

7. Post and wire fencing shall be erected and maintained for the life of the licence along the edge of

in the northern extent of Lot 12, Concession 3, within the licence boundary.

Drainage of undisturbed areas will continue in the directions shown on drawing 1 of 5

2. Silt fencing shall be installed and maintained in accordance with note O.6.k on this drawing.

2. Tree removal shall occur in accordance with note O.6.f on this drawing. All non-tree vegetation

Timber resources shall be salvaged for use as saw logs, fence posts and fuel wood where

appropriate Cleared stumps and brush may be removed from the site burned (with applicable

permits), used for aquatic habitat enhancement, or mulched for use in progressive rehabilitation.

5. Stripped topsoil and organic material shall be transported directly to areas that have been graded

6. Stripped overburden shall be utilized to construct acoustic berms or to backfill side slopes and the

pit floor to establish the final slopes, grades and elevations depicted on the plan view of drawing 4

Stripping shall incrementally precede extraction to minimize the disturbed area and the amount of

slopes vegetated to control erosion. Seeding shall not be required if these stockpiles have I. Extraction Details

8. Temporary topsoil and overburden stockpiles which remain for more than one year shall have their

9. All temporary topsoil and overburden stockpiles shall remain a minimum of 30 metres from the

licence boundary and 90 metres from a property with a residential use (see Section N Variations

Acoustic berms shall be constructed to the height specified in the locations shown on the plan view

2. Berms shall not be located within three metres of the licence boundary, except for Berms F and G

Existing vegetation within the southern, eastern and northern setbacks shall be maintained except

trees at irregular centres at the toe of the existing berms and shall be maintained except where the

existing berms are required to be modified to meet the minimum height requirements identified in

9. Tree screens along 4th Line that were removed to facilitate berm construction, and the remaining

include, but not limited to, white cedar, white spruce, white pine, Colorado spruce and balsam fir.

. Extraction shall occur in nine phases (Phases 1A, 1B, 2A, 2B, 2C, 3A, 3B, 4A and 4B) as shown on

Progressive and final rehabilitation shall be completed in direct correlation to the development of

the pit and quarry as the maximum extraction limits and depths are reached and enough area is

available to ensure rehabilitation activities will not interfere with the production, stockpiling and

4.1. Create the Central and South Infiltration Ponds as well as the North Infiltration Trenches

See Water Resources notes O.9.p to O.9.s and O.9.z on this drawing for additional

4.2. Construct the four injection wells along the east boundary. See Water Resources note

4.3. Establish Berms 'A' to 'G' (see Noise note O.7.g on this drawing for additional information)

4.4. Finish extracting the sand and gravel material in a northerly direction to the top of bedrock.

4.5. Backfill and vegetate the 2:1 side slopes along the east and south boundary of Phase 1A

4.11 Progressive rehabilitation shall consist of backfilling the east and south boundary of Phase

5.1. Finish extracting the sand and gravel material in a westerly direction to the top of bedrock.

5.2. Backfill and vegetate the 2:1 side slopes along the west boundary of Phase 1B from

existing grade to the top of bedrock with on-site material and/or imported excess soil.

5. Progressive rehabilitation shall consist of backfilling the west boundary of Phase 1B from

5.7. The buried tile drain shall be constructed prior to extraction commencing in Phase 2. See

Water Resources notes O.9.n and O.9.o on this drawing for additional information.

6.1 Strip the undisturbed portion of Phase 2A and use the overburden to backfill side slopes

6.2. Finish extracting the sand and gravel material in a northerly direction to the top of bedrock.

existing grade to the top of bedrock with on-site material and/or imported excess soil.

and the topsoil to dress areas that have been graded and are being prepared for final

6.3. Backfill and vegetate the 2:1 side slopes along the east boundary of Phase 2A from K.

Progressive rehabilitation shall consist of backfilling the east boundary of Phase 2A from

the floor of lift 1 to existing grade with on-site material and/or excess soil to establish a 2:1

7.1. Strip the undisturbed portion of Phase 2B and use the overburden to backfill side slopes

7.2. Finish extracting the sand and gravel material in a westerly direction to the top of bedrock.

7.3. Backfill and vegetate the 2:1 side slopes along the west boundary of Phase 2B from

existing grade to the top of bedrock with on-site material and/or imported excess soil.

and the topsoil to dress areas that have been graded and are being prepared for final

the floor of lift 1 to existing grade with on-site material and/or excess soil to establish a 2:1

1A from the floor of lift 1 to existing grade with on-site material and/or excess soil to

from existing grade to the top of bedrock with on-site material and/or imported excess soils

areas not yet planted, shall be planted. The tree screen shall consist of two staggered rows of trees

at irregular centres at the outside toe of the acoustic berms. The tree species to be planted shall

8. The existing tree screens within the western setback along 4th Line, contain two staggered rows of

identified on the plan view of drawing 2 of 5 (see Section N Variations from Control and Operation

of this drawing and as described in the Noise notes under section 0.7 on this drawing.

5. Berms shall be covered with 50 millimetres (minimum) of topsoil, seeded and maintained.

where the berms, the central infiltration pond or the created wetland are required.

10. The tree screens along 4th Line shall remain as part of the final rehabilitated landform.

1. No water diversion and points of discharge to surface water features are proposed.

6. See Typical Acoustic Berm detail on drawing 2 of 5 for additional information.

Resources Act licence #

1. A Spills Contingency Plan exits and shall be implemented.

removal shall occur in accordance with note O.6.g on this drawing.

4. Topsoil and overburden shall be stripped and stored separately.

topsoil and overburden to be temporarily stockpiled.

from Control and Operation Standards on this drawing).

3. Berm side slopes shall not be steeper than 2:1 (horizontal: vertical).

4. The minimum width of the berm crest shall be one metre.

the Noise notes under section O.7 on this drawing.

2. Phases do not represent any specific or equal time period.

O.9.m on this drawing for additional information

4.6. Commence quarry operations through sinking cut.

4.8. Extract the bedrock material in a northerly direction.

5.3. Extract the bedrock material in a westerly direction

5.4 Extract lift 1 to a maximum depth between 469.3 to 472.8 masl

5.5. Extract lift 2 to a maximum depth between 457.8 to 460.6 masl.

rehabilitation, where feasible, or temporarily stockpiled.

6.5. Extract lift 1 to a maximum depth between 470.3 to 472.9 masl.

6.6. Extract lift 2 to a maximum depth between 460.6 to 461.2 masl.

rehabilitation, where feasible, or temporarily stockpiled.

7.5. Extract lift 1 to a maximum depth between 471.0 to 475.1 masl.

7.6. Extract lift 2 to a maximum depth between 460.4 to 462.4 masl.

7.4. Extract the bedrock material in a westerly direction.

6.4. Extract the bedrock material in a northerly direction.

4.9. Extract lift 1 to a maximum depth between 469.0 to 471.0 masl.

4.10. Extract lift 2 to a maximum depth between 458.9 to 460.7 masl.

4.7. Establish temporary sump on the quarry floor.

establish a 2:1 side slope.

5.8. Prepare Phase 2A for extraction.

6.8. Prepare Phase 2B for extraction.

using material from the Infiltration Ponds and Trenches.

processing of aggregate material.

vegetated naturally in the first year.

Standards on this drawing).

Berms and Screening

i. Site Dewatering

Extraction Sequence

Phase 1A

Phase 1B

6. Phase 2A

and are being prepared for final rehabilitation wherever feasible.

Drainage and Siltation Control

Site Preparation

the woodland in the northwest corner of Lot 14, Concession 3, and along the edge of the woodland

8. A sign of at least 0.5 metres by 0.5 metres in size shall be erected and maintained at the

operational access points that says in legible words "This site is licensed under the Aggregate

11.5. Extract lift 2 to a maximum depth between 454.2 to 457.9 masl.

11.6. Extract lift 3 to a maximum depth between 439.1 to 440.3 masl.

11.2. Extract the bedrock material in a westerly direction.

Phase 4B shall remain vertical.

Phase are indicated by spot elevations on drawing 2 of 5.

and safety rock barrier during operations.

except as noted in notes 9 and 10 below.

11. The maximum lift height in the guarry shall be 27 metres.

the limit of extraction.

11.3. Extract lift 1 to a maximum depth between 466.7 to 470.9 masl.

11.4. Extract lift 2 to a maximum depth between 454.0 to 458.0 masl.

11.5. Extract lift 3 to a maximum depth between 437.9 to 439.3 masl.

on-site material and/or excess soil to establish a 2:1 side slope.

4A from the floor of lift 1 to existing grade and the floor of lift 3 to the bottom of lift 2 with

12.1. Finish extracting the sand and gravel material in a westerly direction to the top of bedrock.

11.1. Backfill and vegetate the 2:1 side slopes along the west and south boundary of Phase 4B

11.6. Progressive rehabilitation shall consist of backfilling the west and south boundary of Phase

11.7. Progressive rehabilitation shall also include backfilling the south boundary of Phase 4B

11.8. Once the resource is depleted, and all the required side sloping is established, pumping

11.9. Backfill the pit south of the quarry operation with on-site material and/or excess soil to

establish the grades, slopes and elevations depicted on drawing 4 of 5.

1. All trees within five metres of the excavation face inside the limit of extraction shall be removed.

Topsoil and overburden shall be stripped to a maximum 2:1 (horizontal : vertical) slope adjacent to

3. The existing grade, maximum predicted water table and maximum depth of extraction within each

4. The maximum lift height in the pit shall be 15 metres and shall comply with Ministry of Labour

5. The maximum depth of sand and gravel is 30 metres and shall be extracted in a minimum of two

7. Along the perimeter of the quarry, a minimum six metre wide ledge shall be provided at the toe of

8. The pit outside the quarry limit of extraction shall be extracted to the maximum depths identified by

. The Central Infiltration Pond shall be excavated to the top of bedrock (476.4 to 477.6 masl).

half (484.8 to 490.7 masl) and to the top of bedrock on the east half (480.8 to 484.2 masl).

12. The maximum depth of limestone in Phase 1A is 33 metres and shall be extracted in two lifts.

13. The maximum depth of limestone in Phase 1B is 35 metres and shall be extracted in two lifts.

14. The maximum depth of limestone in Phase 2A is 28 metres and shall be extracted in two lifts.

15. The maximum depth of limestone in Phase 2B is 33 metres and shall be extracted in two lifts.

16. The maximum depth of limestone in Phase 2C is 31 metres and shall be extracted in two lifts.

17. The maximum depth of limestone in Phase 3A is 26 metres and shall be extracted in one lift.

18. The maximum depth of limestone in Phase 3B is 56 metres and shall be extracted in three lifts.

19. The maximum depth of limestone in Phase 4A is 50 metres and shall be extracted in three lifts.

20. The maximum depth of limestone in Phase 4B is 54 metres and shall be extracted in three lifts.

22. Each quarry lift may be extracted in multiple lifts due to the variable heights in the geological

23. Blasting will typically occur once per week but may occur more frequently based on operational

24. The location of the sump on the quarry floor will vary as extraction progresses. See Water

25. The final extraction face for quarry lifts 1 and 3 shall be backfilled to reduce groundwater inflow

26. Due to the variable vertical resource depth in lift 1 of the quarry, the horizontal bench for lift 1

27. Due to material quality, the material in lift 1 shall be extracted and processed on its own. Material in

29. Once the quarry operation advances to Phase 4B, it is anticipated the pit will be depleted and pit

31. Aggregate stockpiles (including recyclable material) shall be located within the limit of extraction

33. Portable office trailers shall be permitted on-site and will be located on the pit and quarry floor as

34. All buildings and structures (including portable trailers and sheds) shall remain a minimum of 30

35. Internal haul road locations will vary as extraction progresses and will be located on the pit and

36. As excavation reaches the limit of extraction or maximum depth in each Phase, progressive

Equipment used on-site may include portable crushers (both primary and secondary), a portable

screening plant, a portable wash plant, rock drills, generators, stackers, conveyors, scrapers,

trucks, fuel trucks, maintenance trucks, explosive trucks, pickup trucks, and tree clearing

