

TABLE 1: DESCRIPTION OF WELLS

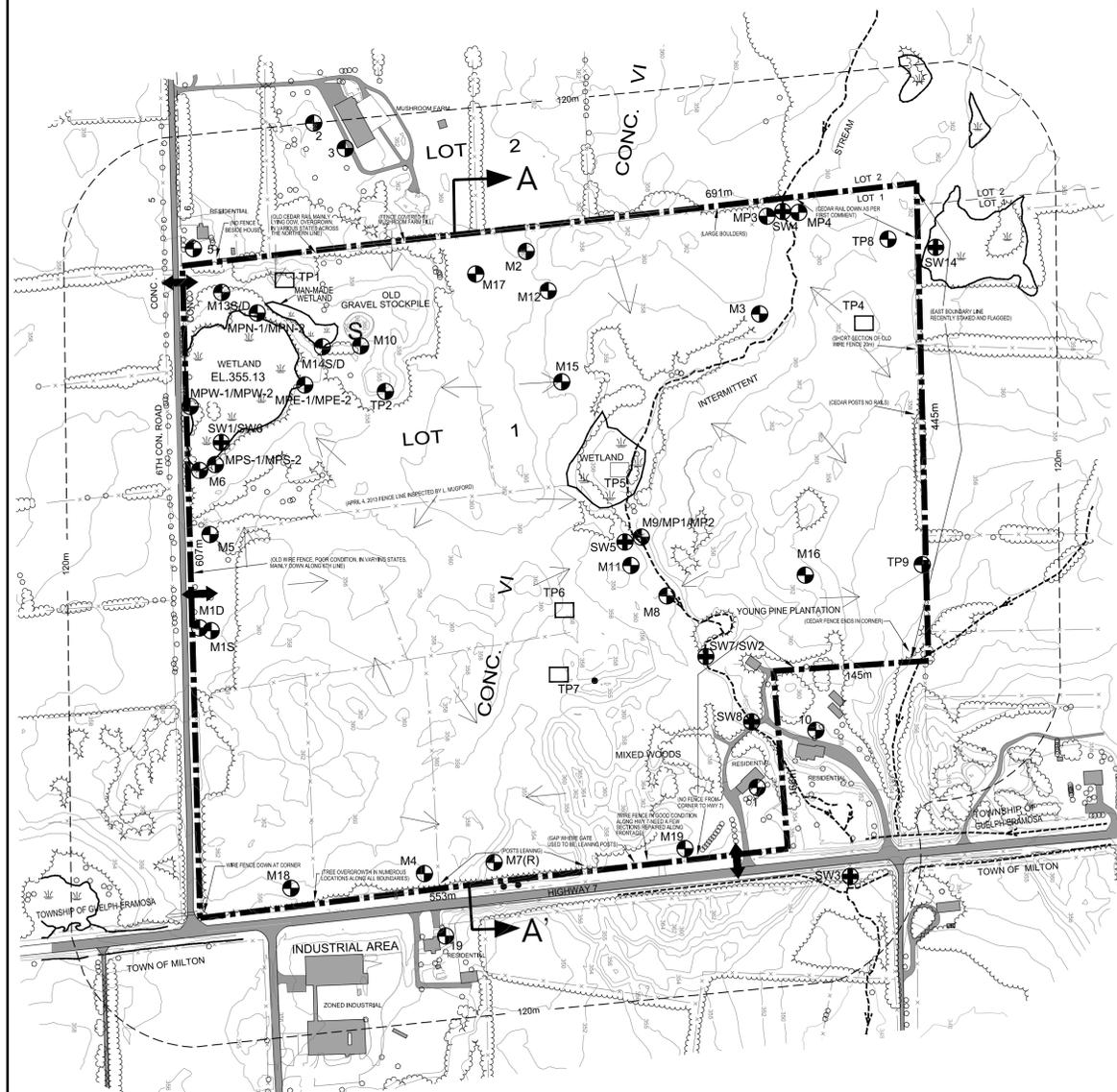
Well Location	MOE Well No.	Ground Elevation (mAMSL)	Depth of Well (mbgs)	Static Level (mbgs)	Pumped Level (mbgs)	Pumping Test Discharge (igpm)
1	6705627	358.46	30.48	12.41	13.72	8
2	*	357.20	3.33	1.77	n/a	n/a
3	*	360.01	approx 61	6.23	n/a	n/a
5	*	360.25	n/a	n/a	n/a	n/a
10	6705424	355.97	approx 27	n/a	18.29	10
19	2802048	355.90	20.12	10.35	n/a	n/a

* No MOE Water Well Record

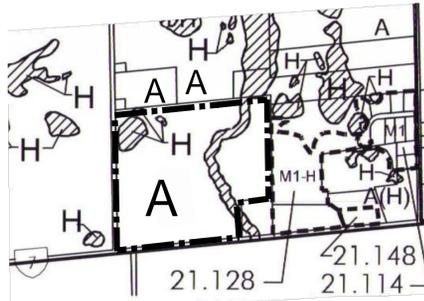
Table A1: Monitoring Station Completion Details

