management Practices and at the manufacturer's recommended rate.
- Internal Roads:** Internal roads within the extraction area will be constructed and disband as required. When extraction is completed, all areas which have been subjected to compaction from heavy equipment will be cross-ripped to a minimum depth of 0.5 metres to ensure effective drainage.
- Surface Drainage:** Surface water drainage will be maintained on-site and allowed to percolate through the pit floor into the groundwater system.
- Area to be Extracted:** The total area to be extracted is 57.27 hectares.
- Final Land Use:** The final land use for the subject lands will be agricultural. Restrictions to the agricultural use on portions of the lands are cited in the Risk Management Plan 2019 on file with the Region of Waterloo.

RECOMMENDATIONS FROM TECHNICAL STUDIES

Hydrogeology: (Harden Environmental Ltd. dated Sept 2019)

- On-site monitoring of MW1 and SG1 by data-loggers (hourly) shall continue for the duration of the pit life. A report will be prepared annually each September by a qualified hydrogeologist and submitted to MNRF and the Region of Waterloo as part of the annual Compliance Assessment Reporting. The Report will document the monitoring results and provide analysis of the year over year data and whether any modification to the operation are recommended, but any such modifications shall be reviewed and approved by MNRF and the Region of Waterloo prior to implementation.
- A Spills Mitigation and Contingency Plan (Appendix F of the Harden Environmental Report and or equivalent) shall be prepared, adopted and posted on-site (i.e., scale house).
- The final pit floor elevations as shown on the Rehabilitation Plan (Sheet 7 of 7) shall remain a minimum 1.5 metres above the groundwater.
- Nutrient applications shall be restricted or eliminated in the Issue Contributing Area of the Region of Waterloo wells (K50, K51 K52) as per the agricultural Risk Management Plan on file with the Region of Waterloo and also identified on the Rehabilitation Plan.

Noise: (HGC Engineering Limited, dated September, 2019)

Initial Start-Up Phase

- Prior to extraction, the licence shall construct a designated recycling area, washing area and an initial potable processing crusher area, in the general location shown on Sheet 2 of 7 – Operational Plan, at the final pit floor elevation of 356.0 masl.
- Processing and recycling equipment may be used during the initial start-up phase to construct these working areas.
- During continued operations in this phase, processing equipment may be relocated to follow the pit working face. The recycling equipment shall remain in the designated recycling area at the final pit floor elevation.

HALLMAN PIT

OPERATIONAL PLAN NOTES

SHEET 3 OF 7

RECOMMENDATIONS FROM TECHNICAL STUDIES (CONT.)

- Activities used to prepare the site for extraction, such as the stripping of topsoil and construction of berms, or activities related to the remediation of the site after the extraction is completed are considered to be construction activities. They are regulated under municipal by-laws and NPC-115 "Sound Level Limits for Motorized Construction Equipment".

Extraction Phases 1 Through 4

Refer to the Operational Notes and Details Plan (Sheet 4 of 7) for the Noise Recommendations for each extraction phase.

Natural Environment (Dance Environmental Inc., dated September, 2019)

General Recommendations

- Clearing of any vegetation within the limit of extraction shall occur between September 1 and April 15 to prevent any destruction of birds, eggs or nests.
- Effective dust control shall be maintained along the access road and in the pit so that dust does not impact adjacent vegetation and wildlife.
- Adequate undisturbed setbacks shall be established between the limit of extraction and the Level 1 features including Habitat for Barn Swallow and Bank Swallow, Fish Habitat, turtle wintering area for Midland Painted Turtle, Eastern Wood-Peeewe and Monarch and the Significant Woodland (FODM5-9 (B)).
- Setback areas shall be allowed to naturalize to wild vegetation cover, be seeded to a grass/legume mix or planted with shrubs.
- Progressive rehabilitation shall be undertaken.
- Equipment fueling, maintenance and fuel storage shall be located on the portion of the site recommended by the hydrogeologist, away from the wetland/pond feature.
- Extraction shall be kept 1.5 metres above the shallow groundwater elevation so that there are no impacts on the wetland/pond feature.
- Silt control fence shall be installed to protect the wetland/pond.
- The limits of extraction shall be fenced with post and wire fencing or other posts to prevent equipment from impacting the significant natural features.
- If Bank Swallows begin to nest in the new pit margins, pertinent regulatory requirements shall be followed to avoid impacts on this species.