Processing shall be located within the processing area identified on drawing 2 of 5 and remain a

minimum of 30 metres from the licence boundary and 90 metres from a property with a residential

. Wash ponds and a sump shall be permitted on the quarry floor in accordance with the

Above ground fuel storage tanks exist in two locations on-site. The first is adjacent to the scale

house on Lot 12, Concession 3 and the second is adjacent to the scale house on Lot 13

3. The fuel storage tanks shall be maintained and replaced in accordance with the Liquid Fuels

4. Fuel trucks may be used to transfer fuel to on-site equipment in accordance with the Liquid Fuels

5. The Spills Contingency Plan shall be adhered to in the event of a spill. The Spills Contingency Plan

1. Scrap may be stored on-site within the Recycling and Scrap Area identified on drawing 2 of 5 and

shall be available on-site and all employees and contractors shall be informed and required to

Handling Code adopted as part of Ontario Regulation 217/01 (Liquid Fuels) under Ontario

Regulation 223/01 (Codes and Standards Adopted by Reference) made under the Technical

Environmental Compliance Approval (ECA) and Permit to Take Water (PTTW) requirements. The

pond and sump will move throughout the life of the operation as extraction progresses horizontally

pulldozers, excavators, extraction loaders, shipping loaders, haul trucks, highway trucks, water

metres from the licence boundary (except the scale house / office and scale on Lot 12, Concession

3 - see Section N Variations from Control and Operation Standards on this drawing) and 90 metres

and remain a minimum of 30 metres from the licence boundary (except where the licence boundary

abuts existing licence # 3512 - see Section N Variations from Control and Operation Standards on

30. Aggregate material may be imported on-site for the purposes of resale and blending.

(identified on drawing 2 of 5) will vary in width. The bench shall include a minimum six metre wide

ledge at the toe of the backfilled 2:1 side slopes from the top of bedrock in order to accommodate

(see Water Resource notes O.9.I and O.9.s on this drawing for additional information). The final

excavation face for quarry lift 2 and a portion of quarry lift 3 in the southwest corner of the quarry

see drawing 4 of 5 for location) shall not be backfilled (see Section N Variations from Control and

21. The quarry lifts will follow the geological formations across the site.

formations. Sub lifts will generally be up to 10 metres in height.

Resources note O.9.t on this drawing for additional information.

an access road and safety rock barrier.

lifts 2 and 3 can be extracted and processed together

32. There are two scale houses / offices and scales on-site.

from a property with a residential use.

J. Equipment and Processing

Wash Pond and Sump

and vertically.

1. Fuel storage shall be permitted on-site.

Standards and Safety Act, 2000

shall be removed on an ongoing basis.

comply with this plan.

M. Scrap and Recycling

Concession 3, as shown on drawing 2 of 5.

L. Fuel Storage

28. The pit operation shall occur concurrently with the quarry operation.

this drawing) and 90 metres from a property with a residential use.

spot elevations on drawing 2 of 5 and shall remain 1.5 metres above the established water table,

10. The South Infiltration Pond shall be excavated to 1.0 metres above the top of bedrock on the west

the 2:1 side slopes from existing grade to top of bedrock in order to accommodate an access road

6. The pit within the quarry limit of extraction shall be extracted to the top of bedrock.

4B from the floor of lift 1 to existing grade with on-site material and/or excess soil to

from the floor of lift 3 to the bottom of lift 2 with on-site material and/or excess soil to

establish a 2:1 side slope. The lift 2 and lift 3 excavation face along the west boundary of

shall cease and the quarry will begin to fill with water until reaching an elevation of 487.0

from existing grade to the top of bedrock with on-site material and/or imported excess soil.

13. The site shall be kept in an orderly condition N. Variations from Control and Operation Standards Variation . This will ensure uninhibited access for A gate shall not be required at the two access points for the farmhouse on Lot 12, the occupants of the farmhouse and their Concession 3 on 4th Line. 2. A gate shall not be required where haul 2. This will eliminate constraints to the roads cross the common licence boundary | movement of equipment between the with licence # 3512. licences which have a common boundary Excavation is required to facilitate Excavation shall occur within a portion of construction associated with the Centra the east setback for Lot 11, Concession 3. 0 metre setback shall be permitted where This will enable material to be extracted the licence boundary abuts licence # 3512 along the common licence boundary and fo in the location shown on the plan view of rehabilitation to transition between this drawing 2 of 5. licence and licence # 3512. Aggregate / overburden shall be removed Removal of aggregate / overburden is from a portion of the east setback for Lot 11, required to facilitate construction associated with the Central Infiltration Pond. Aggregate, topsoil and overburder stockpiles as well as processing equipment may be located within 30 metres of the The licensee has a common boundar common licence boundary with licence # agreement with licence # 3512. . The scale and scale house already exist 2. The scale and scale house on Lot 12. in this location. oncession 3 shall be permitted within 30 metres of the licence boundary. Berms F & G identified on the plan view of The licensee has a common boundary drawing 2 of 5 shall be permitted within agreement with licence # 3512 three metres of the licence boundary. The rehabilitate pit side slopes which are This will maximize the footprint of the guarry west, north and east of the quarry operation operation. shall be 2:1 (horizontal: vertical). The Level 1 & 2 Hydrogeological Portions of the quarry face shall remain Assessment recommended portions of the quarry face remain vertical for water vertical. management purposes. The licence boundary shall be demarcated Fencing shall not be erected along the with painted marker posts (1.8 metres in icence boundary where it traverses the vooded areas or along the common licence height) every 30 metres or less in order to (3) (a) maintain visibility from one marker post to boundary with licence # 3512. 11.7. Progressive rehabilitation shall consist of backfilling the east and south boundary of Phase

O. Technical Recommendations a. All of the recommendations of the technical reports shall be implemented to minimize and prevent impacts to adjacent and surrounding agricultural uses and operations.

The Agricultural area shall be rehabilitated in accordance with the Pit Floor Agricultural Rehabilitation Sequence schematic on drawing 4 of 5 to ensure best practices are followed throughout the progressive rehabilitation of the pit/quarry. c. Topsoil and subsoil shall be replaced in the agricultural rehabilitation area at the following depths: 200 mm for Topsoil and 300 mm for Subsoil.

d. Soil shall be handled under suitable conditions. Travel over soils in the agricultural rehabilitation area shall be minimized to reduce compaction. Ripping / tilling the soil shall h. Blasting procedures such as drilling and loading shall be reviewed on a yearly basis and occur, where necessary, to alleviate soil compaction and shall avoid the mixing of soil Detailed blast records shall be maintained in accordance with current industry best practices e. Once grading is completed within the agricultural area, a vegetation cover (such as perennial crops) shall be immediately established within the agricultural rehabilitation area in order to The guideline for flyrock shall adhere to the standard as outlined in the Aggregate reduce erosion, add organic matter to the soil and improve soil structure. A grass-legume cover crop shall be established throughout the agricultural rehabilitation area and maintained for up to five years and ploughed under annually in order to promote and increase organic

matter. Alternatively, field crops (e.g. wheat, soy, corn, hay) shall be established immediately following rehabilitation grading in the agricultural area. f. An Agricultural Rehabilitation Monitoring Program Report shall be submitted annually by a qualified professional once the final grades have been established in the agricultural rehabilitation area and will continue until it can be demonstrated that the agricultural area has been rehabilitated back to an agricultural condition. The report shall document the stages of the rehabilitation process and include details on matters such as the following:

materials / layers during the process.

feedback from the farmer:

f.h. Summary of post rehabilitation soil capability; and

needed adjustments to best management practices

annual ARA Compliance Assessment Reports.

application of organic material, fertilizers and pesticides.

accordingly, provided dust remains mitigated on site.

not represent any further archaeological concern.

Archaeology

archaeological concern.

within 1,000 metres of a sensitive receptor.

f.a. Evaluate the rehabilitated agricultural condition and soil capability; f.b. Documentation on the alleviation of any soil compaction, drainage provisions, erosion control, etc.;

f.g. Review of drainage issues and recommended mitigation measures as necessary;

f.i. Make recommendations on future agricultural rehabilitation activities and any

g. Best management practices shall be implemented with respect to the storage and

a. The licensee shall apply water or another provincially approved dust suppressant to internal

b. The licensee shall equip any processing equipment that creates dust with dust suppressing

c. The licensee shall obtain environmental compliance approval under the Environmental

d. The site shall operate in accordance with a Best Management Practices Plan for Dust (dated

June 13, 2024), which may be amended from time to time, considering actual impacts and

operational considerations. The recommendations in the Best Management Practices Plan

for Dust are based on the maximum daily production rates. At lower production rates, the

control measures specified in the Best Management Practices Plan for Dust can be reduced

the subject property by Leslie Currie and Associates in 2003. In 2004, the site was subjected

to Stage 3 excavations and a complete Stage 4 recording and excavation. The site is

Archaeological Services Inc. in 2009. The site was found not to meet the provincial criteria

for cultural heritage value or interest and no further work was recommended. The site does

The Euro-Canadian Stone (BaHb-15) site has been documented within the subject property

by Archaeological Services Inc. in 2009. The 2010 Stage 3 excavations at the site indicated

that it does not meet the provincial criteria for cultural heritage value or interest and no

further work was recommended. The site does not represent any further archaeological

d. The Euro-Canadian James Hamilton (BaHb-18) site has been documented within the

The Euro-Canadian Madill (BaHb-17) site has been documented within the subject property

determined that it meets the provincial criteria for cultural heritage value or interest.

installation verified by a licensed archaeologist.

should be followed:

recommended. The site does not represent any further archaeological concern.

subject property by Archaeological Services Inc. in 2016. The site was found not to meet the

provincial criteria for cultural heritage value or interest and no further work was

by Archaeological Services Inc. in 2016. The 2017 Stage 3 excavations at the site

e.a. The Madill (BaHb-17) site is recommended for avoidance and protection using the

e.a.a. The protected area of the archaeological site (including a 10-metre

e.a.b. The existing post and wire fence within the site area should be moved to

e.a.c. If the Aggregate Resources Act licence application is approved, the height

e.a.c.a. The berm height increase must be achieved on the interior (pit side) of

e.a.c.b. Any potential earthworks associated with adding to this berm taking

along the limit of the 10-metre site protective buffer.

