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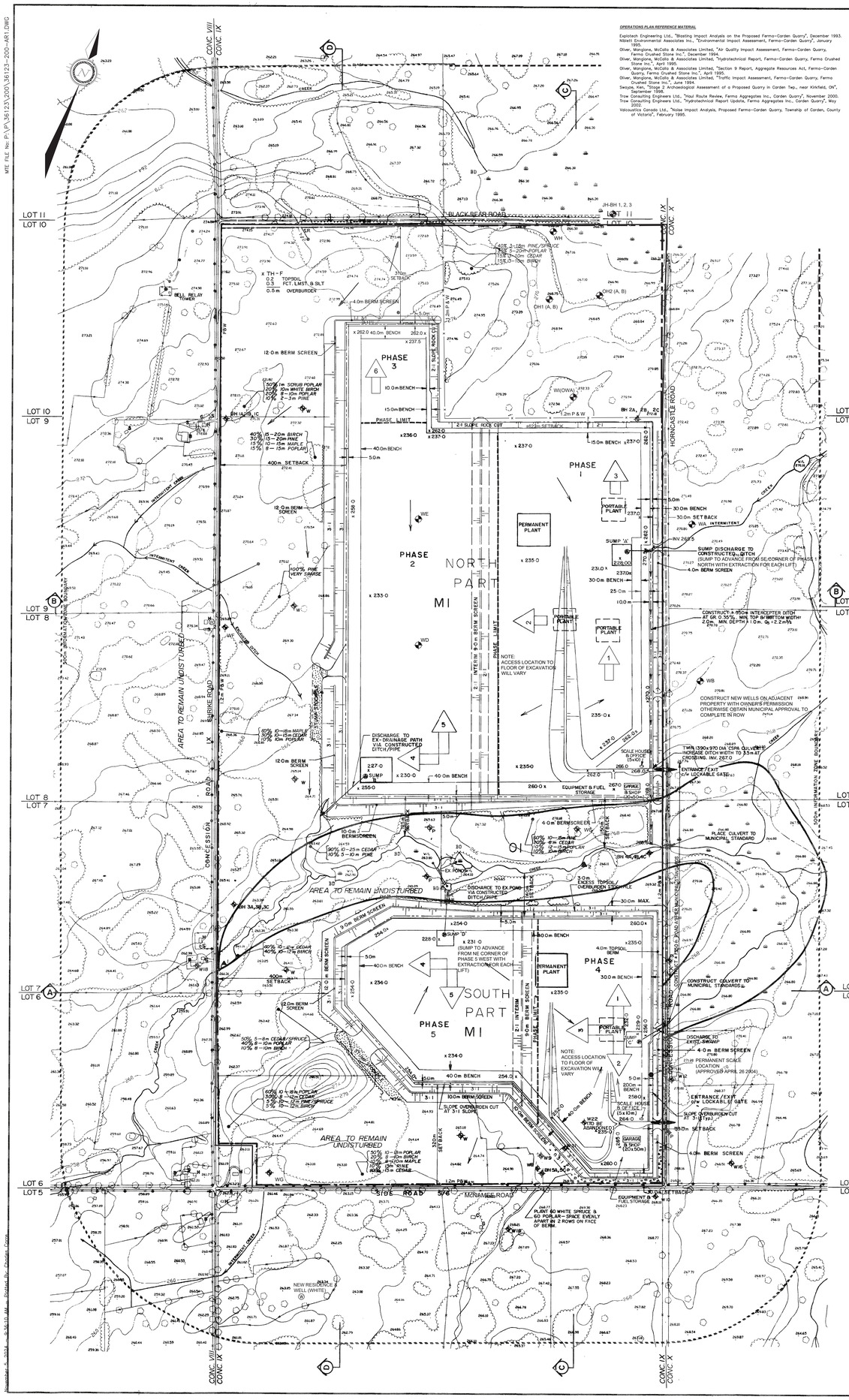


OPERATIONS PLAN REFERENCE MATERIAL

Explotech Engineering Ltd., "Blasting Impact Analysis on the Proposed Ferma-Carden Quarry", December 1993.
Niblett Environmental Associates Inc., "Environmental Impact Assessment, Ferma-Carden Quarry", January 1995.
Oliver, Mangione, McCalla & Associates Limited, "Air Quality Impact Assessment, Ferma-Carden Quarry, Ferma Crushed Stone Inc.", December 1995.
Oliver, Mangione, McCalla & Associates Limited, "Hydrotechnical Report, Ferma-Carden Quarry, Ferma Crushed Stone Inc.", April 1995.
Oliver, Mangione, McCalla & Associates Limited, "Section 9 Report, Aggregate Resources Act, Ferma-Carden Quarry, Ferma Crushed Stone Inc.", April 1995.
Oliver, Mangione, McCalla & Associates Limited, "Traffic Impact Assessment, Ferma-Carden Quarry, Ferma Crushed Stone Inc.", June 1994.
Swayze, Ken, "Stage 2 Archaeological Assessment of a Proposed Quarry in Carden Twp., near Kirkfield, ON", October 1993.
Trow Consulting Engineers Ltd., "Haul Route Review, Ferma Aggregates Inc., Carden Quarry", November 2000.
Trow Consulting Engineers Ltd., "Hydrotechnical Report Update, Ferma Aggregates Inc., Carden Quarry", May 2003.
Valcoustics Canada Ltd., "Noise Impact Analysis, Proposed Ferma-Carden Quarry, Township of Carden, County of Victoria", February 1995.