Monitoring Station	Type	Date Installed	Inside Diameter (mm)	Stick-up (m)	Ground Elevation (mAMSL)	Reference Point Elevation (mAMSL)	Depth (mbgs)
M1D	Drilled Groundwater Monitor	May-1990	51	0.87	358.83	358.70	12.80
M1S	Drilled Groundwater Monitor	Dec-2010	51	1.00	358.84	359.84	9.35
M2	Drilled Groundwater Monitor	May-1990	51	0.94	362.45	363.39	55.47
M3	Drilled Groundwater Monitor	May-1990	51	0.93	359.27	360.20	11.13
M4	Drilled Groundwater Monitor	May-1990	51	0.74	355.89	356.63	18.59
M5	Driveway Groundwater Monitor	Nov-1996	32	1.07	358.84	359.71	5.94
M6	Driveway Groundwater Monitor	Nov-1996	32	1.13	354.97	356.10	1.89
M7	Driveway Groundwater Monitor	Apr-1998	32	1.14	352.43	353.57	2.62
M7R	Driveway Groundwater Monitor	Nov-2010	32	0.82	352.45	353.27	3.14
M8	Driveway Groundwater Monitor	Apr-1998	32	1.16	356.30	357.46	1.55
M9	Driveway Groundwater Monitor	Apr-1998	32	1.35	355.87	357.02	2.61
M9R	Driveway Groundwater Monitor	Nov-2010	32	1.03	355.67	356.70	2.92
M10	Driveway Groundwater Monitor	Apr-1998	32	1.14	355.13	356.27	0.93
M11	Drilled Groundwater Monitor	Dec-2010	51	0.86	358.57	359.43	9.30
M12	Drilled Groundwater Monitor	Dec-2010	51	0.89	356.78	357.77	8.44
M13S	Drilled Groundwater Monitor	Dec-2010	51	0.99	356.78	357.77	4.37
M13D	Drilled Groundwater Monitor	Dec-2010	51	0.90	356.75	357.65	10.06
M14S	Drilled Groundwater Monitor	Dec-2010	51	0.89	354.64	355.62	4.27
M14D	Drilled Groundwater Monitor	Dec-2010	51	0.78	354.50	355.28	7.62
M15	Drilled Groundwater Monitor	May-2013	152	0.51	360.03	360.54	54.33
M15-I	Multi-Installation Drilled Groundwater Monitor	May-2014	25	0.51	360.03	360.54	44.01
M15-II	Multi-Installation Drilled Groundwater Monitor	May-2014	25	0.51	360.03	360.54	37.89
M15-III	Multi-Installation Drilled Groundwater Monitor	May-2014	25	0.51	360.03	360.54	29.89
M15-IV	Multi-Installation Drilled Groundwater Monitor	May-2014	25	0.51	360.03	360.54	19.88
M16	Drilled Groundwater Monitor	TBD*	TBD*	TBD*	TBD*	TBD*	TBD*
M17	Drilled Groundwater Monitor	TBD*	TBD*	TBD*	TBD*	TBD*	TBD*
M18	Drilled Groundwater Monitor	TBD*	TBD*	TBD*	TBD*	TBD*	TBD*
M19	Drilled Groundwater Monitor	TBD*	TBD*	TBD*	TBD*	TBD*	TBD*
TP1	Test Pit Location With Driveway Groundwater Monitor	Sep-1996	32	1.07	355.35	356.41	4.60
TP2	Test Pit Location With Driveway Groundwater Monitor	Sep-1996	32	1.37	354.66	356.03	5.08
TP3	Test Pit Location	Sep-1996	n/a	n/a	358.45	n/a	8.00
TP4	Test Pit Location	Sep-1996	n/a	n/a	n/a	n/a	8.00
TP5	Test Pit Location With Driveway Groundwater Monitor	Sep-1996	32	0.96	355.89	356.64	7.46
TP6	Test Pit Location	Sep-1996	n/a	n/a	359.30	n/a	7.00
TP7	Test Pit Location	Sep-1996	n/a	n/a	359.25	n/a	8.00
TP8	Test Pit Location With Driveway Groundwater Monitor	Feb-2012	32	0.91	359.45	360.38	6.07
TP9	Test Pit Location With Driveway Groundwater Monitor	Feb-2012	32	0.94	356.65	357.59	4.57
MPN-1	Mini-Piezometer	Jul-2009	19	0.84	354.67	355.51	2.07
MPN-2	Mini-Piezometer	Jul-2009	19	1.29	355.29	356.58	1.65
MPE-1	Mini-Piezometer	Jul-2009	19	0.79	354.71	355.50	2.12
MPE-2	Mini-Piezometer	Jul-2009	19	0.79	355.29	356.08	2.12
MPS-1	Mini-Piezometer	Jul-2009	19	0.77	354.73	355.50	2.14
MPS-2	Mini-Piezometer	Jul-2009	19	0.68	355.54	356.22	2.23
MPW-1	Mini-Piezometer	Jan-2011	19	0.38	354.90	355.28	2.26
MPW-2	Mini-Piezometer	Jan-2011	19	0.76	355.09	355.85	1.88
MP1	Mini-Piezometer	Nov-2010	19	1.14	351.81	352.95	3.61
MP2	Mini-Piezometer	Nov-2010	19	0.44	356.95	357.38	4.32
MP3	Mini-Piezometer	Nov-2010	19	0.75	359.80	360.55	4.00
MP4	Mini-Piezometer	Nov-2010	19	0.76	359.23	359.99	3.89
SW1	Surface Water Gauge	Aug-1996	n/a	n/a	n/a	355.34	n/a
SW2	Surface Water Gauge	Aug-1996	n/a	n/a	n/a	355.28	n/a
SW3-D	Surface Water Gauge and Streamflow Measurement	Aug-1996	n/a	n/a	349.04	351.02	n/a
SW3-U	Surface Water Gauge and Streamflow Measurement	Aug-1996	n/a	n/a	n/a	351.99	n/a
SW3A/SW8	Streamflow Measurement	Mar-2009	n/a	n/a	n/a	355.33	n/a
SW4	Surface Water Gauge and Streamflow Measurement	Aug-1996	n/a	n/a	358.87	360.52	n/a
SW5	Surface Water Gauge	Aug-1996	n/a	n/a	354.72	355.66	n/a
SW6	Surface Water Gauge	Oct-2001	n/a	n/a	n/a	354.96	n/a
SW7	Surface Water Gauge and Streamflow Measurement	Oct-2001	n/a	n/a	n/a	356.46	n/a
SW14	Surface Water Gauge	Mar-2012	n/a	n/a	n/a	356.64	n/a
RS1	Surface Water Gauge and Streamflow Measurement	Apr-2004	n/a	n/a	n/a	359.78	n/a

*TBD - To Be Determined

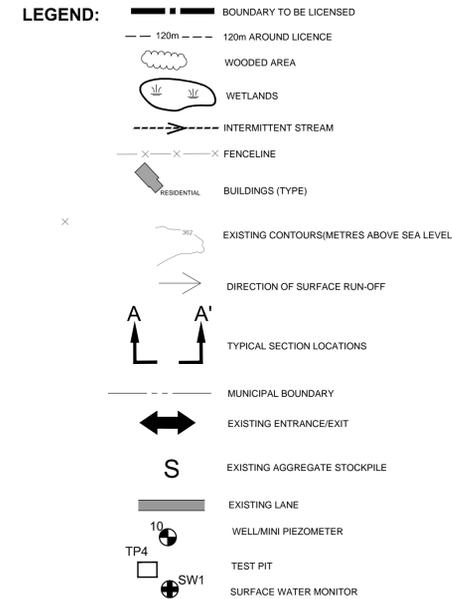


ZONING SCHEDULE:



LEGEND:
M1 RURAL INDUSTRIAL
H HAZARD LAND
A AGRICULTURAL
 BOUNDARY OF AREA TO BE LICENSED

TOWNSHIP OF GUELPH-ERAMOSA ZONING BYLAW (CONSOLIDATED 2009, DEC. 31)



NOTES:

- This Site Plan has been prepared for submission to the MNR under the Aggregate Resources Act for a Class "A" Licence, Category 2, Quarry Below Water.
- This Site Plan has been completed using information taken from Township of Guelph-Eramosa Zoning By-law, the 1:100,000 scale Provincial Highway Mapping and County Roads mapping, Ontario Base Mapping (1:10,000), topographic base mapping and water elevations - Harden Environmental Services Ltd, field information and recent aerial photography of the local area.
- This site is comprised of plantation, woodlands, a former wayside pit and a small pond/wetland. Zoning for the site is Agricultural and Hazard (See Zoning Schedule). Lands to the south are zoned Rural.
- The existing entrances to the site are shown on this plan.
- Stockpiles of aggregate are shown on the plan.
- Wells on the site and adjacent to the property are shown on the site. A description of wells is provided in Table 1.
- Along the southern portion of the site, there is a house and a shed. Residences and other structures within 120 m of the site are shown.
- There are no existing piles of scrap on the site.
- There are no existing fuel storage areas on the site.
- The existing surface water drainage is shown on this plan. An intermittent watercourse is shown on the Site Plans. Wetlands/ponds on the site and adjacent to the site are illustrated on the Site Plans. The riparian wetland boundary and the PSW boundary were flagged by GWS staff and verified in the field by the GRCA on June 7, 2013.
- The existing ground water table ranges from 348 to 356 (masl). All measurements shown on the Site Plans are in metres.
- Proposed Licensed Area = 39.4 ha.

REFERENCES:

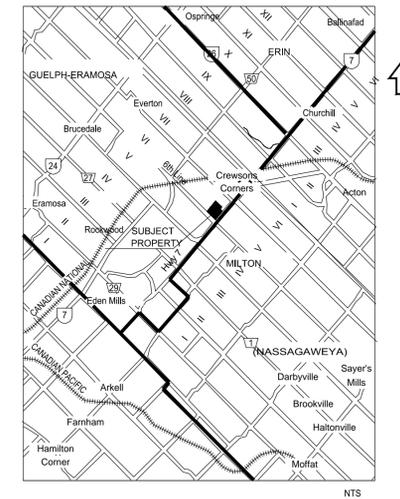
- Aerocoustic Engineering Ltd. November 19, 2012. Noise Impact Study, Project No. 11007, Hidden Quarry, Rockwood, Ontario.
- Cole Engineering Limited. 2012. Traffic Impact Assessment of the Proposed Hidden Quarry.
- County of Wellington. 1999. Official Plan.
- Explotech Engineering Ltd. November 19, 2012. Blast Impact Analysis - James Dick Hidden Quarry.
- Grand River Conservation Authority. 2011. Contour Information and Aerial Photography.
- GWS Ecological and Forestry Services Inc. 2012. Proposed Hidden Quarry Level 2 Natural Environment Technical Report.
- Harden Environmental Services Ltd. 2012. Level 1 and 2 Hydrogeological Investigation - Hidden Quarry.
- K. W. Ingram. 1990. Borehole Records - Lot 1, Concession 6, Eramosa Township, County of Wellington.
- RWDI. 2012. Air Quality Assessment - Proposed Hidden Quarry - Report # 1201429.
- Township of Guelph-Eramosa. Comprehensive Zoning By-law.
- York North Archaeological Services., 2012. Stage I-II ,Archaeological Assessment of the Proposed James Dick Ltd. Hidden Quarry

HIDDEN QUARRY

PART OF LOT 1, CONCESSION 6
 TOWNSHIP OF GUELPH-ERAMOSA
 FORMER TOWNSHIP OF ERAMOSA
 COUNTY OF WELLINGTON

Page 1 of 5 EXISTING FEATURES

KEY MAP



THIS SITE PLAN IS PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS A LICENCE, CATEGORY 2 - QUARRY BELOW WATER.