Standards and Guidelines of Consultant Archaeologists.

e.a.d. A condition is placed on the Aggregate Resources Act licence stating: that

protective buffer) is shown on the Aggregate Resources Act site plan

accompanying the licence application. The protected site area corresponds

to that shown on Supplementary Documentation Figures 3 and 4 of this

report. No extraction, alterations or soil disturbance shall be permitted to be

incorporate the Stage 3 site limits and a 10-metre protective buffer, and its

of the existing berm which partly overlays the Madill (BaHb-17) site 10-metre

protective buffer (see Supplementary Documentation Figure 4) will need to

be increased by one metre. To achieve this, some disturbance of the berm

itself may be necessary in order to place fill atop it. The following procedure

the berm, away from the archaeological site. Material must be brought

to the downward (pit side) of the sloped berm to achieve the required

height. It must be ensured that no material is allowed to roll into the site

place within the Madill site (BaHb-17) 10-metre protective buffer must

be monitored by a licensed archaeologist, in order to ensure that there

are no impacts to the site area, following the procedures outlined in

archaeological site BaHb-17 is present as shown on the Aggregate

Resources Act site plan; that archaeological site BaHb-17 is of further

disturbance may be carried out within the limits of the protected area of the

archaeological site: that post and wire fencing will be erected along the limits

archaeologist; and, that if the archaeological site is still present when the

Aggregate Resources Act licence is surrendered, a restrictive covenant shall

protected area of the archaeological site shall only be carried out

subsequent to archaeological work by a licensed consultant archaeologist

they are aware of the presence of the archaeological site within the limits of

the Aggregate Resources Act licence and that they are aware of the

restrictions on alteration of an archaeological site of further cultural heritage

value or interest as per the condition on their Aggregate Resources Act

and a report on that work being entered into the Ontario Public Register of

of the archaeological site under the direction of a licensed consultar

be placed on title to continue the protection of the archaeological site.

e.a.e. Any extraction, alterations or soil disturbances within the limits of the

e.a.f. A letter is provided by the Aggregate Resources Act licensee stating that

licence and as per Section 48 of the Ontario Heritage Act.

e.b. Should any potential impacts to the Madill (BaHb-17) site area or its 10- metre

protective buffer be planned, these impacts must be mitigated through the complete

Stage 4 recording and excavation of the site, in accordance with the Ministry of

Citizenship and Multiculturalism's 2011 Standards and Guidelines of Consultant

e.b.a. As outlined in the recommendations provided in the report on the Stage 3

(see Supplementary Documentation Figure 2).

Archaeological Assessment of the Madill (BaHb-17) site (Archaeologica

Services Inc. 2018b), the Stage 4 mitigation of impacts to the site should

commence with the hand-excavation of additional one- metre square units

around high-yielding deposits, initially placed around Stage 3 units

490N-200E, 495N-200E, 500N-200E, 500N-205E and 505N- 200E. These

excavations should continue until yields drop to 150 artifacts per square

cultural heritage value or interest; that no extraction, alterations or soil

Section 4.1.5 of the Ministry of Citizenship and Multiculturalism's 2011

area itself. The existing post and wire fence shall be reestablished

carried out within the limits of the protected area of the archaeological site.

considered to have been completely excavated and does not represent any further

b. The Euro-Canadian BaHb-14 site has been documented within the subject property by

a. The Euro-Canadian Theodore Lusty Homestead (BaHb-1) site has been documented within

or collection devices if it is located within 300 metres of a sensitive receptor.

Protection Act where required to carry out operations at the pit or quarry.

haul roads and processing areas, as necessary to mitigate dust, if the pit or quarry is located

The report shall include observational documentation, records of activity and

quantitative information on soil conditions. These reports will be appended as part of

that are located outside of the pit limit of extraction as shown on Drawing 1 of 5. f.c. Description of how the soil has been replaced and any amendments added (fertilizer, b. There shall be no site disturbance between the pit extraction limit and the protected wetlands and significant woodlands as shown on Drawing 1 of 5 with the exception of the f.d. Description of any seeding or planting that has occurred; following that are located in the southeast corner of the licence boundary: the proposed acoustic berm, the proposed central infiltration pond and the created wetland. f.e. A review of previous rehabilitation management activities and observations regarding field conditions f.f. Report of agricultural activity (crops grown, annual yields) and any anecdotal

c. The areas located between the pit limit of extraction and the edges of the protected wetlands and significant woodlands, with the exception of the three areas identified above, as shown on Drawing 1 of 5, shall be allowed to passively re-naturalize and will be supplemented with targeted native species plantings and seeding. The native tree species will include: White Pine (Pinus strobus), Red Maple (Acer rubrum) and Trembling Aspen (Populus tremuloides) with smaller numbers of Sugar Maple (Acer saccharum), Black Cherry (Prunus serotina), Hop Hornbeam (Ostrya virginiana), American Basswood (Tilia americana). The native shrub species will include: Gray Dogwood (Cornus racemosa), Staghorn Sumac (Rhus typhina), Sandbar Willow (Salix interior) and Nannyberry (Viburnum lentago). The native meadow species (Ontario Seed Company Mixture "CVC7") will include: Black-eyed Susan (Rudbeckia hirta), Blue Wood Aster (Symphyotrichum cordifolium), Canada Anemone (Anemone canadensis), Canada Goldenrod (Solidago canadensis), Common Milkweed (Asclepias syriaca). Evening Primrose (Oenothera biennis). Grass-leaved Goldenrod (Euthamia graminifolia), Meadow Sedge (Carex granularis), New England Aster (Symphyotrichum novae-angliae), Riverbank Wild Rye (Elymus riparius), Virgin's Bower (Clematis virginiana) and Wild Bergamot (Monarda fistulosa).

e.b.b. Following the block excavation, mitigation should continue with the

be fully hand excavated and documented.

f. A review of past archaeological work undertaken within the subject property has determined

that approximately 7% of its area has not been evaluated by previous Stage 2

Archaeological Assessment (Figure 8; Supplementary Documentation Figure 1). These

areas consist of two woodlots located in the northeast and southeast, both situated outside

the current and proposed limits of extraction. These woodlot areas retain potential for

archaeological resources and have an Environmental Conservation designation overlay

under the Township of Melancthon Official Plan (Corporation of the Township of Melancthon,

2014). Excerpts from the Official Plan can be found in the Supplementary Documentation

accompanying this report along with correspondence with Ministry of Natural Resources

and Forestry staff confirming that these woodlot areas lie outside the limits of extraction and

cannot be disturbed or altered. In accordance with Section 7.8, Standard e. of the Ministry of

Citizenship and Multiculturalism's 2011 Standards and Guidelines of Consultant

Archaeologists, the area of each woodlot is recommended for exemption from Stage 2

f.a. The exempted areas are shown on the Aggregate Resources Act site plan

shown on Figure 8 and Supplementary Documentation Figure 1 of this report.

f.b. A condition is placed on the Aggregate Resources Act licence stating: that areas

f.c. That any extraction, alterations or soil disturbances within the limits of these

f.d. A letter is provided by the Aggregate Resources Act licensee stating that they are

regarding the avoidance of these areas (see Supplementary Documentation)

f.e. Should the limit of extraction (as indicated on Figure 8) change for any reason, then

the Model Municipal Noise Control By-law publication NPC 119 (1978) or any such

quideline which supersedes this standard, blast designs and protocol shall be reviewed prior

the direction of the overpressure propagation and flyrock from the face shall be away from

and overpressure. Blast designs shall be modified as required to ensure compliance with

applicable guidelines and regulations. Decking reduced hole diameters and seguential

Resources Act O. Reg 244/97, specifically "A licensee or permittee shall take all reasonable

measures to prevent flyrock from leaving the site during blasting if a sensitive receptor is

located within 500 metres of the boundary of the site" or any such document, regulation or

a. The pit limit of extraction was previously approved on Aggregate Resource Act Licence

626199, 129167 and 625155 and shall be maintained for this licence. The quarry limit of

extraction shall be a minimum of 15m from wetlands and 10m from significant woodlands

to any subsequent blasts and revised accordingly in order to return the operations to

e. In the event of an exceedance of NPC 119 limits or any such document, regulation or

f. Orientation of the aggregate extraction operation shall be designed and maintained so that

g. Blast designs shall be continually reviewed with respect to fragmentation, ground vibration

blasting techniques shall be used to ensure minimal explosives per delay period initiated.

document, regulation or guideline which supersedes this standard.

modified as required to ensure compliance with industry standards.

compliant levels.

Cultural Heritage

6. Natural Environment

Operational

structures as much as possible.

guideline which supersedes this standard.

a. There are no site plan recommendations.

accompanying the licence application. The exempted areas correspond to those

exempted from Stage 2 Archaeological Assessment are present as shown on the

Aggregate Resources Act site plan: that no extraction, alterations or soil disturbance

may be carried out within the limits of these areas: that post and wire fencing will be

erected along the limits of these areas under the direction of the licensed consultant

woodlots may only be carried out subsequent to archaeological work by a licensed

consultant archaeologist and a report on that work being entered into the Ontario

aware of the exempted areas and confirming that instructions will be given to staff

further Stage 2 Archaeological Assessment must be conducted on the remaining 7%

Archaeological Assessment on the basis of the application of the following measures:

archaeologist

Public Register of Archaeological Reports.

mechanical removal of the plough zone via Gradall or backhoe equipped

with a smooth bucket across the site area as defined by the Stage 3

assessment (see Supplementary Documentation Figure 2). This stripped

features. The exposed subsoil must then be cleaned by shovel or trowel and

the surface examined for cultural features. Any cultural features must then

area must include a buffer of at least 10 metres of subsoil free of subsurface

d. Observations of the Species at Risk Bank Swallow (Riparia riparia) or their habitats within the pit/quarry operational area shall be addressed through implementation of Best Management Practices identified for the species and in accordance with the requirements of Ontario Regulation 242/08.

e. Prior to site alteration for creation of the wash plant/stockpile area, and the southern and central infiltration ponds in the south end of the site, an updated habitat assessment and surveys for the Species at Risk Eastern Meadowlark (Sturnella magna) shall be completed. If it is determined that this species still occupies habitat within these areas, habitat removal activities shall be registered with the Ministry of Environment, Conservation and Parks (MECP) through a Notice of Activity, and creation and implementation of a Mitigation Plan in accordance with Ontario Regulation 242/08. All tree removals shall be completed outside of the period April 1st to September 30th unless

otherwise approved by a qualified biologist through completion of a bird nest search and through confirmation that the tree does not provide suitable bat habitat. Nest searches shall only be completed within 48 hours of the tree removals required between April 1 to g. All non-tree vegetation removals shall be completed outside of the period April 1st to August 31st unless otherwise approved by a qualified biologist through completion of a bird nest search of the vegetation. Nest searches shall only be completed within 48 hours of the vegetation removals required between April 1st to August 31st

h. Water shall be managed on site in accordance with the water resources technical recommendations on this drawing. Dust impacts shall be mitigated in accordance with the air quality technical recommendations on this drawing. Artificial lighting shall be shielded or directed away from the protected wetlands and significant woodlands as shown on Drawing 1 of 5. k. When operations and rehabilitation work is occurring adjacent to the protected wetlands and

significant woodlands as shown on Drawing 1 of 5 and has the potential for sedimentation and erosion into the features silt fencing shall be installed, regularly inspected and maintained until the area is adequately vegetated. I. A Spill Response Plan shall be developed and implemented to ensure no release of hazardous materials from the site or into the protected wetlands and significant woodlands as shown on Drawing 1 of 5. Wetland Creation

m. A new wetland shall be created in the area as shown on Drawing 2 of 5 within three years of issuance of the ARA license for the pit/quarry. The following steps shall be followed for the creation of the new wetland

n. The grading limit for the new wetland shall be staked to demarcate the extent of the feature. o. The removal of vegetation within the envelope of the new wetland shall occur outside of April p. The new wetland shall be graded and include a low-permeability lens of silt-clay across the bed of the new wetland to facilitate water retention and conditions that will support nydrophytic yegetation. The wetland creation area shall be overlain with a minimum of 20 cm of topsoil. Site photographs shall be taken to document the work.

q. A nurse crop of proso millet (Panicum miliaceum), annual rye (Lolium multiflorum) or oats (Avena sativa), or any combination of these species, shall be applied at a rate of 25 kg/ha. r. In the early spring of Year 2 (late March or early April), native seed mixtures shall be applied to the wetland creation area. Two seed mixtures shall be applied in separate zones, each at a rate of 25 kg/ha: a "Riparian Mixture" intended for the saturated wetland fringe and an

"Upland Mixture". The riparian mixture will contain: Blue Vervain (Verbena hastata). Blue

Flag Iris (Iris versicolor), Purple-stemmed Aster (Symphyotrichum puniceum), Fox Sedge