SITE PLAN CONDITIONS

LOGGERHEAD SHRIKE

Condition 1 - Quarry Development and Operations
i) The Licensee shall establish a 400 metre loggerhead shrike setback zone from an existing or future loggerhead shrike nest (occupied or unoccupied) within or adjacent to the Licensed property. That portion of the setback zone location falling within the Licensed area shall be demarcated by brightly painted and securely anchored 1.2 metre high metal 'T' bars placed 400 metres from the nest at 15 to 30 metre intervals. No activities shall occur within any shrike setback zone unless otherwise approved by MNR.
ii) No blasting shall be undertaken between April 30th and July 15th (shrike nesting period). Should the monitoring program demonstrate that no nesting is occurring in early June, then blasting may commence after June 15th for that year.
iii) The portable Crushing Plant is to be located behind the working face. The working face is to advance towards any nesting location setback from the furthest point of the extraction limit.
iv) Hydraulic drills with dust bags shall be used for all drilling.

Condition 2 - Shrike Monitoring
i) The Licensee shall conduct monitoring of shrike nesting on the whole of the Licensed property annually and any new nesting locations to be reported to MNR immediately, and a final written report with the findings to the Ministry of Natural Resources by September 30, following the preceding spring monitoring period.
ii) The Licensee shall assess annual productivity of nesting loggerhead shrikes by monitoring nest site(s), number of eggs, number of young hatched, number of young fledglings and success of fledglings.
iii) Shrike monitoring shall be carried out on behalf of the Licensee by the Eastern Loggerhead Shrike Recovery Team or other organization approved by MNR.
iv) The Licensee shall restrict access within the Licensed property within the shrike setback zone except for researchers, and those individuals undertaking the monitoring on behalf of the Licensee, from April 15th to July 30th.

ARCHAEOLOGY

Condition 1
In the event that buried cultural remains are encountered during excavation activities anywhere on the property, the Archaeology and Heritage Planning Unit of the Ministry of Culture, Tourism and Recreation and/or the Cemeteries Branch of Consumer and Commercial Relations shall be contacted immediately.

Condition 2
A Stage 2 Archaeological Assessment shall be undertaken on any subsequent Phase(s) of the quarry development and a Letter of Clearance obtained from the Ministry of Citizenship, Culture, and Recreation prior to the advancement of any quarry activities into the subsequent Phase(s) of development.

NOISE

Condition 1 - Rock Drill Specifications
The rock drill will be an Ingersoll Rand DM 30 or acoustical equivalent having a maximum south emission level not exceeding 85.3 dBA at 15 metres distance.

Condition 2 - Permanent Plant
Building design for housing noisy pieces of equipment within the permanent processing plant are to be reviewed and approved by a qualified acoustical engineer to ensure compliance with applicable noise guidelines prior to construction.

Condition 3 - Implementation
Prior to the commencement of quarrying, all noise control measures must be fully implemented for that particular quarrying location.

Condition 4 - Other
The working face is to advance towards the north or south in an overall westerly direction depending on loggerhead shrike nesting location(s).

Until adequate room is available to accommodate a permanent plant on the floor of the final lift, portable processing facilities are to be located within 30 to 50 m of the westerly working face with interim 9.0 m berms constructed to provide additional sound attenuation.

Perimeter 10.0 m to 12.0 m berm screens are to be constructed upon removal of the 9.0 m interim berms and employment of the permanent plant.

Aggregate material loading for off-site delivery is to occur in plant area and is to take advantage of screening from stockpiles and buildings

BLASTING

Condition 1 - Notification
All residents within 500 metres of the boundaries of the licensed area must be given adequate notice prior to blasting.

Condition 2 - Monitoring
All blasts must be monitored.

Condition 3 - Peak Pressure
Blasts shall not exceed the peak pressure level limit for concussion of 128 dB and the peak particle velocity for vibration of 1.25 cm/s.

Condition 4 - Records
The information outlined in the above Conditions 1, 2, and 3 for Blasting must be kept by the operator and made available to the Ministries of the Environment and Natural Resources upon request.

Condition 5 - Other
A pre-blast survey shall be conducted on surrounding residences and buildings.

Non electric detonating devices shall be used in vicinity of Bell relay tower (northwest quadrant).

SPILLS

A Spill Control Plan following the guidelines established by the Aggregate Producers Association of Ontario will be prepared prior to commencement of quarry operations.