Habitat Specific Recommendations:

Monarch

- An increase in habitat for Common Milkweed and other flowering plants within the setbacks should be a positive benefit to Monarch populations in the study area.

Significant Woodland [FODM5-9 (B)]

- The western margin of Berm 1 shall be 10 metres or more from the dripline of the woodland.
- Before the berm is constructed the Paige wire fence demarking the licence boundary shall be repaired and/or reconstructed.
- Prior to Berm 1 being constructed, a silt fence shall be installed 10 metres from the dripline of the Significant Woodland and inspected at weekly intervals and be repaired as soon as practical and remain in place until the berm ground cover has established and/or there is minimal potential of soil erosion from the berm.
- Berm 1 construction shall occur between September 1 and April 15, to accommodate grassland / shrubland birds and be vegetated with a legume/grass mix to stabilize the berm surface.
- Extraction of Phase 1 shall not occur closer than 10.0 metres from the eastern dripline of the Significant Woodland.
- Dust control shall occur on a regular, ongoing basis to ensure that dust does not leave the pit and accumulate in the Significant Woodland.

Meadow Marsh and Pond [MAMM1-3 and OAO]

- The entire conifer plantation, which is located upslope of the wetland and pond, shall be retained and extraction shall remain 15.0 metres away from the edge of the plantation.
- T-bar fence posts (or equivalent), shall define the licence boundary and extraction limit 15.0 metres away from the conifer plantation.
- Silt fence is to be installed along the outside of the T-Posts before any topsoil stripping occurs. The silt fence is to be inspected and maintained for a minimum of one year and beyond until there is minimal potential of soil erosion toward the conifer plantation.
- Routine dust control shall occur so that the plantation, wetland vegetation and pond are not impacted by dust.
- Three (3) Red-Osier Dogwoods and five (5) Eastern White Cedars shall be planted to provide a visual barrier between the pit and the pond where there is currently a gap in vegetation between the pond edge and the extraction and these shrubs shall be 1.0 metre tall when planted.
- A 0.5 metre high earthen berm is to be constructed to the north of the northwestern corner of the pond to intercept any runoff and to filter runoff before it flows toward the pond. This berm shall be seeded with a grass/legume mix.

Southeastern Woodland [FODM5-9 (A)]

- Silt fencing shall be placed along the southern margin of the berm to prevent sediment transport from Berm 3 toward the woodland.
- The 15.0 metre setback between the woodland and the licence boundary shall be allowed to naturalize as woodland herbs, shrubs and trees will quickly colonize this area.
- Berm 3 shall be planted with a legume/grass mix to prevent erosion of the berm surface.
- Routine dust control shall occur so that the woodland is not impacted by dust.
- Vegetation in the existing hedgerow which connects this woodland to the marsh/pond to the north shall remain along the property boundary so that this corridor is maintained.

Regionally Significant Bird Breeding Habitat

Pied-billed Grebe

- A 50.0 metre wide undisturbed wild vegetation buffer shall separate the extraction limit from the closest margin of the pond habitat.
- Paige wire fence and/or fence posts and temporary silt control fence will be placed at the limit of extraction to prevent machinery and sedimentation damage to the conifer plantation and other buffer vegetation.
- A 0.5 metre high earth berm will be constructed to the north of the northwestern corner of the pond to intercept runoff and to filter runoff before it flows toward the pond.
- Dogwoods and cedars shall be planted between the margin of the conifer plantation and the eastern property boundary.
- The conifer plantation (TAGM1) wetland, pond and associated buffer lands should be zoned Open Space Z.11.