THESE SITE PLANS HAVE BEEN PREPARED UNDER THE DIRECTION OF AND CERTIFIED BY A PERSON APPROVED BY THE MINISTER OF NATURAL RESOURCES (AS PER SECTION 8(4) OF THE AGGREGATE RESOURCES ACT).

SIGNATURE: _____ DATE: _____

PREPARED FOR: **JAMES DICK CONSTRUCTION LTD**

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 Box 470 Bolton Ontario L7E 5T4
 Bolton:(905)857-3500 Fax:(905)857-4833
 Toll Free: 1-888-535-3333

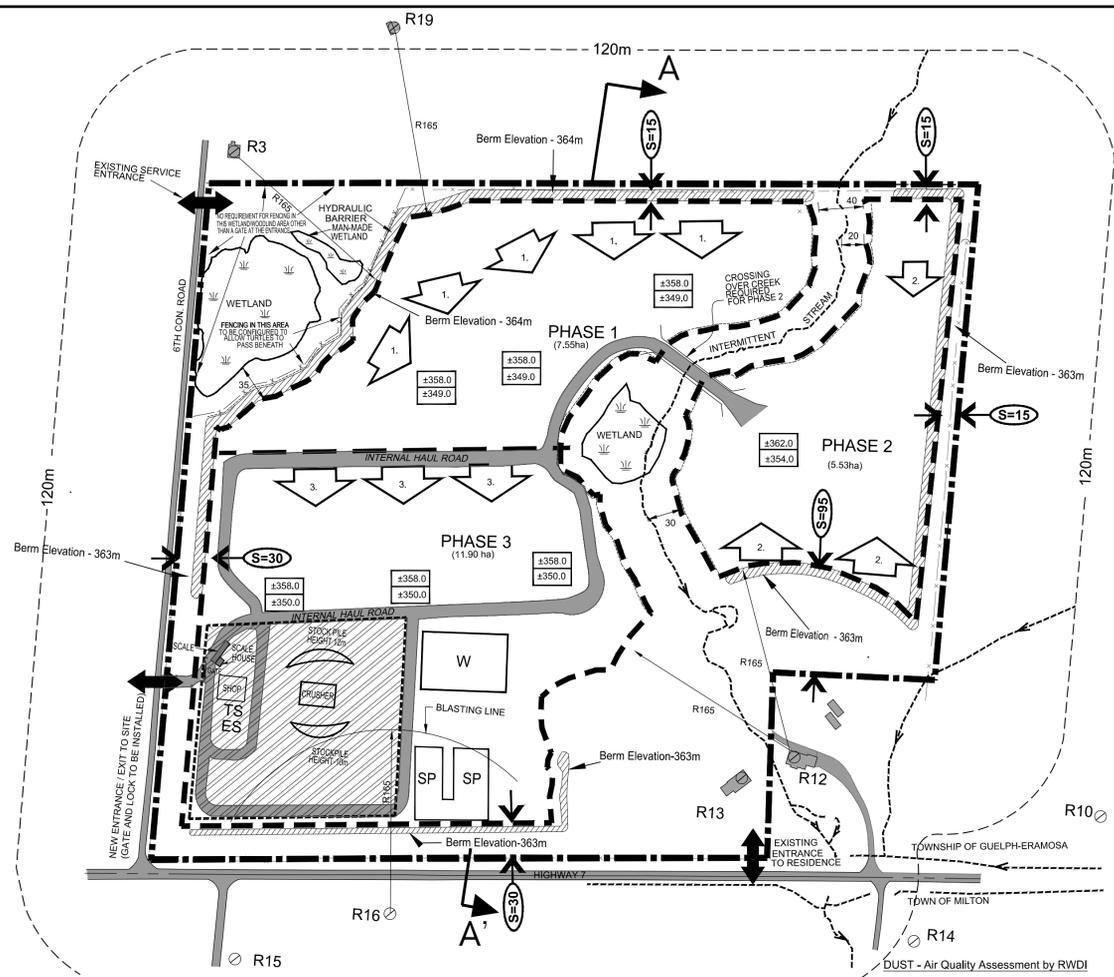
APPROVED: R.P.S. DRAWN: G.K.S.
 PLOTTED: JUNE 18, 2015 FILE: [unclear]

AMENDMENTS

No.	DATE	DESCRIPTION



STOVEL and Associates Inc.
 297 BRIARHILL DRIVE
 STRATFORD, ONTARIO
 N5A 7T1
 PHONE (519) 272-2884



SPILLS CONTINGENCY AND RESPONSE PROGRAM

- Liquid petroleum products (fuels, oil) in quantities greater than 500 litres or other hazardous liquid chemical associated with the operation will not be stored onsite on a permanent basis.
- Temporary fuel storage facilities will be inspected for leaks on a regular basis when operations are occurring. If operations are not occurring (for example on weekends or during an extended shutdown period), inspection of temporary fuel storage facilities remaining onsite will occur weekly.
- Spills containment materials (for example, absorbency materials and portable containers) are to be available on-site as part of the temporary fuel storage equipment.
- In the case of an accidental spill of fuel or oil, the following action is to be taken:
 - If the spill volume is approximately 5 L or more, or the spill occurs directly to a surface water feature, contact the Township and the Spills Action Centre established by MOECC (1-800-268-6060).
 - Take reasonable measures to stop or control the spill (such as closing valves, collecting leakage in a container, applying the absorbency materials).
 - Arrange for an inspection of the spill site and a general assessment of the environmental impact by a Qualified Person (Qualified Engineer or Professional Geoscientist) and/or the Ministry of the Environment.
 - Implement remedial measures as recommended by the Qualified Person and/or the Ministry of the Environment.
 - Prepare a written report on the incident for review by the Township, MNR/MOE.

HOURS OF OPERATION

- Shipping and Loading: 6 am to 6 pm - Weekdays and 6 am to 1 pm - Saturdays.
- Extraction and Processing: 7 am to 7 pm - Weekdays and 7 am to 1 pm - Saturdays.
- Drilling: 7 am to 7 pm - Weekdays, 7 am to 1pm - Saturdays
- Blasting: 9 am to 5 pm - Weekdays.
- Closed for Operations on Sundays and Public Holidays.
- Maintenance and Rehabilitation may occur during normal weekday hours, 6 am to 7 pm, and on Saturdays from 7 am to 5 pm.

SITE PLAN OVERRIDE TABLE

THE FOLLOWING CONDITIONS ILLUSTRATED ON THIS PLAN VARY FROM THE REQUIREMENTS OF THE PROVINCIAL STANDARDS THAT APPLY TO LICENSED PITS AND QUARRIES IN ONTARIO.