WASTE DISPOSAL

Stumps, branches, brush, roots etc. must be transported and disposed of in accordance with Ministry of Environment Regulations, or reused as product".

DEWATERING

Condition 1 - Water Taking
The Permit to Take Water applies to dewatering the first lift of Phase 1, North Part, Ferma-Carden Quarry which is defined as a limestone excavation limited to a depth elevation of 255.0 masl over the east half of Lots 8 and 9, Concession IX, Carden Township. Subsequent lifts or Phases, or greater pumping volumes, will require a new Permit to Take Water.

Condition 2A - Monitoring Wells
Monitoring wells containing tri-level piezometers at the following locations are to be constructed one year prior to commencing dewatering: WA (mid north part of east limit of Phase 1), WB (mid south part of east limit of Phase 1), WC (mid south limit of Phase 1), WD (mid south part of west limit of Phase 1), WE (mid north part of west limit of Phase 1), WF (opposite side of road from domestic well W2), WG (southwest corner of site), WH (mid north limit of E1/2 Lot 10, Con. 9), and W (50 metres north of Phase 1 north limit). Subject to the property owner's consent, monitoring wells WA and WB are to be located 50 to 100 metres east of Horncastle Road. Shallow overburden, upper and lower bedrock aquifer piezometers are to have base elevations at approximately 260 - 264 masl, 250 - 255 masl and 230 masl, respectively.

Each tri-level monitoring well will have three 50 mm diameter piezometers each having a 1.0 metre long slotted screen installed within the water bearing zone of respective aquifers. The annulus surrounding the screens and casings are to be backfilled with silica sand with upper and lower aquifers isolated by a 3.0 metre thick bentonite seal placed using a tremie pipe or by pumping. Surface protection is also required per Regulation 901. In addition to the above, well BH2A will be replaced one year prior to dewatering.

With permission of the landowner, the Operator will monitor water levels in supply wells and dug-outs within a 500 metre circumference of the Licence boundary. Monitoring will also be carried out at those wells and dug-outs falling within a 500 to 1,500 metre circumference of the Licence Boundary subject to the request of the landowner.

Condition 2B - Groundwater and Dug-Out Water Level Measurements
On a monthly basis commencing one year prior to dewatering, static water levels are to be recorded within the above monitors, all domestic wells, dug-outs and all existing monitoring locations which include: BH 1A, 1B, 1C; BH 2B, 2C; BH 3A, 3B, 3C; BH 4A, 4B, 4C; BH 5A, 5C; MB; W6; W11; W21; W22; OW4; OW1A, 1B; OH2A, 2B; and, boreholes JH-BH1 (BH02-1-1), JH-BH2 (BH02-1-10) and JH-BH3 (BH02-1-13). All piezometers or monitoring wells destroyed by quarry operations are to be replaced. Monitoring wells proposed in Condition 2A will be subject to the same frequency of monitoring.

In addition, twice monthly measurements of static water levels during March, April, August, September and October shall be measured at: OW4; W6; BH 2A, OH1A, 1B; OH2A, 2B; and, boreholes JH-BH1 (BH02-1-1), JH-BH2 (BH02-1-10) and JH-BH3 (BH02-1-13).

Condition 2C - Water Quality Monitoring - Domestic Wells
Water quality monitoring will be carried out on a quarterly basis one year prior to dewatering in order to establish baseline conditions one year prior to dewatering and then bi-annually thereafter. The monitoring results shall be provided to the property owner and the City of Kawartha Lakes.

Condition 3 - Monitoring and Reporting
Within 90 days following the first anniversary and annually thereafter of commencing dewatering activities, the Operator will submit a report to the Ministries of Environment and Natural Resources, and the Liaison Committee, summarizing for the previous year: static water level and water quality observations; daily pumping rates; water budget calculations; the extent of drawdown; anticipated pumping rates and corresponding drawdown within the next operating year; well logs of constructed wells; a sketch showing well locations, extent of excavation and equipotential contours of the upper and lower aquifer; water supply complaints received and steps taken to resolve same; recommended changes to monitoring frequency, monitoring locations and triggering criteria; contingency measures implemented; and, any out of the ordinary observations made.

Condition 4A - Trigger Mechanism and Contingency Measures - Domestic Wells
A drop in minimum static level at BH1A by 5.0 metres (to approximately 264.8 masl), and a corresponding drop of greater than 10.0 metres in static water level at proposed observation wells WD and/or WE, shall initiate contingency measures for water supply at domestic well W1
upon confirmation that W1 supply is inadequate.
A drop in minimum static water level at proposed monitoring well WF of 3.0 metres (to approximately 260.8 masl), and a corresponding drop in static level at proposed monitoring well WD and/or WE of greater than 10.0 metres, shall initiate contingency measures for water supply at domestic well W2 upon confirmation that W2 supply is inadequate.

The Operator will maintain a potable water supply source to surrounding wells adversely affected by dewatering operations. Contingency measures include, but are not limited to, the construction of a new well(s) within the upper bedrock aquifer at a location(s) unaffected by quarry dewatering and the delivery of water from the new well(s) by pressurized piped system to each affected residence. Dewatering mechanisms will be shut down falling the resolution of water supply problems caused by quarry dewatering.