Eastern Bluebird, Brown Thrasher and Vesper Sparrow

- Construction of the noise berms located east of the wash ponds and in the northern sector of the pit shall occur between September 1 and April 15 to avoid impacts on nesting birds.
- A silt fence shall be installed along the outer margins of the berm footprints before berm construction begins, so that adjacent natural features including the fencerow vegetation are protected from sedimentation;
- The berms shall be seeded with a grass/legume mix to stabilize the berm surface against erosion.
- Gray Dogwoods and Ninebark shrubs shall be planted in clumps on 3.0 metre centers along the eastern half of Berm 3. Similarly, Gray Dogwood and Ninebark shrubs shall be planted in clumps on 3.0 metre centers along the outside slopes of Berms 5, 6 and 7.

Regionally Significant Plant Species

Eastern Cottonwood, White Spruce, Black Walnut

- Eastern Cottonwood seedlings shall be preserved within the setbacks from fencerows and berms and retained fencerows will provide habitat for Eastern Cottonwood during the life of the pit.
- The White Spruce present shall be protected by setbacks and fencing to be placed around the margins of the conifer plantation (TAGM1).
- Black Walnut is widespread in the Region and retained fencerows and the two upland deciduous forest will protect most specimens of Black Walnut that are present.

Possible Bat Habitat

- Removal of any hedgerow trees and constructing of portions of Berm 4, 5, 6 and 7 adjacent to hedgerows, shall occur between September 1 and April 15.
- During the initial start-up stage, two (2) bat boxes shall be erected on the western margins of the conifer plantation, as shown on Sheet 2 of 7.

GRCA Regulated Area (Wetland/pond feature)

The wetland/pond feature shall be protected by the following:

- An undisturbed setback of 50.0 metres or more from the pond margin and 30.0 metres from the flagged wetland.
- 1.5 metre high T-bar posts and temporary silt fence.
- New shrub plantings.
- Extraction shall not be within 1.5 metres of the water table.
- Open Space Z.11 zoning on the buffer/wetland/pond lands.
- Construction of a 0.5 metre high berm (Berm 8).

Agriculture / Soils (DBH Soil Services Ltd., December 21, 2018)

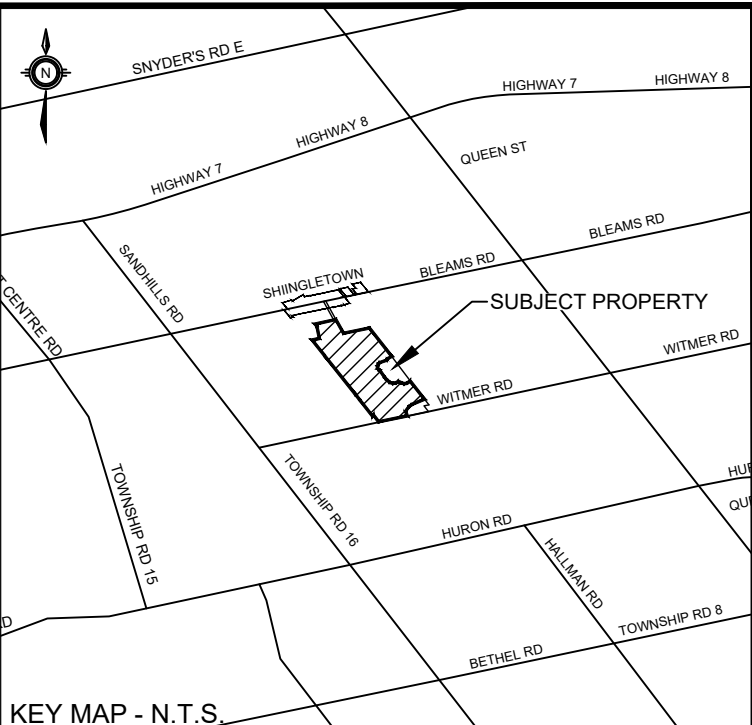
- To reduce trespassing and potential vandalism:
 - Use natural heritage features or a road to separate agriculture from non-agricultural land uses to create a defined boundary.
 - The creation of a berm or vegetated feature between the different types and intensities of land.
 - Use adequate fencing.
 - The use of signage to indicate No Trespassing or Private Property.
- The use of plantings/vegetation as buffers to reduce visual impacts and sounds.
- The use of reduced speed limits in the agricultural areas.
- Implementation of surface and/or groundwater monitoring in areas where agricultural operations make use of surface or groundwater as part of their normal farm practices. Specifically, this monitoring is referenced on Sheet 3 of 7 under Hydrogeology Recommendations: (Harden Environmental Ltd. dated September, 2019) as Note 1.