(Carex vulpinoidea), Green Bulrush (Scirpus atrovirens), New England Aster Symphyotrichum novae-angliae), Rice Cutgrass (Leersia oryzoides), Soft Rush (Juncus effusus), Spotted Joe Pye Weed (Eutrochium maculatum), Square-stemmed Monkeyflower (Mimulus ringens), Swamp Milkweed (Asclepias incarnata), Virginia Wild Rye (Elymus virginicus), Wool Grass (Scirpus cyperinus). The upland mixture will contain: Black-eyed Susan (Rudbeckia hirta), Blue Wood Aster (Symphyotrichum cordifolium), Canada Anemone (Anemone canadensis). Canada Goldenrod (Solidago canadensis). Common Milkweed (Asclepias syriaca). Evening Primrose (Oenothera biennis). Grass-leaved Goldenrod (Euthamia graminifolia). Meadow Sedge (Carex granularis). New England Aster (Symphyotrichum novae-angliae). Riverbank Wild Rve (Elymus riparius). Virgin's Bowe (Clematis virginiana) and Wild Bergamot (Monarda fistulosa). Site photographs shall be taken to document the spring hydrological condition within the created wetland. s. If erosion is evident in the area seeded in Year 1, additional nurse crop seed shall be applied to these areas in the spring of Year 2. t. In mid to late-spring of Year 2, tree and shrub plantings shall be installed in the riparian and upland areas surrounding the shallow water. All woody species shall be planted before June 1st. Native trees shall be planted to a density that is equivalent to 1,200 trees/ha and will

fringe area and Gray Dogwood (Cornus racemosa), Staghorn Sumac (Rhus typhina) in the upland area adjacent to the wetland. All trees and shrubs shall be planted into the graded topsoil using hand tools, an auger or a mini-excavator. All material shall comprise of whips (bare root or plug) and small potted material (2-to-5-gallon pot size). u. Wildlife microhabitat features shall be installed within the wetland prior to tree and shrub planting. Logs and woody debris shall be placed within the wetland, including along the perimeters of the permanent and temporary pond features. Rock piles and/or concrete slabs shall be placed within seasonally drier portions of the wetland

include White Pine (Pinus strobus), Red Maple (Acer rubrum), Trembling Aspen (Populus

tremuloides). Native shrub shall be planted at a ratio of one shrub to four trees and will

include Sandbar Willow (Salix interior) and Nannyberry (Viburnum lentago) in the saturated

Wetland Removals v. The existing wetlands located within the footprint of the central infiltration pond shall occur outside of the period of October 1st to May 15^{tr} w. Immediately prior to the removal of the wetlands, a wildlife salvage shall be undertaken to capture and relocate herpetofauna from the wetlands. The wildlife salvage shall be undertaken in accordance with the following:

w.a. Wildlife exclusion fencing that is suitable to inhibit salamanders and anurans shall first be installed around the habitat features w.b. If required, the wetland ponds shall be partially drained to allow for the wildlife salvage to be undertaken, and then progressively drained in conjunction with the wildlife salvage until they have been fully or near-fully drained. w.c. The wetland features shall be comprehensively searched by qualified biologists and captured individuals shall be documented by the biologists prior to release in

suitable wetlands on-site.

w.d. The wildlife exclusion fencing shall remain installed and functional until the habitat x. Outside of the agricultural rehabilitation area, ecological restoration and enhancement of the

site shall be undertaken during rehabilitation and includes the following features: Native meadow; Woodland; Side Slopes; and a Quarry Lake Littoral Zone. The native meadow area as shown on Drawing 4 of 5 shall be created in the following steps:

y. Grading of soil and placement of at least 20 cm of topsoil shall occur across the entire meadow restoration area. This shall be completed outside of the breeding bird window (April z. The meadow restoration area shall be seeded in April or May with Red Clover and Alfalfa.

aa. A native seed mix of Black-eyed Susan (Rudbeckia hirta), Blue Wood Aster (Symphyotrichum cordifolium), Canada Anemone (Anemone canadensis), Canada Goldenrod (Solidago canadensis). Common Milkweed (Asclepias syriaca). Evening Primrose (Oenothera biennis) Grass-leaved Goldenrod (Futhamia graminifolia) Meadow Sedge (Carex granularis), New England Aster (Symphyotrichum novae-angliae), Riverbank Wild Rye (Elymus riparius), Virgin's Bower (Clematis virginiana) and Wild Bergamot (Monarda fistulosa) shall be seeded via hand-broadcasting in the spring, either before or after seeding the Red Clover and Alfalfa. All seeding shall be completed by June 1st. The native seed mixture shall be applied at 25 kg/ha.

The area shall be seeded at a rate of 10 kg/ha.

ab. 50 equally-spaced trees shall be planted along the western boundary in the spring either concurrent with the seeding work, or in the following year. ac. The tree stock shall be potted material (2-to-5-gallon pot size) and species may include

White Pine, Red Maple or Trembling Aspen. A 5-gallon pail of wood mulch, or an equivalent coconut fibre mat, shall be placed at the base of each tree following the planting. ad. The successful establishment of the meadow area shall entail the establishment of 95-100% herbaceous cover after 2 growing seasons and the accumulation of thatch.

The woodland area as shown on Drawing 4 of 5 shall be created in the following steps: ae. The woodland area shall be graded and shall include vernal pool features

af. 20 cm of topsoil shall be graded across the area.

ag. The area shall be cultivated to minimize soil compaction. of the subject property prior to any land-disturbing activities, in accordance with the Ministry of Citizenship and Multiculturalism's 2011 Standards and Guidelines for ah. Following cultivation, a nurse crop of proso millet (Panicum miliaceum), annual rve (Lolium Consultant Archaeologists. multiflorum) or oats (Avena sativa), or any combination of these species, shall be applied at

g. It is recommended that the balance of the subject property (representing approximately 92%), situated beyond the area of the Madill site (BaHb-17) and its protective 10-metre ai. A native meadow seed mix consisting of the following species shall be applied at a rate of 25 buffer (representing approximately 1% of the subject property), and excluding the kg/ha. The native seed mix shall be planted in conjunction with or following application of unassessed woodlot areas in the northeast and southeast (representing 7%, as discussed the nurse crop. Species: Black-eyed Susan (Rudbeckia hirta), Blue Wood Aster above) be cleared of archaeological concern. The location and extent of these unassessed Symphyotrichum cordifolium), Canada Anemone (Anemone canadensis), Canada woodlot areas are illustrated in Figure 8. while a map of the property with the detailed location of the Madill site and its 10-metre buffer zone can be seen in supplementary documentation submitted alongside this report (Supplementary Documentation Figure 3).

oldenrod (Solidago canadensis), Common Milkweed (Asclepias syriaca), Evening Primrose (Oenothera biennis), Grass-leaved Goldenrod (Euthamia graminifolia), Meadow Sedge (Carex granularis), New England Aster (Symphyotrichum novae-angliae), Riverbank Wild Rye (Elymus riparius), Virgin's Bower (Clematis virginiana) and Wild Bergamot (Monarda a. An attenuation study shall be undertaken by an independent blasting consultant during the ai. Nursery stock of the following native tree species such as White Pine (50% of the area) first 12 months of operation in order to obtain sufficient quarry data for the development of site specific attenuation relations. This study shall be used to confirm the applicability of the Trembling Aspen, Red Maple, Sugar Maple, Black Cherry, Hop Hornbeam and American Basswood shall be planted to a density that is equivalent to 1,200 trees/ha. Plantings within initial guideline parameters and assist in developing future blast designs. the vernal pool features shall be planted at a higher density of 1,400 trees/ha. Planting of nursery stock may be supplemented through tree seed collection within the adjacent b. Blasts shall be designed and loaded adhering to Table 2: Maximum Explosive Load at Set Offset Distances - 12.5 mm/sec as well as Table 3: Maximum Explosive Load at Set Offset

Distances to Receptors in Front of the Blast - 128 dB(L) until the attenuation study is ak. The following native shrub species shall be planted at a ratio of one shrub to four trees: Gray completed. Upon completion of the attenuation study, a site-specific attenuation relation shall be developed and shall be utilized to develop a new load chart to be utilized going Dogwood and Staghorn Sumac. al. Taking into account anticipated tree mortality, the goal of the woodland area is to include c. All blasts shall be monitored for both ground vibration and overpressure at the closest approximately 2500 trees and 1000 shrubs after three growing seasons. privately owned sensitive receptors adjacent the site, or closer, with a minimum of two (2)

digital seismographs - one installed in front of the blast and one installed behind the blast. The side slope area as shown on Drawing 4 of 5 shall be created in the following steps: Monitoring shall be performed by an independent third party engineering firm with specialization in blasting and monitoring. am. A nurse crop of proso millet, annual rve or oats, or any combination of these species, shall d. The guideline limits for vibration and overpressure shall adhere to standards as outlined in

be applied at a rate of 25 kg/ha once final grading of the side slopes is completed. an. A native meadow seed mix consisting of asters and goldenrods shall be applied via hand broadcasting to the area at a rate of 25 kg/ha. The native meadow seed mix shall be planted in conjunction with or following the application of the nurse crop.

ao. Nodes of trees and shrubs seedlings consisting of White Pine, Trembling Aspen, Staghorn

Sumac and Gray Dogwood shall be planted in the early spring at various locations in the

area spaced approximately every 100 m in staggered elevations. Along the side slopes adjacent to the eastern licence boundary between the significant woodlands identified on Drawing 1 of 5, the nodes shall be created every 50 m in this area. ap. Each tree and shrub node shall include 15 stems of plug stock for each species, for a total of

Quarry Lake Littoral Zone The Quarry Lake Littoral Zone area as shown on Drawing 4 of 5 shall be created in the following aq. Seeding of emergent species along the nearshore area around the perimeter of the lake shall include the following native species: Broad-leaved Cattail, Broad-leaved Arrowhead,

ar. The seeding shall be completed at any time of the year outside of frozen conditions once the final lake level has been achieved. as. Seeding in this area shall be completed via hand broadcasting at a rate of 4 kg/ha of shoreline. The species mixture will include: Blue Vervain (Verbena hastata), Blue Flag Iris (Iris versicolor), Purple-stemmed Aster (Symphyotrichum puniceum), Fox Sedge (Care) vulpinoidea), Green Bulrush (Scirpus atrovirens), New England Aster (Symphyotrichum novae-angliae), Rice Cutgrass (Leersia oryzoides), Soft Rush (Juncus effusus), Spotted Joe Pye Weed (Eutrochium maculatum), Square-stemmed Monkeyflower (Mimulus ringens),

Water Plantain, Soft Rush, Soft-stemmed Bulrush, White Water Lily and Variegated Pond

Swamp Milkweed (Asclepias incarnata), Virginia Wild Rye (Elymus virginicus), Wool Grass (Scirpus cyperinus). Monitoring During Operations and Rehabilitation at. In addition to the Water Resources Monitoring Program, the following Ecological Monitoring Program shall be implemented during operations and rehabilitation of the license.

au. In the wetlands identified on the ecological monitoring location schematic, amphibian call surveys shall be completed in accordance with the Marsh Monitoring Program amphibian survey protocol (BSC 2009). The monitoring of wetlands located outside of the licence boundary shall be conducted subject to landowner permission/assess being granted. The above surveys shall be completed as follows: au.a. 2 years prior to commencement of quarry operation, monitoring shall be undertaken to establish a baseline condition, except for in the created wetland. au.b. During years 1 to 5 of the quarry operation, monitoring shall be undertaken annually.

au.c. Commencing in year 6 and continuing for the duration of the operations and 3 years after rehabilitation, monitoring shall be undertaken bi-annually. av. In the fish habitat identified on the ecological monitoring location schematic, electrofishing shall be completed to track fish species presence and occurrence of sensitive species (e.g., Brook Trout) subject to landowner permission/assess being granted. The above surveys

av.a. 2 years prior to commencement of quarry operation, monitoring shall be undertaken to establish a baseline condition. av.b. During years 1 to 5 of the quarry operation, monitoring shall be undertaken annually. av.c. Commencing in year 6 and continuing for the duration of the operations and rehabilitation, monitoring shall be undertaken bi-annually.