Condition 4B - Trigger Mechanism and Contingency Measures - N.E. Wetland
A drop below the minimum monthly baseline static water level of 0.25 metres within the unconfined overburden aquifer measured at wetland piezometers OH1A, OH2A, JH-BH1, JH-BH2 and JH-BH3 and a corresponding drop of a greater amount at intermediate monitoring well locations, consistently in March, April, May, or August, September and October, shall initiate a detailed investigation as to the cause of the observed decline.

A drop below the minimum monthly baseline static water level of 0.5 metres within the unconfined overburden aquifer measured at wetland piezometers OH1A, OH2A, JH-BH1, JH-BH2 and JH-BH3 and a corresponding drop of a greater amount at intermediate monitoring wells, consistently in March, April, May, or August, September and October shall initiate the implementation of contingency measures to restore the observed decline in water levels.

The contingency measures to be implemented will vary depending on the cause of the observed decline and may include, but are not limited to, one or more of the following: 1) Diversion of dewatering activities to the northeast with re-introduction of some into the unconfined overburden aquifer or upper bedrock aquifer via re-injection wells, exfiltration trenches, or directly by ditching, whichever is most appropriate; 2) Grouting (sealing) fissures that are causing excessive draining; and, 3) Termination of active dewatering attributed to the cause of observed drawdown.

Condition 5 - Monitoring Wells - Trigger Mechanism and Contingency Measures - Cattle Water Supply
Cattle in range rely on several sources of water supply including dug-outs and wetland areas which surround the area to be Licensed.

The supply of surface and groundwater recharge to the various sources of livestock water supply may be vulnerable as a result of quarry dewatering activities.

Upon quarry extraction occurring within 1,000 metres of an adjacent source of livestock water supply, the Operator will undertake the following:
i) Establish, in consultation with the owner of the subject source of water supply, the location of new monitoring wells nearby the water source and at intermediate locations between the source and quarry activities if not already in place; and,
ii) Provide emergency contacts and details of temporary sources of water supply should the source be adversely affected by quarry dewatering.

Each monitoring well will consist of bi-level monitors completed in the upper bedrock aquifer and unconfined aquifer, if encountered.

Monthly measurements of static water levels at the above locations, shall occur commencing with establishing monitoring wells.

A drop below the minimum monthly baseline static water level of 0.25 metres measured at the water source monitoring well, and a corresponding drop of greater amount measured at the intermediate monitoring well, consistently over a one month period during the June to October period shall initiate a detailed investigation as to the cause of the observed decline.

A drop below the minimum monthly baseline static water level of 0.5 metres within the aquifer supporting the livestock water supply measured at the water source monitoring well, and a corresponding drop of greater amount measured at the intermediate monitoring well, consistently over a 12 month period shall initiate the implementation of contingency measures to restore the observed decline in water levels.

The contingency measures to be implemented will vary depending on the cause of the observed decline and may include, but are not limited to, one or more of the following: 1) Diversion of dewatering activities to the affected water source through re-introduction of some into the aquifer(s) via re-injection wells, exfiltration trenches, or by overland ditching or piping, whichever is most appropriate; 2) Grouting (sealing) fissures that are causing excessive draining of the aquifer supporting the water source; and, 3) Termination of active dewatering attributed to the cause of observed drawdown.

Condition 6 - Complaint Resolution
Should a complaint by an affected landowner with respect to loss of water in a well or cattle dugout remain unresolved by the Operator, the complaint will be settled by arbitration at the cost of the Operator. (Ultimately, an unresolved complaint could result in Licence suspension.) Interim potable water supply and storage will be provided by the Operator for loss of domestic water source, and similarly a water supply and storage suitable for livestock watering will be provided by the Operator until such time the complaint or dispute is resolved.

Condition 7 - Other
i) 72 hour detention of the 25 mm rainfall event shall be provided.
ii) Mobile fuel and chemical storage facilities are to be employed and located adjacent to the garage/shop area of respective parts. Storage units are to be located on concrete pads curbed to contain an equivalent volume of stored substance.
iii) Temporary erosion control measures such as rock check dams and siltation control fencing shall be constructed during stripping and berm construction and maintained until berms are stabilized with plantings.
iv) The refueling and maintenance of haulage vehicles is to occur off-site except in emergency situations.
v) Restoration of water supply per the Permit to Take Water applies to both surface and groundwater supplies.

DUST

i) Permanent plant location must be pre-approved by MNR.
ii) Dust control measures shall be in place during operations for crushing, screening, conveying, and stockpiling to maintain a moisture content (1.5%
iii) Bituminous Rd. and Inorganic Rd. surfaces are to be treated asphalt or surface treated within the first year of operation commencing.
iv) 1 l/m2 of water to be applied every 8 hours during dry weather on all travelled surfaces not treated with asphalt or surface treatment. A Permit to Take Water is required for amounts in excess of 50,000 L/day.
v) First 200 m of internal haul road will be surface treated should off-site dust levels become a nuisance downwind of any site access points.