OVERRIDE	STANDARD
The fence in the NW corner will not follow the licensed boundary but will follow inside the berm between the existing wetland and the berm as shown on the plan	5.1
Rehabilitation of side slopes may occur at a slope steeper than 2:1 to promote ecological diversity	5.19.2
Selected trees will not be removed within 5m of the extraction face.	5.5

Blasting - Blasting Impact Assessment by EXPLOTECH

It is recommended that the following conditions be applied for all blasting operations at the proposed James Dick Construction Hidden Quarry:

- An attenuation study shall be undertaken by an independent blasting consultant during the first 12 months of operation in order to obtain sufficient quarry data for the development of site specific attenuation relations. This study will be used to confirm the applicability of the initial guideline parameters and assist in developing future blast designs.
- All blasts shall be monitored for both ground vibration and overpressure at the closest 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. Monitoring shall be performed by an independent party engineering firm with specialization in blasting and monitoring.
- Orientation of the aggregate extraction operation will be designed and maintained so that the direction of the overpressure propagation and flyrock from the face will be away from structures as much as possible.
- Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure. Blast designs shall be modified as required to ensure compliance with applicable guidelines and regulations. Decking, reduced hole diameters and sequential blasting techniques will be used to ensure minimal explosives per delay period initiated.
- Clear crushed stone will be used for stemming.
- Primary and secondary dust collectors will be employed on the rock drills to keep the level of rock dust to a minimum.
- Blasting procedures such as drilling and loading shall be reviewed on a yearly basis and modified as required to ensure compliance with industry standards.
- Detailed blast records shall be maintained. The MOECC (1985) recommends that the body of blast reports should include the following information:
 - Location, date and time of the blast.
 - Dimensional sketch including photographs, if necessary, of the location of the blasting operation, and the nearest point of reception.
 - Physical and topographical description of the ground between the source and the receptor location.
 - Type of material being blasted.
 - Sub-soil conditions, if known.
 - Prevailing meteorological conditions including wind speed in m/s, wind direction, air temperature in °C, relative humidity, degree of cloud cover and ground moisture content.
 - Number of drill holes.
 - Pattern and pitch of drill holes.
 - Size of holes.
 - Depth of drilling.
 - Depth of collar (or stemming).
 - Depth of toe-load.
 - Weight of charge per delay.
 - Number and time of delays.
 - The result and calculated value of Peak Pressure Level in dB and Peak Particle Velocity in mm/s.
 - Applicable limits.
 - The excess, if any, over the prescribed limit.

Noise Impact Study by Aeroustics

The following recommendations are provided in order to meet the applicable criteria:

- 12m and 10m high stockpiles will be maintained in certain locations around the processing plant for each phase and stage. The stockpile peaks will be located no further than 30m from the processing plant, and will be located such that, in plan, they block line-of-sight between processing plant equipment and sensitive receptors, as described in the table below:

Table 4: Recommended Stockpile Height and Position

Stockpiles Positioned to Shield Receptor (s)	Minimum Stockpile Height (m)
R1, R15, R16, R17, R18	10
R3, R4, R5, R11, R19	12

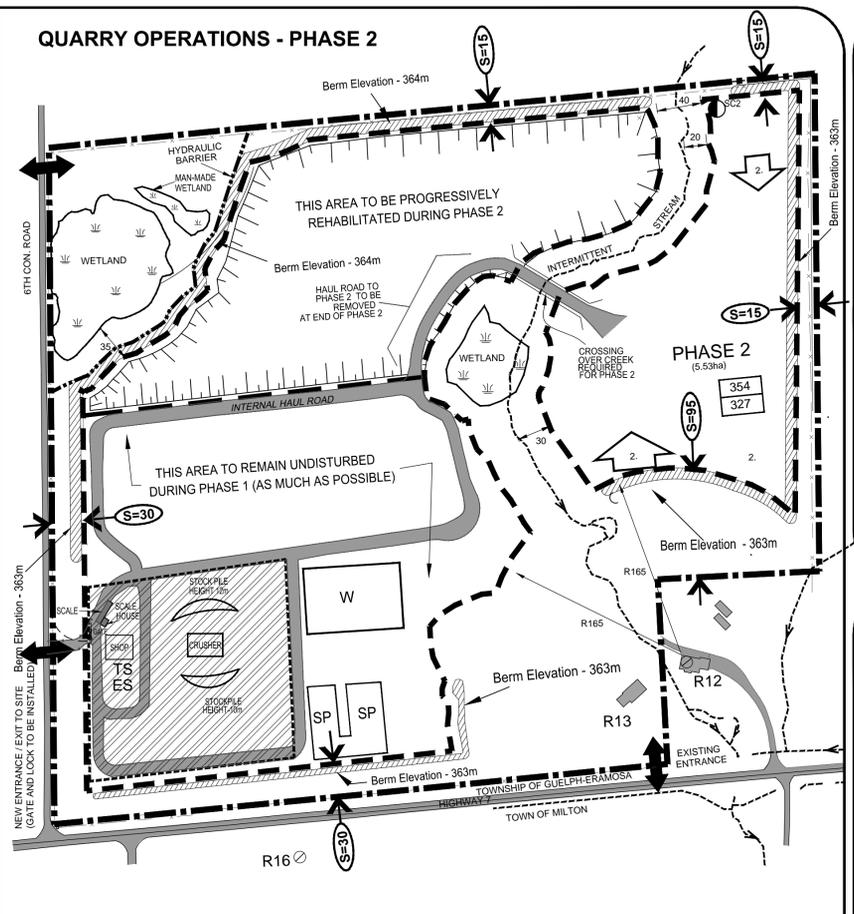
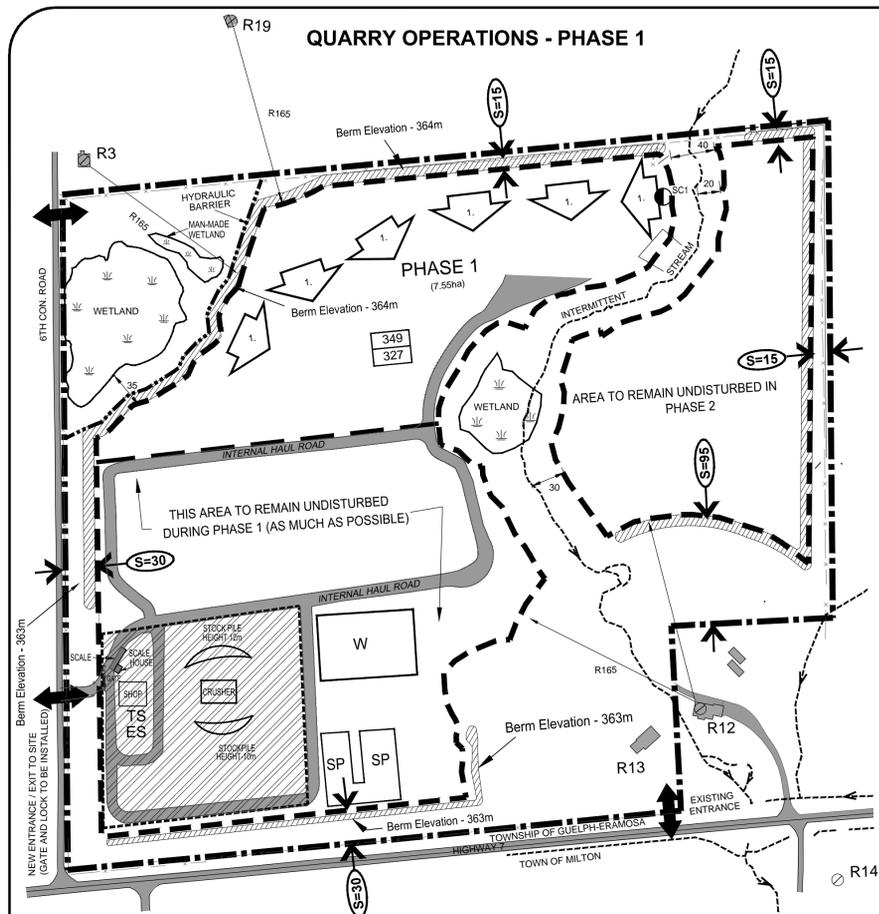
- A quiet drill with a maximum sound power rating of 112dBA will be used. This corresponds to a maximum sound pressure level rating of 75dBA at 30 meters.
- Earth berms will be constructed to the elevations shown and located as shown on the site plans.
- The recommended direction of extraction is indicated on the site plans.
- The permanent processing plant area will be established at an elevation of 349m, and a haul route trench connecting the processing plant area to Phase 1 extraction area will be excavated to the same 349m elevation.
- All construction equipment used in site preparation/construction must meet the sound emission standards defined in MOECC publication NPC-115. The relevant background information on non-stationary noise sources as well as publication NPC-115 is given in MOECC Model Municipal Noise Control Bylaw, 1978 as well as the sound source exclusions defined in MOECC publications NPC 205/232, 1995, included in the attached.
- An Acoustic Audit by an independent third-party contractor be conducted during the first year of operation of the quarry, to ensure that the noise emissions from facility equipment meet NPC-115 limits.