aw. In the locations identified on the ecological monitoring location schematic, continuous water temperature monitoring shall be completed through the use of data loggers for April through November, to track the maintenance of cool/coldwater watercourse thermal regimes subject to landowner permission/assess being granted. The above surveys shall be completed as

aw.a. 2 years prior to commencement of quarry operation, monitoring shall be undertaken to establish a baseline condition. aw.b. Commencing in year 1 of quarry operation and continuing for the duration of the operations and rehabilitation, monitoring shall be undertaken annually. water level data loggers and staff gauges for April through November to ensure that the

ax. Water levels within the created wetland shall be monitored through the use of continuous desired seasonal hydrological conditions are being maintained throughout the quarry operational period. These results will be used to determine the amount of water to be pumped from the quarry sump or clear water pond. No process water will be discharged from the quarry directly into the created wetland prior to it being treated. During rehabilitation, the land surrounding the created wetland shall be graded in accordance with Drawing 4 of 5 to provide surface water to this feature and no further pumping shall be required once the surrounding landform is established. ay The following inspections of restoration and enhancement vegetation seeding and plantings

shall be undertaken by a qualified biologist during the quarry operational and rehabilitation

az. Monitoring shall be undertaken during the peak growing season (June to September) of the first year following restoration of the following: az.a. Restored areas between the pit limit of extraction and protected wetland and woodland edges az.b. Created wetland

az.c. Rehabilitation areas (e.g. Native Meadow, Woodlands, Side Slopes and Quarry Lake ba. Monitoring of these areas shall continue during years 2, 3 and 5 following the installation of

(e.g., placement of tree guards to mitigate deer browse effects, enhanced watering during

drought, cutting back competing vegetation). Invasive species growth shall be managed

Table 1: Reference Sound Pressure Levels of Aggregate Quarry Equipment

The shipping loaders were assumed to operate at a 50% duty cycle

2 - Reference sound level for conveyors is in dBA per metre at a distance of 30 m

d. The sound emissions of all construction equipment involved in site preparation and

e. New equipment technology or different configurations may allow proposed changes to any

rehabilitation activities shall comply with the sound level limits specified in the MECP

portion of the extraction and processing operations including additional equipment to operate

on the site, equipment to be substituted, and/or different berm heights, while still meeting the

applicable sound level limits. Changes may be permitted to the site operations and noise

controls provided that the changes still meet the sound level limits, as confirmed through

documentation prepared by a Professional Engineer specializing in noise control. Prior to

any modification, the licensee shall provide the Ministry of Natural Resources (MNR) with

f. Where acoustic barriers are required, they shall be solid, with no gaps or opening, and shall

satisfy a minimum area density of 20 kg/m2. It could take the form of a pit or quarry face,

stockpile, acoustic fence, International Organization for Standardization (ISO) containers, a

combination of these, or any construction satisfying the requirements of an acoustic barrier.

. Acoustical barriers shall be implemented and maintained at the heights and lengths specified

in Table 2, below, for the duration of extraction and processing within the pit and guarry.

Pit Processing Plant

Primary Processing Plant

Secondary Processing Plan

Wash Plant

Shipping Loader

Extraction Loader

Quiet Rock Drill

Conveyors

Highway Truck - 25 km/hr

Off-road Truck - 25 km/hr

publication NPC-115 "Construction Equipment".

Regular Rock Drill

bb. The monitoring shall include an inspection to assess the success of herbaceous, shrub and tree species growth, establishment and survival. The assessment will determine is the site is progressing toward the desired vegetation community type and will provide generalize percentage survival of tree and shrub stems, by species, as well as an assessment of seed mixture representation. If required, recommendations from a qualified biologist shall be implemented to create the desired rehabilitated areas. This may include supplemental seeding of seeded vegetation that is showing signs of inadequate growth or establishment. supplemental native tree/shrub plantings to counter observed die-off or decline, and/or remedial measures to improve vegetation growth conditions or rehabilitate declining growth

where feasible as per qualified biologist recommendations. Observation of wildlife usage of the restoration zones, including placed microhabitat features, shall be documented. a. The proposed hours of extraction and processing shall be limited to the daytime hours only (7:00 am to 7:00 pm) on Monday to Saturday, with shipping operations limited to the hours of 6:00 am to 7:00 pm on Monday to Friday and 6:00 am to 5:00 pm on Saturdays.

b. The extraction, processing, and shipping equipment operating in the pit / quarry is limited to: One Pit Processing Plant: Two Quarry Processing Plants One Primary Processing Plant: and One Secondary Processing Plant

Reference Sound Pressure Level at 30m (dBA

established between the Primary and Secondary Processing Plants and VL37 with a One Wash Plant: minimum height of 6 m and at a maximum distance of 30 m from the Quarry Four Shipping Loaders; Processing Plants. Three Extraction Loaders • Two Rock Drills OR Quiet Rock Drills; aa.c. During quarry extraction of Phase 2A and 2B with a Regular Drill or 2 Quiet Drills, an acoustic barrier shall be established between the drill(s) and VL37 with a minimum 60 Highway truck trips/hr (120 passes/hr); and neight of 4 m and a maximum distance of 7 m from the drill(s). 15 Off-road Trucks trips/hr (30 passes/hr) aa.d. During quarry processing in Phase 2C, an acoustic barrier shall be established c. The aggregate pit equipment shall satisfy the noise emissions levels listed in Table 1: between the Secondary Processing Plant and VL37 with a minimum height of 15 m at a maximum distance of 100 m; OR a minimum height of 9 m at a maximum

> 8. <u>Traffic</u> a. There are no site plan recommendations 9. Water Resources Water levels shall be collected continuously with automatic water level transducers, with manual measurements collected monthly at the following groundwater monitors: PW1, OW1, OW3B, OW3C, OW4A, OW4B, OW4C, OW5A, OW5B, OW5C, OW6A, OW7A, OW7C OW8A, OW9B, OW10B, OW12A, OW12B, OW13A, OW13C, OW14A, OW14C, OW16A OW16C, OW18A, OW18C, OW19A, OW19C, OW20A, OW20C, OW21A, OW21C, OW22A OW22C, OW23A, OW23C, OW24A, OW24C, OW25A, OW25C, OW26A, OW26C, OW27C,

OW28A OW28C OW29A OW29C OW30C and the four Injection Wells as shown on the Monitoring Locations schematic (Drawing 1 of 5). b. Considering the historical and monitoring data collected within 3 years of extraction extending below the groundwater table, baseline groundwater level conditions are to be established for OW3B, OW3C, OW4A, OW4B, OW4C, OW5A, OW5B, OW5C, OW6A OW9B, OW10B, OW13A, OW13C, OW14A, OW14C, OW21A, OW21C, OW22A, OW22C OW23A, OW23C, OW24A, OW24C, OW25A, OW25C, OW26A, OW26C, OW27, OW28A, OW28C, OW29A, OW29C, and OW30C, as shown on the Monitoring Locations schemati-(Drawing 1 of 5). If water levels change more than the established thresholds developed for the Phases One through Four, and Rehabilitation conditions considering the predicted groundwater levels and established baseline conditions, a detailed investigation will be undertaken in regards to the potential impacts to local groundwater system. This investigation will include a review of current guarry activities, a review of on-site and off-site groundwater levels, and a review of climate data. Should guarry activities be found to be responsible for the change the licensee will discuss options with the MNR and consider the

b.a. Suspension of below water table activities. b.b. Moving mining to a different phase.

b.c. Conducting a detailed investigation including installing more observation wells. Water levels shall be collected continuously with automatic water level transducers April through November, with monthly manual measurements collected during the same period at the following surface water monitors: North Pond, South Pond, SW1 and SW2, as shown on the Monitoring Locations schematic (Drawing 1 of 5).

d. Water levels shall be collected continuously with automatic water level transducers Apr through November, with monthly manual measurements collected during the same period subject to landowner permission/access being granted at the following surface water monitors: NAT-18 and NAT-19, as shown on the Monitoring Locations schematic (Drawing 1 Legal Description

Part of West half of Lot 11, Concession 3

West Half of Lots 12, 13 and 14, Concession 3

(former geographic Township of Melancthon)

Township of Melancthon, County of Dufferin

e. Water levels shall be collected continuously with automatic water level transducers, with manual measurements to be collected monthly subject to landowner permission/acces.

being granted at the following private water wells: DW1, DW2, DW3, DW4, and DW5 as shown on the Monitoring Locations schematic (Drawing 1 of 5). f. Water levels and streamflow shall be collected continuously with automatic water level transducers April through November, with monthly manual measurements collected during the same period at the following surface water monitors: SW4, SW5, SW6, SW13, SW14,

SW18, and SW24, as shown on the Monitoring Locations schematic (Drawing 1 of 5). g. Considering the historical and monitoring data collected within 3 years of extraction extending below the groundwater table, baseline base flow conditions via a threshold are to be established for SW24. If base flows change more than the established thresholds for this location developed for the Phases One through Four, and Rehabilitation condition considering the predicted base flows and confirmed baseline conditions, a detailed investigation will be undertaken in regard to the potential impacts to local groundwater-surface water system. This investigation will include a review of current quarry activities, a review of on-site and off-site groundwater and surface water flows at other monitoring locations, and a review of climate data. Should quarry activities be found to be responsible for the change the licensee will discuss options with the MNR and consider the

g.a. Suspension of below water table activities. g.b. Moving mining to a different phase.

Table 2: Perimeter Berms

h. The Wash Plant shall be located at the pit floor at an elevation of 494 MASL or lower in the

area designated on the Operational Plan; between 225 and 375 m of south of the south

A local barrier with a minimum height of 6 m shall be established within 30 m of the Wash

The Pit Processing Plant shall operate on the top of bedrock at a maximum elevation of

approximately 490 MASL and shall only operate in the northern area of the licence (Phase

continuously block the line of sight from the Pit Processing Plant in the direction of the listed

Table 3: Pit Processing Plant Barriers during Simultaneous Pit and Quarry

k. During simultaneous pit and quarry operations, an acoustical barrier shall be established to

I. Processing of pit material in Phase 2C shall be limited to a single Pit Processing Plant.

m. The Pit Processing Plant shall not operate simultaneously during extraction or processing of

n. During extraction in Phase 1A and 1B, when the Processing Plants are operating at top of

o. During extraction of Bench 1 in Phase 1B through 2C, the Secondary Processing Plant shall

be located on the Bench 1 floor at an elevation of approximately 472 masl or lower as soon

b. During processing operations in the first two benches of the quarry, acoustic barriers shall be

established to block line of sight from the Primary Processing Plant in the direction of the

Table 4: Primary Processing Plant Barriers - Phase 1 Through 2

e Shielded

R20

R20

R01

R20

R20

R01

R28, R29

R20

R01

R20

R20

R28, R29

R01

R28, R29

Permitted Drill | Receptors to | Minimum Height @ Maximum

Setups be Shielded Distance to Plant

R20

R01

. Drilling operations in Phases 1 and 2 shall be limited to any one those outlined in Table 6 for

a specified phase. Receptors listed for the specified arrangement shall be shielded through

Table 6: Permitted Drill Setups and Required Barriers - Phase 1 Through 2

q. During processing operations in the first two benches of the quarry, acoustic barriers shall be

following receptors based on the location of the plant, as outlined in Table 5.

established to block line of sight from the Secondary Processing Plant in the direction of the

Table 5: Secondary Processing Plant Barriers - Phase 1 Through 2

rock, processing shall not occur within 175 m of the east guarry boundary.

following receptors based on the location of the plant as outlined in Table 4.