HAUL ROUTE

Subject to a Haul Route Agreements with the City of Kawartha Lakes and the County of Simcoe.

SITE PLAN REDLINE REVISIONS

Revisions to the circulated Site Plans include:
i) Establishing a 310 metre buffer strip (or excavation setback) from the north Licence limit within the W1/2 Lot 10, Concession 9 (reducing Phase 3 from 29 ha to 10 ha).
ii) Adding 42.7 ha located within the E1/2 Lot 10, Concession 9 to the Licence for shrike habitat and wetland buffer area, for a total Licence area of approximately 427.2 ha.

SITE PLAN CONDITION CONFLICTS

All those Conditions shown on the circulated Site Plans that are in conflict with the proposed amended Conditions shall be deleted.

LIAISON COMMITTEE

The Licensee shall give notice to the City of Kawartha Lakes and all residents, businesses and organizations within 1,500 metres of the quarry property, together with all residents along the haul route within the City of Kawartha Lakes, of their opportunity to be members of the Citizens Liaison Committee. The Committee shall be composed of a Municipal representative and any and all persons receiving such notice who wish to be members of the Committee. The first meeting of the Citizens Liaison Committee shall be organized by the Licensee and shall take place within six months of the issuance of the quarry license and prior to commencement of site operations. The Citizens Liaison Committee shall develop its own rules and procedures, and meet as often as it sees fit however; in the event that the Citizens Liaison Committee requests a meeting with the Licensee, the Licensee shall be obligated to arrange a meeting between the Citizens Liaison Committee and the Licensee within a reasonable time period. The Licensee shall be responsible for providing a meeting place, at no cost to the Citizens Liaison Committee, for its meetings, and shall be responsible for providing, upon reasonable notice, and make available to the Committee a representative of the Licensee knowledgeable about current site operations and authorized to make decisions for each meeting of the Committee. The Licensee shall also provide the Committee with a contact person and phone numbers so that the Committee may contact the Licensee in the event of a complaint or emergency. At the request of the Chairperson of the Citizens Liaison Committee the Licensee shall, upon 48 hours notice, allow a representative or representatives of the Committee access to the quarry to inspect the quarry and quarry operations. The Committee shall have access to any and all studies, reports and other documents submitted by the Licensee to the Ministry of Natural Resources, Ministry of Environment and any other government oversight body, with respect to the quarry and quarry operations.

OTHER APPROVALS

Permanent and Portable Plants, Air (Blasting, Noise & Dust) – Environmental Protection Act
Sump and Sump Discharge, Wash Plant, Amendments to Permit to Take Water, Injection Wells – Water Resources Act
Stream Diversions And Crossings with over 5 km2 drainage area – Lakes And Rivers Improvement Act
Official Plan Amendment And Rezoning (Prior To Licensing), Building Permits – City of Kawartha Lakes
Site Plan Approval – Municipality of Kawartha Lakes
Discharge to surface water and stream work – Fisheries Act

OPERATING DETAILS

TONNAGE:
Initial extraction rate = ±250,000 tonnes/year, maximum extraction rate = 1,000,000 tonnes per year.

WATER TABLE:
Mining will occur below the existing water table.