TECHNICAL RECOMMENDATIONS

A hydraulic barrier shall be installed along the southern and eastern portions of the wetland. The barrier will limit the outflow of groundwater downgradient of the wetland. The schematic of the hydraulic barrier is set out on the Site Plans.

A water well complaint protocol will be implemented. Details are contained in the Harden report dated December 9, 2014 page 62.

Parameter	Monitoring Location	Frequency
Groundwater Levels	M1E3, M2, M3, M4, M5, M6, M7, M8, M9, M10, M11, M12, M13, M14, M15, M16, M17, M18, M19, M20, M21, M22, M23, M24, M25, M26, M27, M28, M29, M30, M31, M32, M33, M34, M35, M36, M37, M38, M39, M40, M41, M42, M43, M44, M45, M46, M47, M48, M49, M50, M51, M52, M53, M54, M55, M56, M57, M58, M59, M60, M61, M62, M63, M64, M65, M66, M67, M68, M69, M70, M71, M72, M73, M74, M75, M76, M77, M78, M79, M80, M81, M82, M83, M84, M85, M86, M87, M88, M89, M90, M91, M92, M93, M94, M95, M96, M97, M98, M99, M100, M101, M102, M103, M104, M105, M106, M107, M108, M109, M110, M111, M112, M113, M114, M115, M116, M117, M118, M119, M120, M121, M122, M123, M124, M125, M126, M127, M128, M129, M130, M131, M132, M133, M134, M135, M136, M137, M138, M139, M140, M141, M142, M143, M144, M145, M146, M147, M148, M149, M150, M151, M152, M153, M154, M155, M156, M157, M158, M159, M160, M161, M162, M163, M164, M165, M166, M167, M168, M169, M170, M171, M172, M173, M174, M175, M176, M177, M178, M179, M180, M181, 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LEGEND:

- BOUNDARY TO BE LICENSED
- LIMIT OF AREA TO BE EXCAVATED
- SETBACK
- RESIDENTIAL BUILDINGS (TYPE)
- DIRECTION OF EXCAVATION
- MAIN INTERNAL HAUL ROUTE
- HYDRAULIC BARRIER
- ENTRANCE/EXIT
- BERM
- EXCAVATION FACE
- W WASH POND LOCATION
- TS TEMPORARY SCRAP STORAGE AREA
- SP SILT POND
- ES EQUIPMENT STORAGE
- MAIN PROCESSING AREA
- 354 EXISTING BEDROCK ELEVATION
- 327 PROPOSED QUARRY FLOOR ELEVATION
- SINKING CUT WATER LEVEL MONITORING LOCATION

NOTES:

Quarrying Operation:

- Dolomite extraction will occur above and below the water table.
- Dolomite extraction will occur once overburden, including sand and gravel, is removed and the bedrock surface is prepared for drilling and blasting.
- The use of under water excavation will result in the quarry being able to operate without the need to dewater the excavation area.
- Underwater blasting will be used in order to reduce the blasting noise and vibration impact. The frequency and timing of blasts over the duration of the operation will be variable.
- Drilling and blasting will not occur within a distance of approximately 165 m to the adjacent sensitive receptor(s). Should the blasting pattern be revised, extraction may occur within this setback.
- Once the dolomite is broken up by blasting, the quarried rock will be removed by an excavator or drag-line, and placed on the working face of the quarry to dry.
- Quarry haul trucks will be used to transport raw material from the active quarry area to the main processing area. A looped internal haul road system has been identified on the Site Plans. The size and location of this internal road system may be adjusted by the operator.
- The main processing area will include equipment such as crushing/screening plant(s) and a wash plant. Processed aggregate will be stockpiled in this area.
- Loaders will load highway trucks with finished aggregate product. Trucks will leave the site via an improved entrance on Concession 6.
- The depth of dolomite extraction is anticipated to be +/- 23-28 m. The quarry floor will be established at 327 masl.
- The final blast for each respective phase will be adjusted to permit a more roughened face. This will allow for ecological diversification of the quarry face, as per the rehabilitation program.
- As part of the rehabilitation program, stockpiled soil and overburden will be graded and planted with suitable vegetation within the extraction area.

Phase 1 Operations:

- Phase 1 is approximately 7.4 ha in size.
- Extraction of dolomite will start at the approximate elevation of 349 masl and terminate at 327 masl.
- Perimeter berming, as established in the Noise Impact Study, will be established in respective phases prior to quarrying.
- A hydraulic barrier will be installed in the northwest portion of the site, prior to extraction below the water table in Phase 1.
- Extraction will proceed in a southerly direction.

Phase 2 Operations:

- Phase 2 is approximately 5.5 ha in size.
- Extraction of dolomite will start at the approximate elevation of 354 masl and terminate at 327 masl.
- Perimeter berming, as established in the Noise and Blast Impact Study, will be established in respective phases prior to quarrying.
- Extraction will proceed such that the extraction face proceeds towards the perimeter berm.

Phase 3 Operations:

- Phase 3 is approximately 11.6 ha in size.
- Phase 3 involves the extraction of the southwesterly portion of the site, including the Central Processing Area.
- Extraction of dolomite will start at the approximate elevation of 350 masl and terminate at 327 masl.
- The internal haul route will be adjusted to allow for the extraction of this area.
- Perimeter berming, as established in the Noise and Blast Impact Study, will be established in respective phases prior to quarrying.
- Extraction will proceed such that the extraction face proceeds towards the perimeter berm.

General Notes:

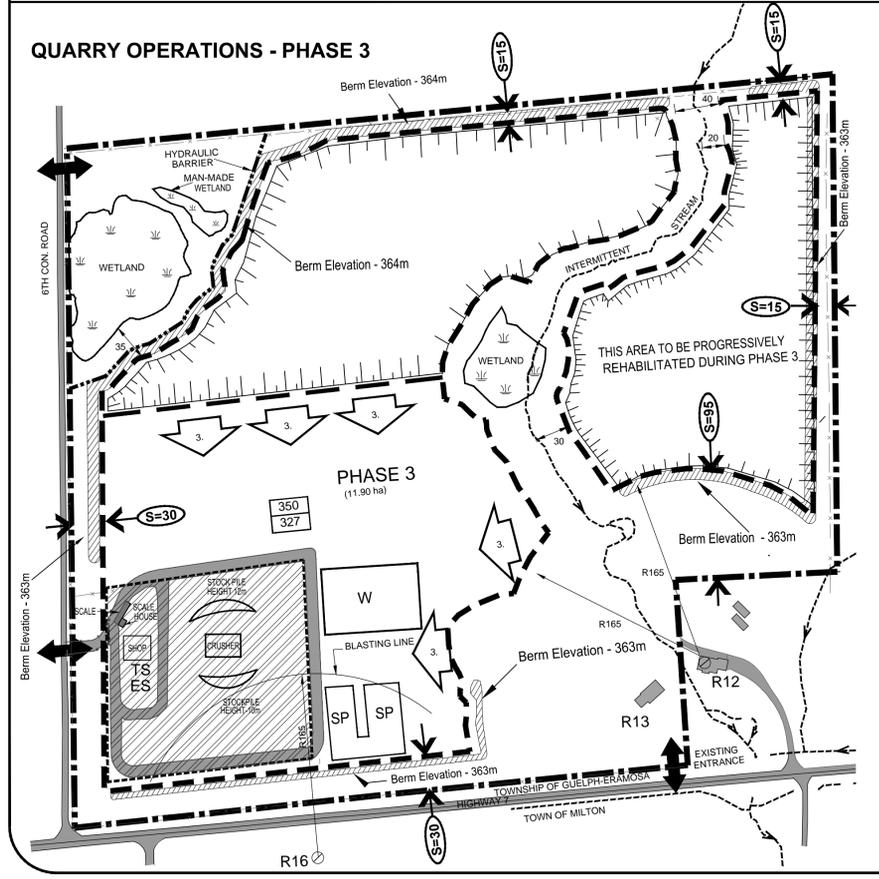
Asphalt or concrete plants are not proposed and are not permitted in this licensed area.