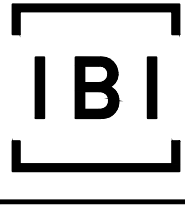
Rehabilitation Recommendations:

- Strip and store topsoil, subsoil and overburden separately, under appropriate weather conditions. Surface soils are easily damaged when wet.
- Strip in small areas as necessary in advance of extraction.
- Apply progressive rehabilitation to prevent degradation of the topsoil material, without intermediate stockpiling. Where stockpiling is necessary, use it as longer term berm material.
- The pit floor should be deep chisel ploughed or ripped to release compaction from heavy equipment.
- Re-establish the overburden, subsoil and topsoil in the appropriate sequence for a minimum of 0.5 metres to ensure 2.0 metres of soil over the water table.
- Chisel plough each horizon of replacement soil, prior to the placement on the next horizon, to release soil compaction.
- Use best management agricultural practices as are appropriate for the area.

Archaeology: (Timmins-Martelle Ltd. dated September 2019)

- Should previously undocumented (i.e., unknown or deeply buried) archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the Ontario Heritage Act. Further, archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.
- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify; a) the police or coroner and b) the Registrar of Burial Sites, War Graves, Abandoned Cemeteries and Cemetery Closures, Ontario Ministry of Government and Consumer Services at (416) 212-7499



SITE PLAN OVERRIDES			
5.1	No fencing abutting pine plantation as those lands are owned by the licensee and the exterior boundary will be fenced or access is restricted.		
5.10.1	No setback abutting pine plantation as those lands are owned by the licensee and the buffer is in place outside the license boundary		
5.10.1	No setback abutting the sugar maple forest in the south-east as those lands are owned by the applicant.		
REVISIONS PRIOR TO APPROVAL			
2019/10/16	Revisions as per MNRF notes & details		
SITE PLAN AMENDMENTS			
No.	DATE	BY	DESCRIPTION
THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 8 (4) FOR A CLASS A, LICENCE CATEGORY 3 PIT.			
SEPTEMBER 24, 2019 DATE		 DATE: 2019-09-24, DS: 115985, RPP: MCP	
		IBI GROUP 101 - 410 Albert Street Waterloo ON N2L 3V3 Canada tel 519 585 2255 ibigroup.com	
PART LOT 10 CONCESSION SOUTH OF BLEAM'S ROAD, PART 1 58R19981 TOWNSHIP OF WILMOT REGIONAL MUNICIPALITY OF WATERLOO			
JACKSON HARVEST FARMS LTD. 2879 HERRGOTT ROAD ST. CLEMENTS, ON, N0B 2M0			
OPERATIONAL PLAN NOTES			
DESIGNED BY: DRAWN BY: CHECKED BY: DATE:	JS JS/PR DS 2019-09-24	SCALE: FILE NUMBER: SHEET NUMBER:	N.T.S. 115985 3 OF 7