SEQUENCE:
Phasing sequence is described schematically on the progressive rehabilitation and final rehabilitation plan. The sequence and limits of extraction may alter subject to material quality, market demand, dewatering impacts, loggerhead shrike nesting location(s), and various regulatory requirements.
1) Construct access road to Phase 1.
2) Within one year of commencing operations, erect and/or reinstate perimeter 1.2 m high post and wire fence around entire site, and construct entrance gate to north part. Existing access gates to south part to remain until operations relocate to the south part.
3) Block off cattle access to the water course within three years of commencing operations.
4) Commencing in the north part – Phase 1, clear overburden and construct 9.0 m interim berms (as mining advances north), at 0.35% grade having a minimum width of 2.0 m and depth of 1.0 m and outlet to swamp area. Install temporary siltation control measures, and stabilize disturbed areas outside of areas to be extracted with topsoil and seed.
5) Commencing in the north part – Phase 1, clear overburden and construct 9.0 m interim berm, 4.0 m east perimeter berm and south limit (north part) berm from east perimeter berm to interim berm, and stabilize with plantings.
6) Construct monitoring wells around perimeter of north part, and initiate monthly monitoring of groundwater levels and stream flows at all monitoring locations per Site Plan Conditions. Prepare for, and undertake, annual dewatering assessments and water quality monitoring requirements.
6) Conduct pre-blast survey of all surrounding structures within 500 m of license boundary, establish blast monitoring points, and monitor for first year of operation and adjust explosive charge per period as necessary to meet recommended blast vibration and overpressure. Contact the Ministry of Environment and Energy 24 hours prior to blasting.
7) Establish 5.0 m x 10 m scale house/office and install scales in southeast corner of Phase 1.
8) Erect 20 m x 50 m garage/shop and fuel storage facilities in southeast corner of Phase 1 when facilities are deemed necessary and subsequent to Phase 1 stripping and berm construction.
9) Phase 1, Stage 1 – commence extraction in sump "A" and proceed with extraction in a southerly direction. Construct temporary sump on floor of initial lift and install pumping system and outlet to constructed interceptor ditch to approved extraction depth elevation. Lower and move sump "A" dewatering system as mining proceeds and establish permanent sump as per recommended dimensions when final elevations are reached. Maintain berch width around perimeter of extraction.
10) Upon completing extraction in Stage 3, remove overburden from Phase 2 and 9.0 m interim berm screen. Establish 10 m to 12 m perimeter berm screens along the southerly and westerly limit of extraction within Phase 2 and stabilize with plantings. Construct all groundwater monitoring wells required for Phase 2 Clearance.
11) Phase 2, Stage 4 – extract first sinking cut working in a westerly direction and construct temporary sump at sump location "B". Install temporary sediment controls, construct and stabilize permanent sump outlet and install pumping system. Initiate subsequent lifts, and upon reaching final elevation, establish permanent sump per recommended dimensions.
12) Phase 2, Stage 5 – upon extracting Stage 4, extract the remainder of Phase 2 working towards the north and west.
13) Upon completing extraction in Stage 5, remove overburden from Phase 3 and establish 4.0 m and 12 m perimeter berm screens along remainder of the north part and stabilize with plantings.
14) Phase 3, Stage 6 – commence extraction working north.
15) Upon extracting Phase 3, complete final slopes around perimeter of extracted area by relocating berm and overburden material stockpiles to perimeter benches and stabilize with topsoil and hydroseed. Establish permanent drainage outfall adjacent to sump "B" and stabilize banks. All disturbed areas outside of areas to be flooded are to be reinstated with topsoil and hydroseed.
16) Remove all plant, machinery, stump stockpile, equipment, scrap, fuel storage facilities, and undertake a general site clean-up of any potential sources of contamination. Remove pump systems from the north part and allow to flood after slopes have stabilized. Final flood/lake elevation = ±264.5 m.
17) Construct main access gate to south part and close up all other remaining access points. Remove all remaining structures not required for mining activities.
18) Construct outlet ditch from sump "C". Install temporary siltation control measures, and stabilize disturbed areas outside of areas to be extracted with topsoil and seed.
19) Commencing in south part – Phase 4, clear overburden and construct 9.0 m interim berm, and 4.0 m and 10.0 m perimeter berm screens adjacent to road allowances; and stabilize with planting. Stockpile excess overburden along north perimeter of south part for use in future rehabilitation.
20) Construct groundwater monitoring wells required for Phase 4 Clearance around perimeter of south part, and continue monthly monitoring of groundwater levels and stream flows at all monitoring locations. Continue to undertake annual dewatering assessments and water quality monitoring requirements.
21) Conduct pre-blast survey of all new structures within 500 m of licensed boundary, establish blast monitoring points and monitor for first year of operation and adjust explosive charge per period as necessary to meet recommended blast vibration and overpressure.
22) Establish 5.0 m x 10 m scale house/office and install scales in southeast corner of Phase 4 and will be used for all Phases of operation.
23) Erect 20 m x 50 m garage/shop and fuel storage facilities in southeast corner of Phase 4 when facilities are deemed necessary and subsequent to Phase 4 stripping and berm construction.
24) Phase 4, Stage 1 – initiate first 10 m sinking cut at sump "C" and proceed with extraction in a northerly direction. Construct temporary sump on floor of first lift and install pumping system and outlet to constructed outfall. Initiate subsequent lifts (may be required) and, when space permits to approved extraction depth elevation. Lower dewatering system as mining proceeds and establish permanent sump as per recommended dimensions when final elevations are reached. Maintain berch width around perimeter of extraction.
25) Phase 4, Stage 2 – upon extraction of Stage 1 proceed from sump "C" in a southerly direction.
26) Phase 4, Stage 3 – upon extraction of Stage 2 proceed south/north working in an overall direction towards the west limit of Phase 4.
27) Establish permanent plant within Phase 4 during extraction of Stage 3. 300 m from east licence boundary when space permits.
28) Upon completing extraction in Stage 3, remove overburden from Phase 5 and 9.0 m interim berm screen. Establish 10 m to 12 m perimeter berm screens along the southerly and westerly limit of extraction, and 3.0 m to 9.0 m transition berm along the northerly limit of extraction within Phase 5 and stabilize with plantings.
29) Phase 5, Stage 4 – extract first sinking cut working in a westerly direction and construct temporary sump at sump location "D". Install temporary sediment controls, construct and stabilize permanent sump outlet and install pumping system. Initiate subsequent lifts, and upon reaching final elevation, establish permanent sump per recommended dimensions.
30) Phase 5, Stage 5 – upon extracting Stage 4, extract the remainder of Phase 5 working towards the south and west.
31) Upon extracting Phase 5, complete final slopes around perimeter of extract area by relocating berm and overburden/unmarketable material stockpiles to perimeter benches and stabilize with topsoil and hydroseed. Establish permanent drainage outfall adjacent to sump "D" and stabilize banks. All disturbed areas outside of areas to be flooded are to be reinstated with topsoil and hydroseed.
32) Remove all plant, machinery, stump stockpile, equipment, scrap, fuel storage facilities, and undertake a general site clean-up of any potential sources of contamination. Remove pump systems from the north part and allow to flood after slopes have stabilized. Final flood/lake elevation = ±264.0.