Fuel, oil, radiator and hydraulic fluid, and other chemicals needed from the maintenance and functioning of on-site aggregate processing equipment shall be appropriately handled and shall meet the requirements of the Technical Standards and Safety Act (TSSA) and Liquid Fuels Handling Code, and in accordance with the MOECC chemical storage guidelines. All refuelling shall be within a containment pad and any spill shall be removed and disposed of immediately at the appropriate MOECC approved facility and in accordance with the required spills contingency program for the licensed operation.

The importation and storage of snow on the subject land is not an accessory use under the Extractive Industrial zoning or deemed ancillary to an aggregate operation. As such, the importation and storage of snow is not permitted at this site.

Environmental Compliance Approvals will be obtained from the MOECC, as required.

Location of internal haul road is approximate and may vary or be altered during the course of site extraction.



ARCHAEOLOGICAL TECHNICAL RECOMMENDATIONS

LEGEND:

- EXTENT OF ARCHAEOLOGICAL SITE
- 20m BUFFER AROUND ARCHAEOLOGICAL SITE
- 50m MONITORING ZONE AROUND BUFFER AREA

SCALE 1:4,000

Archaeology Technical recommendations of the archaeologist have been incorporated onto the Site Plan to ensure protection of the cultural heritage resources.

- An archaeological resource area has been identified in the north-western portion of the site.
- The extent of the archaeological site has been buffered with a 20 m setback area. A 50 m monitoring zone has also been established around the site and around a buffer zone. Site disturbance will not be permitted within the 20 m buffer zone.
- Any soil disturbance within the monitoring zone will be monitored by a licensed archaeologist who is empowered to stop construction if there is a concern for impact to an archaeological site. The area within the 20-meter buffer is a no go zone by construction crews at any time.
- No activities within the confines of this site are allowed until after the Stage 3 assessment has been completed to the satisfaction of the Ministry of Tourism, Culture and Sport and the report has been entered into the Ontario Registry of Reports. A partial clearance is requested and a letter from the ministry confirming that there are no further concerns with regard to alterations to archaeological sites for the specified part of the project area namely AJHa-50 (Section 7.8.5 -a - e).
- A Stage 3 archaeological study and removal will be required to clear this property post licensing. The buffer zone shall not be disturbed should archaeological clearance not be granted. The acoustic berm will be relocated to the east and south of the Buffer zone if clearance is not granted. The limit of extraction will also be modified in this area.
- Should deeply buried archaeological material be found on the property during construction activities, the Ministry of Culture shall be contacted immediately (519) 675-7742.
- In the event that human remains are encountered during construction, the licensee shall immediately contact both the Ministry of Culture and the Registrar of the Cemeteries Regulations Unit of the Ministry of Consumer and Commercial Relations (416) 326-8404.

HIDDEN QUARRY

PART OF LOT 1, CONCESSION 6
TOWNSHIP OF GUELPH-ERAMOSA
FORMER TOWNSHIP OF ERAMOSA
COUNTY OF WELLINGTON

Page 3 of 5

QUARRY PHASING

KEY MAP

NTS

THIS SITE PLAN IS PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS A LICENCE, CATEGORY 2 - QUARRY BELOW WATER.

THESE SITE PLANS HAVE BEEN PREPARED UNDER THE DIRECTION OF AND CERTIFIED BY A PERSON APPROVED BY THE MINISTER OF NATURAL RESOURCES (AS PER SECTION 8(4) OF THE AGGREGATE RESOURCES ACT).

SIGNATURE: _____ DATE: _____

PREPARED FOR: **JAMES DICK CONSTRUCTION LTD**

www.jamesdick.com
Box 470 Bolton Ontario L7E 5T4
Bolton:(905)857-3500 Fax:(905)857-4833
Toll Free: 1-888-535-3333

APPROVED: R.P.S.	DRAWN: G.K.S.
PLOTTED: JUNE 18, 2015	FILE: [redacted]

No.	DATE	DESCRIPTION	APP'D
AMENDMENTS			

Scale: 0 100 200 meters

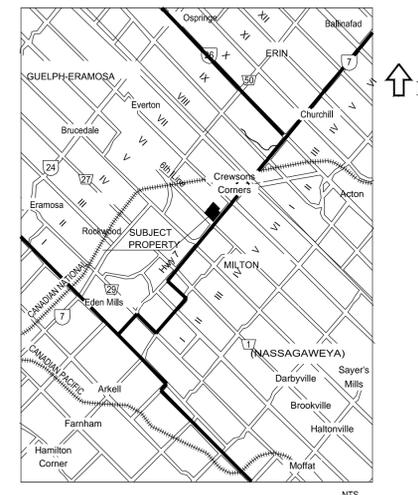
STOVEL and Associates Inc. 297 BRIARHILL DRIVE STRATFORD, ONTARIO N5A 7T1 PHONE (519) 272-2884

HIDDEN QUARRY

PART OF LOT 1, CONCESSION 6
TOWNSHIP OF GUELPH-ERAMOSA
FORMER TOWNSHIP OF ERAMOSA
COUNTY OF WELLINGTON

Page 4 of 5 PROGRESSIVE REHABILITATION AND FINAL REHABILITATION

KEY MAP



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PLOTTED: JUNE 18, 2015 FILE: [redacted]

No.	DATE	DESCRIPTION	APP'D
AMENDMENTS			



Scale: 0 100 200
1:3000 meters

STOVEL and Associates Inc.
297 BRIARHILL DRIVE
STRATFORD, ONTARIO
N5A 7T1
PHONE: (519) 272-2884

LEGEND:

- BOUNDARY TO BE LICENSED
- LIMIT OF AREA TO BE EXCAVATED
- 120m AROUND LICENCE
- TYPICAL SECTION LOCATIONS
- MUNICIPAL BOUNDARY
- FENCELINE
- RESIDENTIAL BUILDINGS (TYPE)
- VERTICAL FACE
- SETBACK
- FLOOR OF REHABILITATED QUARRY LAKE
- REFORESTED TABLELAND AREA
- MAN-MADE / CREATED WETLANDS
- WETLAND AREA
- CLIFF EDGE REHABILITATION
- ENTRANCE/EXIT

NOTES:

General:

- The site will be rehabilitated to an ecological end use, with two ponds. Wetlands will be created along the edge of the two ponds. Tableland areas will be reforested with appropriate native trees and shrubs as indicated.
- Surface runoff shall be directed toward the onsite ponds.
- The access road shall be maintained during the course of progressive rehabilitation efforts.
- Fencing shall remain around the perimeter of the quarry licence.
- All equipment and machinery within the extraction limits will be removed upon completion of extraction.
- The area to be rehabilitated is 24.5 ha.
- Topsoil that is stripped from operational areas will be placed in screening berms around the perimeter of the site as shown on the site plans. As part of final rehabilitation, the topsoil in berms will be used to achieve final contours as indicated on the site plans.
- If soil becomes significantly compacted, the rehabilitated lands will be ripped prior to the application of topsoil. The final surface soil layer should be loose with undulations so that soil depth over bedrock is variable and micro-habitats are created.
- Adequate vegetation will be established and maintained to control erosion of any topsoil or overburden replaced on the site for rehabilitation purposes.
- The riparian wetland boundary and the PSW boundary were flagged by GWS staff and verified in the field by the GRCA on June 7, 2013.