Top of rock

Bench 1 & 2

Bench 1 & 2

Bench 1 & 2

Bench 1 & 2

Bench 1

Bench 1

Bench 1 & 2

Bench 1 & 2

the provision of the specified noise barrier as required in Table 6.

2 Quiet

Regular; OR

Regular; OR

l Regular; OR

Regular: OR

2 Quiet

2 Quiet R29, R28

2 Regular R28, R29

s. During guarry extraction in Phase 3A, the Primary and Secondary Processing Plants shall

operate at the Bench 2 floor elevation of 456.5 masl or lower, and the Primary Processing

Plant shall be located at an elevation of approximately 446 masl or lower as soon as

When the Secondary Processing Plant operates in Phase 3A and is more than 350 m from

the north licence boundary, an acoustic barrier shall be established between the Secondary

Processing Plant and Receptor R01 having a minimum height of 7 m at a maximum distance

of 30 m from the plant; OR a minimum height of 5.2 m at a maximum distance of 10 m from

When the Primary Processing Plant operates in Phase 3A and is more than 350 m but less

than 700 m from the north licence boundary an acoustic barrier shall be established

between the Secondary Processing Plant and Receptors R28 and R29. The barrier shall

have a minimum height of 9 m at a maximum distance of 30 m from the plant; OR a

v. During extraction in Phase 3B, the Secondary Processing Plant shall operate at the Bench 2

w. When 2 regular drills are operating simultaneously during extraction of Bench 1 in Phase 3B,

x During extraction of Phase 4A and 4B, the Secondary Processing Plant shall operate at the

quarry floor with an elevation of approximately 440 masl and shall be located within 275 m of

Drilling operations during extraction of Bench 1 of Phase 4A shall be limited to a single

z. During Extraction of Bench 1 of Phase 4B, when 2 regular drills are operating

aa. If a dwelling at VL37 is constructed and occupied during extraction or processing operations

aa.a. During pit extraction, an acoustical barrier shall be established between the Pit

aa.b. During quarry processing at top of rock in Phase 1A, an acoustic barrier shall be

distance of 30 m; OR with a minimum height of 5.2 m at a maximum distance of 10

Processing Plant and VL37 if quarry operations are occurring simultaneously as

able 7: Pit Processing Barriers for VL37

Minimum Height @ Maximum Distanc

to Pit Processing Plant

6 m @ 20 m

9 m @ 30 m

with a minimum height of 4 m and a maximum distance of 7 m from the drills.

simultaneously an acoustic barrier shall be established between the drills and Receptor R01

an acoustic barrier shall be established between the drills and Receptor R01 with a minimum

minimum height of 5.2 m at a maximum distance of 10 m from the plant.

height of 4 m and a maximum distance of 7 m from the drills.

the western extraction limit as illustrated on the Operation Plan.

in the pit or quarry, the following noise controls shall apply:

Quarry Not Operating

floor elevation of 456.5 masl or lower.

Regular Drill, or two Quiet Drills.

Vacant Lot VL37 Noise Controls

noted in Table 7

2 Quiet

1 Quiet

2 Quiet

Drill Location (Phase)

Plant Location (Phase) | Plant Elevation |

(Phase 1A / 1B Extraction)

Plant, between the Wash Plant and Receptor R04 when quarry extraction of the first and

Location

West, south and east

Stockpiling Area

and Processing and

Stockpiling Area

West of Phase 2

West of Phase 20

North of Phase 20

East of Phase 1

East of Phase 1

Minimum Height @ Maximum Distance to Plan

9 m @ 30 m

Receptors to Minimum Height @ Maximun

Distance to Plant

7.8 m @ 10 m

12 m @ 40 m; OR

7.8 m @ 10 m

10 m @ 60 m

9 m @ 30 m; OR

5.2 m @ 10 m

10 m @ 60 m; OR

5.2 m @ 10 m

9 m @ 30 m; OR

5.2 m @ 10 m

10 m @ 60 m; OR

5.2 m @ 10 m

10 m @ 60 m: OR

5.2 m @ 10 m

5.2 m @ 10 m

10 m @ 60 m; OR

5.2 m @ 10 m

Distance to Plant

10 m @ 40 m; OR

7.8 m @ 10 m

12 m @ 40 m; OR

9 m @ 30 m: OR

5.2 m @ 10 m

9 m @ 30 m; OR

5.2 m @ 10 m

10 m @ 60 m; OR

5.2 m @ 10 m

10 m @ 60 m· OR

9 m @ 30 m; OR

5.2 m @ 10 m

9 m @ 30 m; OR

5.2 m @ 10 m

7 m @ 30 m: OR

5.2 m @ 10 m

5.2 m @ 10 m

7 m @ 30 m; OR

5.2 m @ 10 m

4 m @ 7 m

4 m @ 7 m

4 m @ 7 m

4 m @ 7 m

4 m @ 7m

4 m @ 7 m

No Barrier Required

7.8 m @ 10 m

West of Phase 2B 1

of Processing and

Implementation

Timing

Existing Berm

Existing Berm

Existing Ber

Existing Bern

Existing Berm

Prior to Phase 1A

Extraction

Top-of-Berm Heigh

1-8 498 150

5 | 495 | 200 |

second bench occurs within Phase 1A, 1B, 4A, and 4B.

Extraction of Sand and Gravel ("Pit Operations"):

R01, R28, R29

quarry material in Bench 1 or 2 of Phase 1A.

Plant Location (Phase) | Plant Elevation

Extraction of Consolidated Material ("Quarry Operations")

receptors in Table 3.

Phase 4A/4B boundary, and within 180 m of the east licence boundary

g.c. Conducting a detailed investigation including installing more observation wells or surface water monitoring locations.

h. Semi-annual water quality sampling for pH. Conductivity. Alkalinity. Bicarbonate. Chloride Metals (Antimony, Arsenic, Barium, Bervllium, Boron, Cadmium, Calcium, Cobalt, Coppe Lead, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium Sodium, Silver, Strontium, Sulfur, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium Vanadium, Zinc), Nitrate/Nitrite, and Sulphate shall be conducted at the following groundwater monitors: OW3B, OW3C, OW4A, OW4B, OW4C, OW5A, OW5B, OW OW6A, OW7A, OW7C, OW8A, OW9B, OW10B, OW12A, OW12B, OW13A, OW13C OW14A, OW14C, OW16C, OW18A, OW18C, OW19A, OW19C, OW20C, OW21A, OW21C, OW22A. OW22C. OW23C. OW23A. OW24A. OW24C. OW26A. OW26C. OW27C. OW28A OW28C, OW29A, OW29C, OW30C and the four Injection Wells, as shown on the Monitoring Locations schematic (Drawing 1 of 5). Semi-annual water quality sampling for pH, Conductivity, Alkalinity, Bicarbonate, Chloride Metals (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Cobalt, Coppel Lead, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium Sodium, Silver, Strontium, Sulfur, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium

Vanadium, Zinc), Nitrate/Nitrite, and Sulphate shall be conducted subject to landowne

permission/access being granted at the following private water wells: DW1, DW2, DW3, DW4 and DW5, as shown on the Monitoring Locations schematic (Drawing 1 of 5). Annual water quality sampling for Petroleum Hydrocarbons Fractions F1 to F4, Benzene, Toluene. Ethylbenzene and Xylenes, and Oil and Grease shall be conducted at the following groundwater monitors: OW5A, OW6A, OW7A, OW8A, OW9B, OW10B, OW12A, OW14C OW16C, OW18A, OW20C, and OW21C, as shown on the Monitoring Locations schematic (Drawing 1 of 5).

k. Semi annual water quality sampling for Dissolved Oxygen, Conductivity, pH, and Temperature shall be conducted at the following surface water monitors: North Pond, South Pond, SW1, SW2, SW4, SW5, SW6, SW13, SW14, and SW18, as shown on the Monitoring Locations schematic (Drawing 1 of 5). Semi annual water quality sampling for Dissolved Oxygen, Conductivity, pH, and Temperature shall be conducted subject to landowner permission/access being granted at the following surface water monitors: NAT-18 and NAT-19, as shown on the Monitoring Locations schematic (Drawing 1 of 5).

m. Considering the historical and monitoring data collected within 3 years of extraction extending below the groundwater table, baseline groundwater quality conditions are to be established for OW19, OW23, OW24, OW27, and the four injection wells, as shown on the Monitoring Locations schematic (Drawing 1 of 5). If water quality results exceed the Ontario Drinking Water Quality Standards (ODWQS), a detailed investigation will be undertaken by a Qualified Hydrogeologist in regards to the potential impacts to local groundwater system. This investigation will include a review of current quarry activities, a review of the on-site groundwater quality, and a review of adjacent property uses. If the ODWQS exceed an ODWQS Maximum Allowable Concentration (MAC) the following actions are to be taken: m a A second water sample will be obtained and analyzed

m.b. On confirmation that the water quality exceeds the ODWQS MAC, the MNR and the Township of Melancton will be notified. m.c. A qualified professional will be retained to investigate, make recommendations for changes in the operation and report back to the MNR and the Township of

n. If a water well complaint is received by the licensee, the following actions shall be taken by

n.a. Notify the MNR and MECP

n.b. Ensure a Certified Well Inspector (i.e. licensed water well technician) and/or qualified hydrogeologist visits the site within 24 hours of receiving the complaint to investigate. The Certified Well Inspector and/or hydrogeologist shall complete a we inspection including a review of the pump, well condition, pump depth and condition,

n.c. Temporary water supply shall be provided by the licensee to the well owner within 48 hours of receiving the complaint and thereafter until such time as the cause of the n.d. If the well complaint cannot be definitively determined to not be a result of the pit/quarry operations after the initial site visit, a hydrogeologist shall review the water well inspection report and supporting information, water level data and on-going

The hydrogeologist shall prepare an opinion letter to be provided to the MNR MECP, and the complainant as to the likelihood that the well complaint is related to n.e. If the well complaint is considered to be a result of the pit/quarry operations the following water supply restoration program shall be initiated at the expense of the licensee to the satisfaction of MECP:

operations at the quarry/pit to provide an assessment of the cause of the complain

n.e.a. Step 1: Well system rehabilitation: this includes the replacement or lowering

of pumps, flushing the pump lines, well deepening, etc. n.e.b. Step 2: Well Replacements: if system rehabilitation is not an option, the well shall be replaced with a new well further from the pit/quarry. n.e.c. Step 3: Water treatment considerations: appropriate water treatment shall be incorporated into any restored water supply.

o. The 2:1 backfilled side slopes on quarry benches 1 and 3, as shown on the Rehabilitation Plan (Drawing 4 of 5), shall be constructed as a composite berm structure that shall include a sufficiently impermeable (i.e. clay-like) 'core' with a well compacted cohesionless granula shell or outer material comprising of the majority of the side slope backfill. As extraction of the quarry progresses, the 2:1 backfilled side slopes shall be constructed, as soon as possible, to follow behind the working face along the quarry limit of extraction to provide a water management barrier during operations. p. Four injection wells shall be constructed along the east property limit behind the water control barrier prior to construction of the acoustic berm in the location as shown on the