GENERAL NOTES

STRIPPING:
Topsoil is to be conserved by stripping, temporarily stockpiling, and stockpiled permanently by redistributing on top of berm screens constructed of stripped overburden material.

FINAL SLOPES:
Final slopes are to be established by relocating perimeter berm material and sloping at 3:1 (2:1 minimum) from original ground to the perimeter berch and stabilizing. Topsoil reserves stockpiled on berm screens must be stripped, temporarily stockpiled, then respplied to final slopes and prepared for hydroseeding with crownvetch. Undesirable aggregate material is to be stockpiled on perimeter benches and utilized to progressively establish final perimeter slopes.

PORTABLE PLANT:
Portable processing plant to be located on the floor of initial lift when sufficient space is available and similarly to the floor of lower lift when space permits. Maintain portable plant in a position of 30 to 50 m from west working face while in use.

STOCKPILES:
Aggregate stockpiles are to be located in vicinity of the processing plant and are to be limited to 15 m high above original surrounding grade elevation. Stockpiles are to be relocated onto the floor of respective lifts when space permits. Overburden and topsoil are to be stockpiled at berm locations.

SUMPS:
Sump size requirements (depth x length x width in metres): A = 3 x 64 x 60; B = 3 x 100 x 90; C = 3 x 50 x 45; D = 3 x 60 x 45. Pump intakes to be within sub-sumps two metres deep below the base of each sump.

PLANTINGS:
The face of perimeter berm screens within 100 m of side road 5/6 (McNamee Rd) and Concession Road IX (Shrike Rd) are to be planted with two staggered rows spaced 4.0 m apart consisting of one row of 0.5 m high white spruce and one row of 1.5 m high poplar planted 4.0 m on-centre, respectively. Disturbed areas, and overburden/topsoil berm screens are to be stabilized with 50 to 75 mm of topsoil and hydroseed consisting of grass mixtures. All existing vegetative screens and plantings are to be maintained and replaced as required. Final perimeter slopes are to be hydroseeded with a compatible mixture of crownvetch.

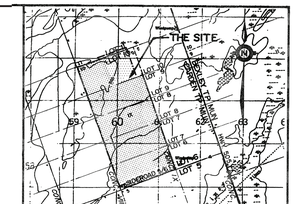
SCRAP:
All scrap material is to be removed from site.

EQUIPMENT:
Rock drill (Ingersoll Rand DM8 with down the hole hammer)
Front end loader (Caterpillar 988B or Michigan 275)
Portable primary crusher (Cedarapids 30 x 42 or equal)
Portable secondary crusher (Cedarapids 800 or equal)
Portable screening plant (Cedarapids 5 x 16, 3 deck or equal)
Portable conveyors
Mist sprayers for dust suppression
Processing equipment power supply (V12 GM Diesel & generator)
Stripping (Cat 235 plus tandem/triaxel dump trucks)
Rock haul truck rental (variable)
Permanent plant (to be determined)
Water tank truck for dust suppression

OPERATING HOURS:
No operations will occur on Sundays or legal holidays (Also, see Loggerhead Shrike Guidelines).

Drilling Monday to Friday, 7:00 to 17:00
Blasting Monday to Friday, at 13:00 on the hour (or at an alternate time as necessary to minimize disturbance).
Processing Monday to Friday, 6:00 to 19:00; and Saturday, 6:00 to 12:00
Off Site Haulage As per processing, excluding periods of half load restrictions.

OTHER LAND USES:
Open space and agricultural (cattle range). The south part will remain as grazing land/swamp/forest until extraction within the north part is completed.



NOTES

1. LICENSED AREA ±427.2 ha
2. AREA OF EXTRACTION — SOUTH PART ±58.3 ha; NORTH PART ±127.5 ha; TOTAL ±185.7 ha
3. AREA TO BE REHABILITATED — S. PART ±71.5 ha; N. PART ±163.2 ha; TOTAL ±234.5 ha
4. THE WATER TABLE ELEVATION RANGES BETWEEN 260 AND 272, AND BETWEEN 0 m AND 5 m BELOW THE GROUND SURFACE AS RECORDED BY FIELD SURVEY.
5. THIS PLAN WAS PREPARED USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS.
6. LOT, CONCESSION AND BOUNDARY LINES ON THIS PLAN ARE APPROXIMATE.
7. THIS IS NOT A LEGAL SURVEY DRAWING IN ACCORDANCE WITH THE PROVINCE OF ONTARIO SURVEYORS ACT 1987.