Aquatic Rehabilitation

- The onsite ponds are approximately 13.9 ha and 3.5 ha in size.
- The predicted final water levels for the lakes are: a) 348.6 masl in the west quarry lake, and b) 348.4 masl, in the east quarry lake.
- The area extracted below the water table will have a variable slope face that will range from 2:1 to vertical slopes.
- The rehabilitated lakes will be approximately 23 m in depth. The lakes will be rehabilitated for fish and aquatic habitat. Habitat enhancement measures for the lakes include the following: boulder features, shoals, and littoral zone development.
- Given the depth of the quarry ponds, it is anticipated to be suitable for walleye and smallmouth bass.
- Vertical faces can be modified during the final blast. The quarry face can remain roughened, to create ledges and crevices, thus enhancing micro-habitats.
- Available native, onsite soil and large rock piles or boulders can be dumped over the quarry face to provide a diversity of habitat.

Wetland Creation

- The edges of the quarry ponds will be rehabilitated to create artificial wetlands as indicated.
- Wetland communities can be created along the pond edges with a maximum 2 m water depth from the final estimated water table, i.e. wetland floor at +/- 346 to 349 m MASL.
- In these wetlands, the excavation pattern will be modified to create a slope of approximately 5:1 to 10:1.
- Available overburden and soil can be used to create these slopes as well.
- Available soil can be graded to provide a medium for wetland plant communities.
- Once the wetland side slope has been graded, a minimum of 100 mm of soil will be applied to this area to permit the establishment of wetland vegetation. This area will be allowed to naturally regenerate to a wetland habitat.
- Wetland plants suitable for planting in created wetlands include: Northern water-plantain, broadleaf arrowhead, blueflag, pickerel weed, Bebb's sedge, stipitate sedge, soft rush, fowl mana grass, Virginia wild rice, rice cut-grass, woolgrass, dark-green bulrush, softstem bulrush, broad-leaf cattail, white water-ily, water smartweed, sago pondweed, floating pondweed.
- To help accelerate the natural process of plant succession the following wetland species will be randomly planted in small clusters at a 0.5 to 1.0m spacing along the shoreline of the quarry ponds: northern water plantain, broadleaf arrowhead, as well as the species listed in the point above.
- Substrates may vary from bare bedrock to parent mineral material (sand, gravel, cobble) to organic substrates. Hydrophytic emergent cover will exceed 25% and be dominated by grasses, sedges, and rushes. Water levels within shallow marsh areas will not exceed 2 m.

- Terrestrial Rehabilitation**
- The side slopes of the setback areas will be graded to achieve a slope of 2:1. Overburden may be applied to the side slope areas and tableland areas to achieve the necessary grade. A minimum of 100 mm of topsoil will be applied to the graded side slope areas.
- Terrestrial areas will be planted with suitable native shrubs and trees, such as white spruce, white pine and eastern white cedar. Shrubs that may be used include staghorn sumac, red-osier dogwood and raspberry. Additional plants are listed on the Site Plan.
- The sideslopes and tableland areas of the quarry floor will be covered with available overburden and topsoil and seeded with a suitable native upland meadow seed mix.
- Should seeding fail, the area shall be re-seeded as soon as possible.
- Minor grading of the setback areas may be required to permit proper final slopes for the site in areas not to be forested.

SITE PLAN OVERRIDE TABLE

THE FOLLOWING CONDITIONS ILLUSTRATED ON THIS PLAN VARY FROM THE REQUIREMENTS OF THE PROVINCIAL STANDARDS THAT APPLY TO LICENSED PITS IN ONTARIO.

OVERRIDE	STANDARD
VARIANCE OF THE SIDE SLOPES FROM 2:1 IS PERMITTED TO PROMOTE ECOLOGICAL DIVERSIFICATION	5.10
SELECTED TREES WILL NOT BE REMOVED WITHIN 5M OF THE EXTRACTION FACE.	5.5

Ecological Enhancement Strategy:

The goal of the ecological enhancement strategy is to create a growing environment that will provide for the long-term development of a healthy, diverse ecosystem.

The following features will be incorporated into the rehabilitation plan:

- Quarry lake areas, including the littoral zone,
- Quarry face,
- Created wetland areas, and
- Reforested tableland areas.

Quarry Lake Areas:

The extracted quarry lake areas will comprise good quality cold/cool water. The following features will be incorporated into the rehabilitation plan:

- Large boulders can be left in the bottom of the quarry
- Stone and screening piles can be left in the bottom of the quarry
- Boulders, stone and screening piles can be dumped over the bank of the quarry
- Along the edge of the littoral, a productive littoral zone can be created by dumping soil over the edge. Stumps and logs can be strategically placed along the shoreline.

The opportunity exists to create a diversified shoreline through the extraction process. In near shore areas, on lands that will not be rehabilitated as wetlands, variable shorelines will also be considered. The area receiving this modified side sloping detail focuses on the first 2 m of the final lake water level. Side sloping and planting details similar to the wetland enhancement program will be employed.

Cliff and Talus Slope Rehabilitation:

Cliffs will be created where steep exposures of bedrock remain after extraction that are more than 3 m high. Sharp to variably broken edges, faces, and rims will be established by rough blasting the final face. Vegetation cover will be established that ranges from patch to < 60 % tree cover, and an average substrate depth of < 15 cm. Talus are slopes of rock rubble, with coarse rocky debris making up > 50 % of substrate surface and an average substrate depth of < 15 cm, and a vegetation cover that ranges from patch to < 60 % tree cover. Talus slopes will be created where limestone faces are less than 5m high after extraction. Species to be planted in these areas are Canada Bluegrass, White Cedar, Sugar Maple, and Ironwood.

It is recommended, however, that at least 20 per cent of the quarry face remain barren and untreated.

Created Wetlands:

The site plans illustrate areas on the subject property where wetlands will be created. These areas are in immediate proximity to where the perimeter berming is located. The object of this process is to create wetland with a slope of approximately 5:1 to 10:1. Appropriate native vegetation should be planted in this area.

Reforested Tableland Areas:

Once the tableland areas have been graded using overburden to backfill, these areas should be treated with a layer of topsoil, and then planted with appropriate native vegetation. In general, the tableland areas will have a finished slope not to exceed 2:1. The objective is to achieve a soil mass of 50-100 cm in depth with a topsoil layer that is 10-20 cm in depth.

During the rough grading stage of the northwestern and southern portion of the site, the licensee shall consider creating microhabitat features such as, small depressions, mounding of soil in long, linear formations, brush piles, ephemeral pools, and small stone and screening piles. The intent of this grading program is to diversify the landscape and to create habitat opportunities for a variety of wildlife including amphibians. It is also recommended, that in portions of the rehabilitated quarry, the exposed dolostone quarry floor be left in a roughened condition without the treatment of a soil layer or planted with native vegetation.

Native species, such as white pine, white spruce, white cedar, red oak, sugar maple, red maple, white birch and bur oak, shall be used. Seedling stock from an appropriate nursery can be used with a minimum planting density of 1500 seedlings per ha, planted at a 2.4 x 2.4m spacing. Prior to reforestation common buckthorn and other invasive non-native shrubs shall be cut down low to the ground and/or treated with an appropriate herbicide. A minimum of 70% of the trees planted as part of the reforestation program will be coniferous trees. The following shrubs may be included in the replanting program, grey dogwood, red-osier dogwood, staghorn sumac, nannyberry, chokecherry and serviceberry. Forest cover should be approximately 80% of the tableland area.

To reduce undesirable competition and improve the probability of seedling survival and growth, grass and weed competition in planting areas may be scalped or controlled by other methods.

Watering of planted trees, shrubs and ground cover required during droughty periods.

All vegetation planted shall be maintained in a healthy growing condition. Should planted vegetation die, it shall be replaced within one growing season.

MONITORING

Monitoring will be carried out to ensure that the survival and growth of planted trees, shrubs and ground covers are sufficiently established to restore the site to the desired woodland and wetland vegetation.

Monitoring will be carried out until trees and shrubs are considered free to grow which means their root systems well established and the height of the competing herbaceous vegetation particularly grass and golden rod (i.e. about 1m).

It is estimated that this will take 5 years.

To ensure adequate stocking in reforested areas, there must be at least 80% seedling survival after 5 years or when trees are considered free to grow.