Operational Plan plan view (Drawing 2 of 5). Two injection wells shall be drilled into the Guelph formation and two injections wells shall be drilled into the Gasport formation. The Guelph formation and Gasport formation injection wells shall have a minimum total capacit of 5 and 7 L/s, respectively. q. The buried tile drain shall be constructed prior to extraction commencing in Phase 2 of extraction in the location as shown on the Operational Plan plan view (Drawing 2 of 5). The buried tile drain shall be constructed of perforated tile drain wrapped in filter sock behind the water control barriers along the western face of extraction at an elevation of 488 m asl. The

buried tile drain shall be constructed in three segments totalling 1,105 m (minimum) with the north and central segments draining to the injection wells and the south segment draining to the central infiltration pond or injection wells. Water from the buried tile drain shall be conveyed to the injection wells and central infiltration pond through a passive drainage system and/or pumped. Inspection ports and control valves shall be incorporated into the buried tile drain and injection well systems so groundwater levels can be monitored, the systems can be inspected and maintained, and for operational flexibility so the water management system can be optimized during operations. The south segment of the buried drain shall be

designed to drain to both the central infiltration pond and injection wells to allow additional

non-contact water to drain to the injection wells should it be advantageous to do so from a operations and mitigation perspective. s. The infiltration trenches shall be constructed at a 2:1 slope (max). The location of the north infiltration trenches is shown on the Operation Plan (Drawing 2 of 5). t. The infiltration ponds shall be constructed at 2:1 slopes (max) where the pond walls will be formed by excavating the existing sand and gravel (e.g. permeable materials) and where the impermeable liner will be incorporated except for the north and west banks of the central infiltration pond which shall be constructed with 3:1 slopes (max) with an impermeable line The locations of the central and south infiltration ponds are shown on the Operation Plan

u. The infiltration trench and infiltration pond side slopes shall be protected from erosion with suitable erosion protection measures (e.g. topsoil, hydroseed and erosion control blanket, rip rap, etc.) approved by a geotechnical engineer at the time of trench and pond construction. v. The geotechnical suitability of the on-site till soils shall be confirmed by a geotechnical

engineer prior to the construction of the 2:1 side sloping on guarry bench 1 and 3 and for the impermeable liner for the infiltration ponds. The north and west banks of the central and south infiltration ponds shall be constructed with an impermeable liner. If there is not sufficient on-site till soils suitable for this construction, suitable off-site soil shall be imported.

w. In Phase Two, 2.0 m of the Ancaster/Niagara Formation is to remain above the Gasport Formation as shown on the maximum depth of extraction on the operational plan. The effects of groundwater uplift are to be confirmed in Phase Two when final depths of extraction are reached by a Professional Engineer utilizing recent water level monitoring data. To support the confirmation of design, a groundwater model update will be undertaken utilizing new water level monitoring data, measured flows and related hydrogeologic insight from the operations. Based on the updated uplift assessment, if groundwater uplift is anticipated the thickness of the Ancaster be increased based on the assessment or pressure relief sumps may need to be constructed within the extraction area. The assessment of groundwater uplift shall be provided to MNR

and if required a site plan amendment will be submitted to MNR to implement the recommendations of the assessment x. In Phase Four, uplift potential within the Cabot Head Formation is not anticipated. When extraction depths are within 2.0 m of the maximum depth of extraction on the operational plan, the effects of groundwater uplift are to be confirmed by a Professional Engineer utilizing recent water level monitoring data. However, if fractures or bulging due to groundwater uplift are observed depressurization sumps or drainage galleries should be

constructed within the extraction area. y. Water from the quarry sump or clean water pond shall be discharged to the north infiltration trenches central infiltration pond south infiltration pond and created wetland as necessary to maintain dry operating conditions in the Quarry and the hydrologic function of the create wetland during extraction. No process water will be discharged from the Quarry directly prior to being treated. There shall be no direct discharge of water off-site. There shall be no

discharge of contact water into the injection wells. z. The sump discharge being directed to the infiltration trench and the north and south infiltration ponds will be tested monthly for Total Suspended Solids, ammonia, pH and Oil and Grease. In the event that the water quality exceeds Provincial Water Quality Objectives, the following actions are to be taken:

z.a. A second water sample will be obtained and analyzed. z.b. On confirmation that the water quality exceeds PWQO the MNR and the Township of Melancton will be notified.

z.c. Monitoring frequency would be increased to weekly for a month, and then a qualified professional is to re-evaluate frequency.

z.d. A qualified professional will be retained to investigate, make recommendations fo changes in the operation and report back to the MNR and the Township of Melancton once the water quality has been improved. aa. During Phase 4 of extraction, a limited portion of the west face of bench 3 as shown on the Rehabilitation Plan plan view (Drawing 4 of 5), shall be left open (no water control barrier) to allow long-term drainage of the quarry lake into the Gasport aquifer. This portion of the quarry face shall be left open as part of the final rehabilitated landform.

ab. As part of the final rehabilitation of the site, a 365 m portion of the overburden water control barrier along the east face as shown on the Rehabilitation Plan plan view (Drawing 4 of 5) shall be removed to allow lateral seepage into the shallow overburden system east of the

ac. As part of final rehabilitation of the site, the north segment of the buried tile drain shall be extended through the west face water control barrier to discharge into the quarry lake. ad. As part of final rehabilitation of the site, the buried tile drain, except for the north segment.

shall be decommissioned. ae. As part of final rehabilitation of the site, the injection wells shall be decommissioned i accordance with O.Reg.903.

af. As part of final rehabilitation of the site, the infiltration features (north and south infiltration trenches and central and south infiltration ponds) shall be decommissioned ag. The licensee shall operate in accordance with the Environmental Compliance Approval ECA) and Permit to Take Water (PTTW) requirements

ah. The operation and rehabilitation of this site will not impact a Wellhead Protection Area or a Surface Water Intake Protection Zone and therefore, source water protection policies do not apply for this licence.

Site Plan Acronyms

1. ARA - Aggregate Resources Act 2. MASL - Metres Above Sea Level 3. MNR - Ministry of Natural Resources 4. MCM - Ministry of Citizenship and Multiculturalism 5. MGCS - Ministry of Government and Consumer Services

6. MECP - Ministry of Environment, Conservation and Parks 7. PTTW - Permit to Take Water 8. ECA - Environmental Compliance Approval 9. MAC - Maximum Allowable Concentration

10. PWQO - Provincial Water Quality Objectives 11. CEA - Community Engagement Agreement

12. NDACT - North Dufferin Agriculture and Community Task Force

Site Plan Amendments

Site Plan Revisions (Pre-Licencing) February 2025 Add a note indicating the frequency and timing of blasts Add an additional fencing note regarding the woodlands within the licence and update all the July 2025 archaeological and water resources recommendations in Sections O.3 and O.9. Add note A.

113 COLLIER STREET, BARRIE, ON, L4M 1H2 | P: 705.728.0045 | WWW.MHBCPLAN.COM MNR Approval Stamp MHBC Stamp

Christopher Poole Is authorized by the Ministry of Natural Resources pursuant to Subsection 0.2(3)(f) of Ontario Regulation 244/97 to prepare and certify site plans.

Strada Pit & Quarry 437159 4th Line, Melancthon, Ontario, LON 1S9

MNR Licence Reference No. Applicant's Signature 626676 Plan Scale:

Drawing No.

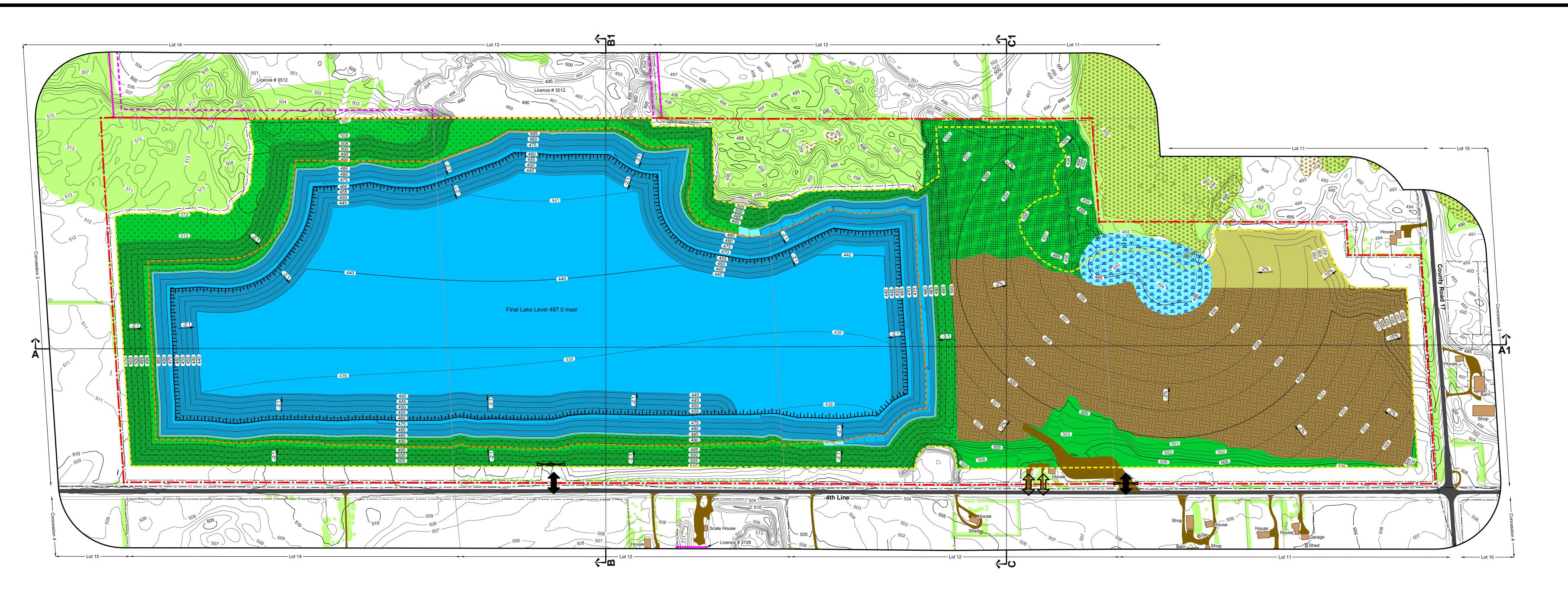
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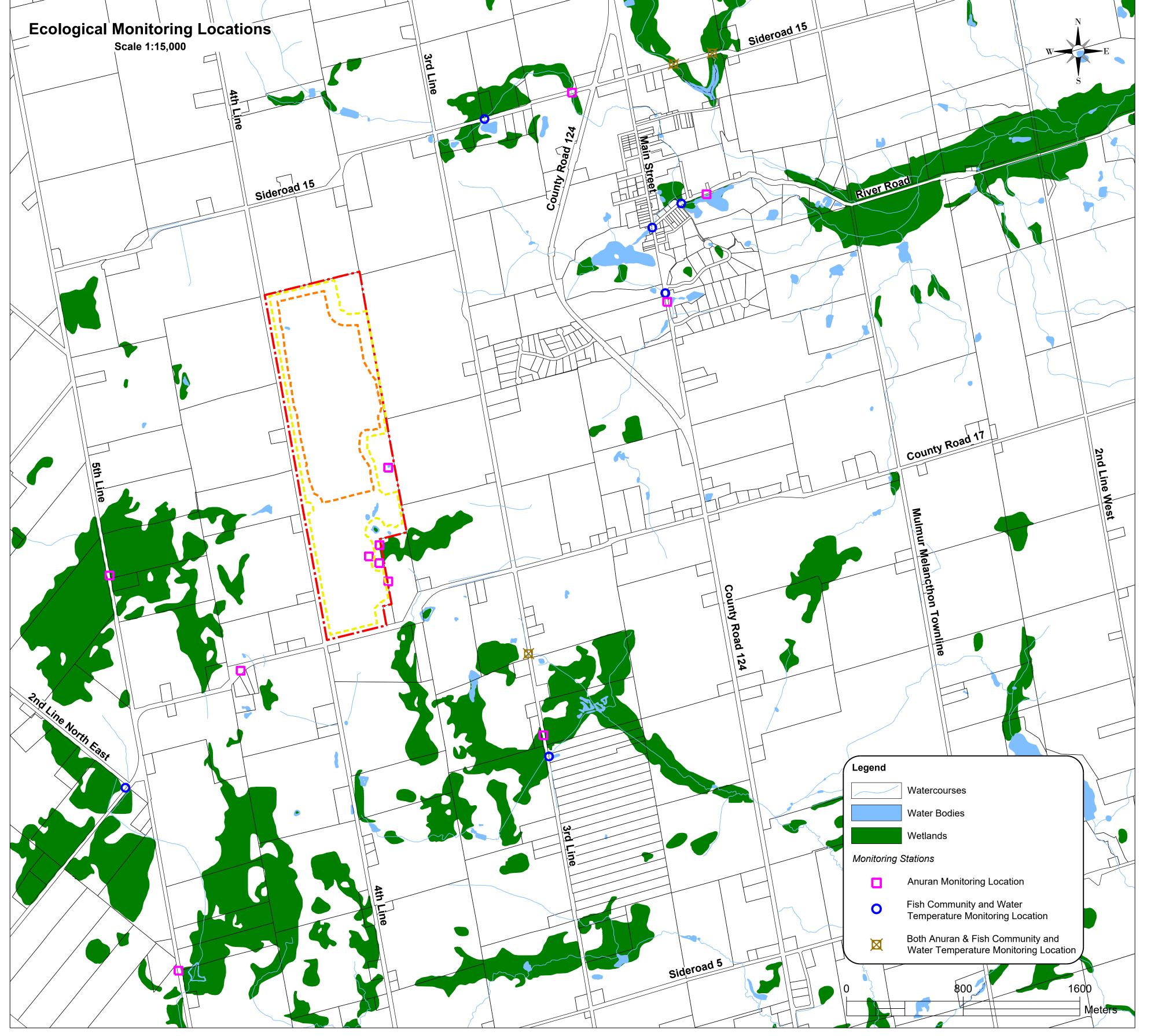
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Applicant