STREAM FLOW MONITORING POINT
TOP OF SLOPE
ANGLE OF SLOPE (HORIZ. TO VERT.) 3:1
BOTTOM OF SLOPE
EXISTING ELEVATION
2.0m CONTOUR INTERVAL
TREES / BUSH
DRAINAGE COURSE & FLOW DIRECTIONS
GENERAL SURFACE DRAINAGE DIRECTION
BEAVER DAM
SWAMP
POND AND WATER LEVEL
HYDRO / TELEPHONE POLES
BUILDINGS (HOUSE-BARN-SHED-GARAGE-COTTAGE) DIMENSIONS
MONITORING WELL/PIEZOMETER LOCATION & NUMBER
FENCE TYPE & HEIGHT (P & W-POST & WIRE; S.R.-SPLIT RAIL)
GATE
ASSUMED ROAD/INTERNAL ROAD
UNASSUMED ROAD
TRAIL
ENTRANCE / EXIT
LOT / CONCESSION LINE
ZONE BOUNDARY FOR OI
ZONING (AI - RURAL GENERAL; OI - OPEN SPACE; MI - INDUSTRIAL EXTRACTIVE)
PUMP(S) LOCATION
BOUNDARY OF LICENSED AREA
EXTRACTION LIMIT & SETBACK DISTANCE
OBSERVATION WELL
FINAL ELEVATION
500m INFORMATION AREA LIMIT LINE
CROSS SECTION/PROFILE NUMBER & LOCATION
PHASE LIMIT
DIRECTION OF EXTRACTION & SEQUENCE
STUMP STOCK PILE AREA
AVERAGE TREE SPECIES % COVERAGE & HEIGHT
LOCATION OF POSSIBLE FUTURE MONITORING WELLS (W) OR PIEZOMETERS (P)

THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES IN CONJUNCTION WITH AN APPLICATION FOR A CLASS A LICENCE UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.

FERMA AGGREGATES INC.
2666 RENA ROAD
MISSISSAUGA, ONTARIO
L4T 3C8
Telephone (905)677-9241 Fax (905) 677-9817

04/23/03
SIGNATURE OF LICENSEE DATE

No.	DESCRIPTION	DATE
9.		
8.		
7.		
6.		
5.		
4.		
3.		
2.		
1.	REVISED DEWATERING NOTES CONDITION 4A TO CORRECT ERROR IN STATIC WATER LEVEL AND TRIGGER VALUES. WELLS W1 AND W2 ADDED FOR EASE OF REFERENCE	MAY. 2024

MTE SITE PLAN AMENDMENTS

MTE STAMP: LICENSED PROFESSIONAL ENGINEER — 100084115 — C.E.J.E. GOURLEY — 100284166 — PROVINCE OF ONTARIO — FOR SITE PLAN AMENDMENTS DATED MAY.04

MTE Engineers, Scientists, Surveyors

AMENDMENTS	DATE APPROVED
Scale House on Phase 4	April 30/04
FOR SITE PLAN AMENDMENTS DATED MAY. 2024	NOV. 2024

SITE PLANS APPROVED BY MINISTRY OF NATURAL RESOURCES:
SIGNATURE DATE

REGISTERED PROFESSIONAL ENGINEER — L.S. GOURLEY — 100284166 — PROVINCE OF ONTARIO

THESE PLANS WERE DESIGNED TO ENSURE COMPLETE PRACTICALITY DURING THE OPERATIONS, PROGRESSIVE REHABILITATION AND FINAL REHABILITATION OF THE LICENSED PROPERTY

Trow Associates Inc.
Parent Company of
OLIVER MANGIONE McCALLA & ASSOCIATES LIMITED
561 BRYNE DRIVE UNIT D
BARRIE, ONTARIO L4N 9Y3
Tel: (705) 734-6222
Fax: (705) 734-6224

Ministry of Natural Resources
APPROVED
Under the *Aggregate Resources Act*
Date: November 7, 2024

MINISTRY OF NATURAL RESOURCES — QUARRY PLANS APPROVED UNDER THE AGGREGATE RESOURCES ACT — MANAGER, AGGREGATE RESOURCES OFFICER — DATE April 22/03

FERMA-CARDEN QUARRY

LOTS 6,7,8,9,& 10
CONCESSION IX
TOWNSHIP OF CARDEN
CITY OF KAWARTHA LAKES

OPERATIONAL PLAN

PAGE 2 OF 5			
PHOTO SCALE 1:16000	ROLL No. 87-4426	PHOTO Nos. 188 - 190	LINE No. 3	PHOTO DATE MAY 1987
MAP SCALE AS SHOWN	CONTOUR INTERVAL 2.0 m	DATE OF SITE PLAN DECEMBER 2002	

100 0 100 200 300 400m
1:5000