Operational Notes

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PROGRESSIVE REHABILITATION

- A. General Area calculations
 - 1.1. Licence Boundary
 - 123.7 ha 1.2. Pit Limit of Extraction
 - 1.3. Quarry Limit of Extraction 65.7 ha
- 2. The maximum annual tonnage is 2,000,000 tonnes.
- 3. The maximum predicted water table within the limits of extraction varies between 483.0 to 500.0 masl and is shown in each cross section on drawing 5 of 5.
- 1. As excavation reaches the limit of extraction or maximum depth, progressive rehabilitation shall commence.

3. Each phase of extraction shall commence progressive rehabilitation prior

- 2. Progressive rehabilitation shall follow the general direction and sequence of extraction identified on drawing 2 of 5 and described in the notes on
- to proceeding to the next phase of extraction. C. Slopes and Grading
- Progressive rehabilitation for the pit shall consist of backfilling the pit floor and side slopes to establish the grades, slopes and elevations depicted on

 D. Drainage the plan view of this drawing. Side slopes may also be established for the
- pit using the cut and fill rehabilitation technique. 2. Progressive rehabilitation for the quarry shall consist of backfilling the E. Agricultural Rehabilitation excavation face from lift 1 to the top of bedrock to establish a 2:1 side slope. The excavation face for lift 2 shall remain vertical (see Section N Variations from Control and Operation Standards on drawing 3 of 5). The excavation face for lift 3 shall be backfilled from the floor of lift 3 to the bottom of lift 2 to establish a 2:1 side slope. However, the excavation face for lift 3 along the west boundary of Phase 4B shall remain vertical (see

Section N Variations from Control and Operation Standards on drawing 3

- 3. Access ramps shall remain as part of the final rehabilitation land form. Ramps shall not be steeper than a 10:1 (horizontal : vertical) slope.
- 4. Excess soil, as defined in Ontario Regulation 244/97 may be imported to this site to facilitate the following rehabilitation:
- Establishing final grades, slopes and elevations depicted on the plan view of this drawing.
- 4.2. Top dressing to establish vegetation.

5. Liquid soil, as defined in Ontario Regulation 406/19 under the

- Environmental Protection Act, is not authorized for importation to the site. 6. The quality of excess soil imported to the site for final placement must be equivalent to or more stringent than the applicable excess soil quality standards as determined in accordance with Ontario Regulation 244/97 as amended from time to time and must be consistent with the site conditions and the end use identified in the approved rehabilitation plan.
- Where a qualified person is retained or required to be retained in accordance with Ontario Regulation 244/97, the quality, storage, and final placement of excess soils shall be done according to the advice of the qualified person.

8. Excess soil imported to facilitate rehabilitation as described on this site

9. The cumulative total amount of excess soil that may be imported to this

under the Aggregate Resources Act, as amended from time to time.

site for rehabilitation purposes is 7,100,000 m³.

Rehabilitation Sequence schematic on this drawing.

plan shall be undertaken in accordance with Ontario Regulation 244/97

- 1. The final surface drainage will follow the rehabilitation contours and directional arrows shown on the plan view of this drawing.
- 1. Within the limit of extraction, 24.2 hectares shall be returned to an agricultural condition in accordance with the Pit Floor Agricultural
- 2. The Agricultural technical recommendations in note O.1 on drawing 3 of 5 shall be implemented during progressive and final rehabilitation to restore 24.2 hectares of the extraction area to an agricultural condition.

FINAL REHABILITATION

- E. General 1. All equipment shall be removed from the site.
 - 2. The scale house / office and scale on Lot 13, Concession 3 shall be
 - 3. The scale house / office and scale on Lot 12, Concession 3 may remain.
 - 4. The farmhouse on Lot 12, Concession 3 may remain. 5. Aside from the buildings and structures mentioned in notes E.2 to E.4
 - above, all other buildings, structures and haul roads shall be removed. 6. The anticipated final lake level is 487.0 masl.
 - 7. The anticipated final end-use will be agriculture with naturalized open space consisting of a native meadow, side slopes, a woodland, littoral zones, a wetland and a lake.



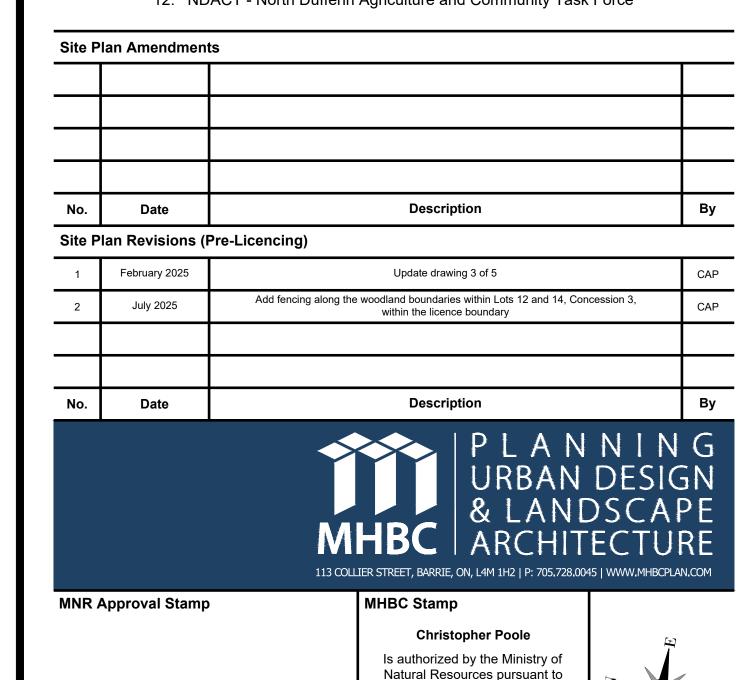
Legal Description

Part of West half of Lot 11, Concession 3

West Half of Lots 12, 13 and 14, Concession 3 (former geographic Township of Melancthon) Township of Melancthon, County of Dufferin

Site Plan Acronyms

- 1. ARA Aggregate Resources Act 2. MASL - Metres Above Sea Level
- 3. MNR Ministry of Natural Resources
- 4. MCM Ministry of Citizenship and Multiculturalism MGCS - Ministry of Government and Consumer Services MECP - Ministry of Environment, Conservation and Parks
- . PTTW Permit to Take Water
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- 10. PWQO Provincial Water Quality Objectives
- 11. CEA Community Engagement Agreement12. NDACT North Dufferin Agriculture and Community Task Force



Subsection 0.2(3)(f) of Ontario

Regulation 244/97 to prepare

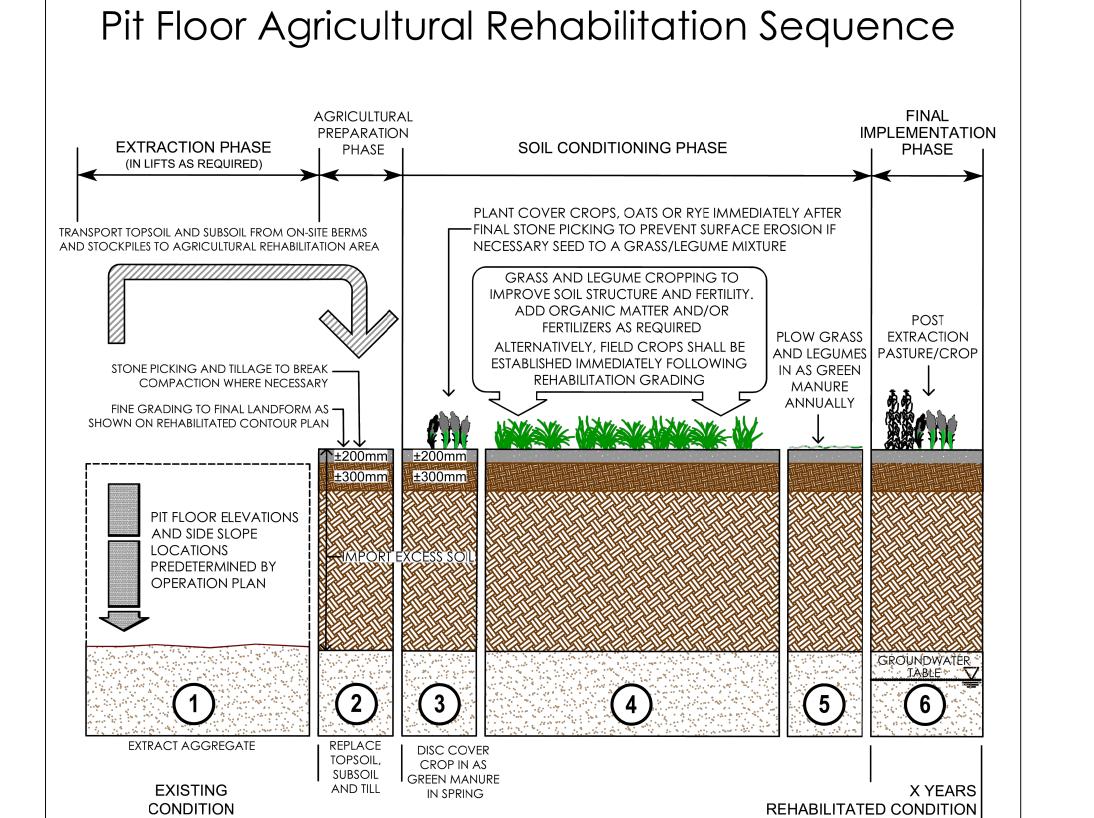
and certify site plans.

Applicant

Strada Pit & Quarry 437159 4th Line, Melancthon, Ontario, L0N 1S9

MNR Licence Reference No. 626676 Plan Scale: 1:3000 (Arch E)

Rehabilitation Plan Drawing No. 4 of 5 File Path N:\Brian\Y349I Strada- Melancthon KW File\Drawings\Site Plan\CAD\Y349I - Site Plan.dwg



TILLAGE AND STONE PICKING MAY BE REPEATED AS NECESSAR TO ENSURE PROPER SOIL PERMEABILITY AND AERATION _