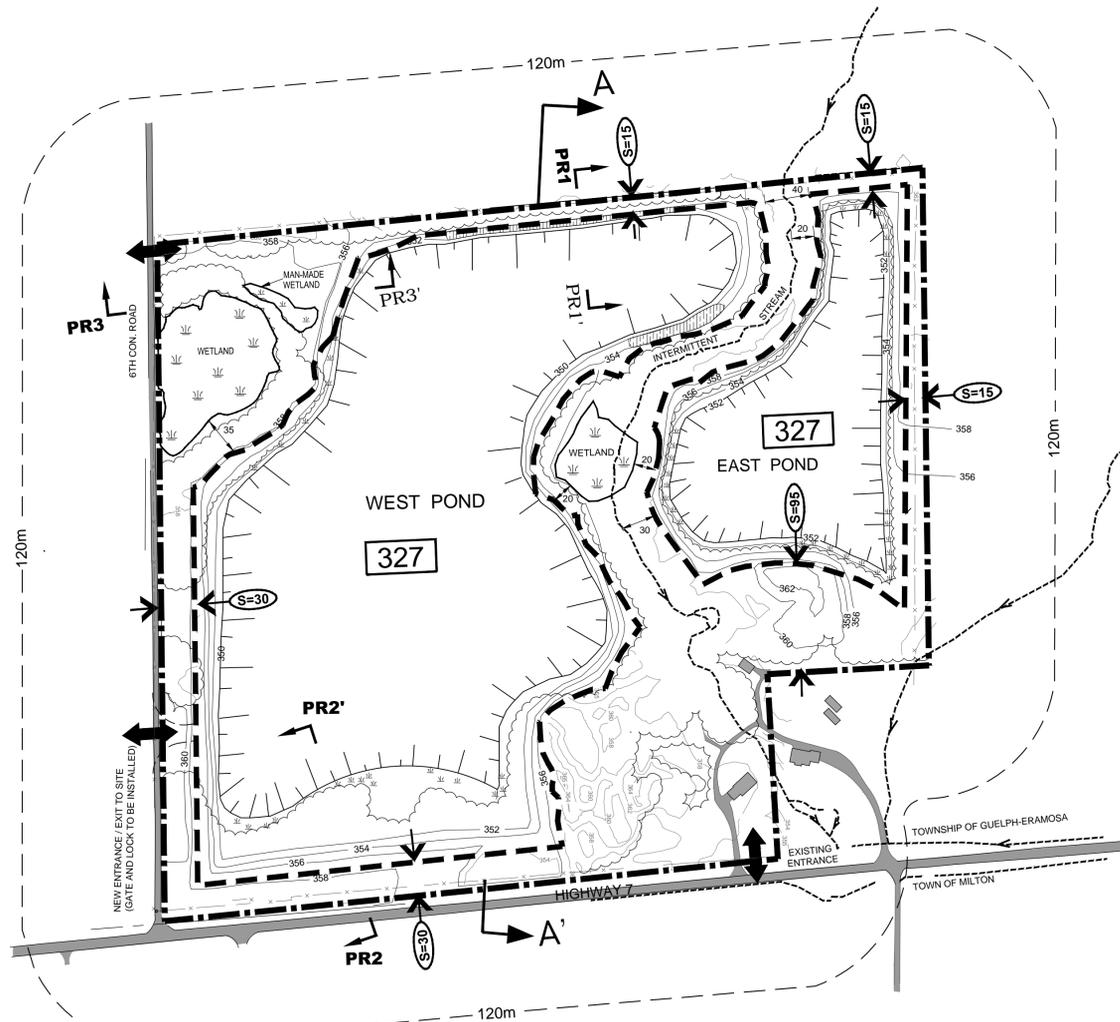
A seedling survival census will be carried out on an annual basis during late summer/early fall to determine the need for re-plantings in failed areas areas the following spring. The same species will be used for re-plantings unless there is good reason for a change. Bare-root transplants stock 20-40 cm in height is recommended for plantings on these difficult sites.

Once Progressive Rehabilitation has commenced:

- Photographic surveys from common vantage points will be taken annually.
- Compliance with final ground elevations shown on the rehabilitation plans (subject to minor modification so long as rehabilitation objectives are met).
- Quarterly assessment of depth of water (not to exceed 2m) for staff gauges installed within created wetland areas.
- Prior to license surrender, a biological survey of wetland vegetation characteristics including species density, distribution and percent cover such that in wetland areas hydrophytic cover will be at least 25% and dominated with rushes, grasses and sedges. Biological surveys of target conservation species will be made at the time of license surrender and results of the study will be circulated to the MNRF and the GRCA.
- Surface water Quality testing will be conducted on a semi annual basis (spring and fall) and will assess nutrient levels (nitrate and phosphorus), pH, dissolved oxygen and alkalinity.

SEDIMENT AND EROSION CONTROL

Due to topographic conditions and the abundance of forest cover on this site, tree protection fencing must be erected at the limit of all setback where ground elevations are equal to or lower than the elevations in the adjacent extraction area. This is particularly required nearby wetlands, in the stream valley and where noise berms are to be constructed. Standard Paige wire farm fence or similar fence will be installed in the locations identified on the Operations Plan after tree clearing and grubbing has been completed. Silt screen must also be attached to the Paige wire fence where required and have its base covered with soil to ensure it can effectively trap sediment. Along the stream corridor silt fence will be located inside the extraction area and there will be a "no touch zone" within 2 meters of the silt fence.



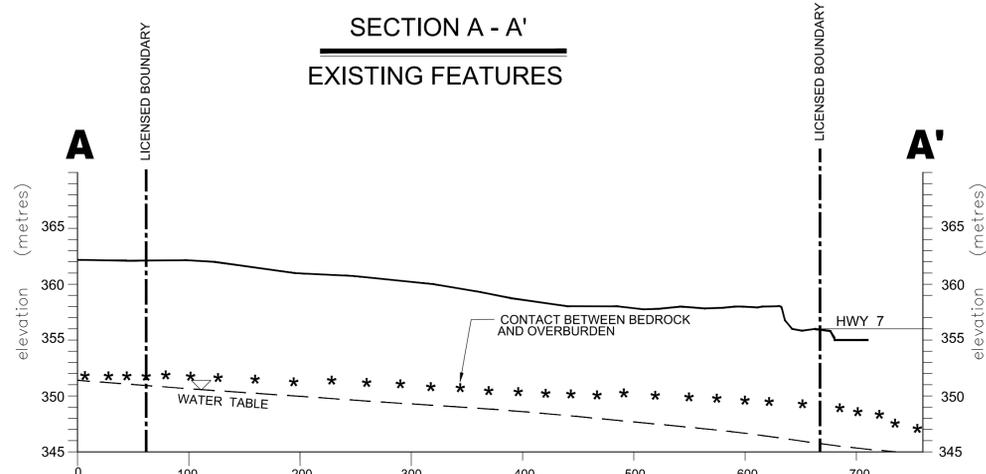
TRIGGER LEVELS AND CONTINGENCY MEASURES (FROM PAGE 2 OF 5)

Parameter	Monitor Location	Warning Level	Trigger Level	Trigger Level Contingency Measures which shall be implemented	
Bedrock Aquifer	M1D	349.38	349.78	Increase Monitoring Frequency and one or more of:	
	M2	348.31	347.81		
	M13D	351.63	351.28		
	and/or	M14D	352.36	351.98	Decrease the Rate of or Cease Extraction;
		M15	TBD	TBD	
		M16	TBD	TBD	
	and/or	M17	TBD	TBD	Increase the Length or Width of Barrier;
		M18	TBD	TBD	
		M19	TBD	TBD	
NW Wetland	SW6 Winter	354.35	354.2	Change Mining Configuration or Mining Extent; and/or	
	SW6 Spring	354.48	354.33		
	SW6 Fall	358.38	354.23		
Allen Wetland	SW4 May	<25 L/S		Alter Timing to Coincide with High Water Season, such that water levels recover above Trigger Level	
	SW4 June 22	No Flow			
Sinking Cut	Buoy in Pond		346.83	Cease Extraction until Water Levels Recover	

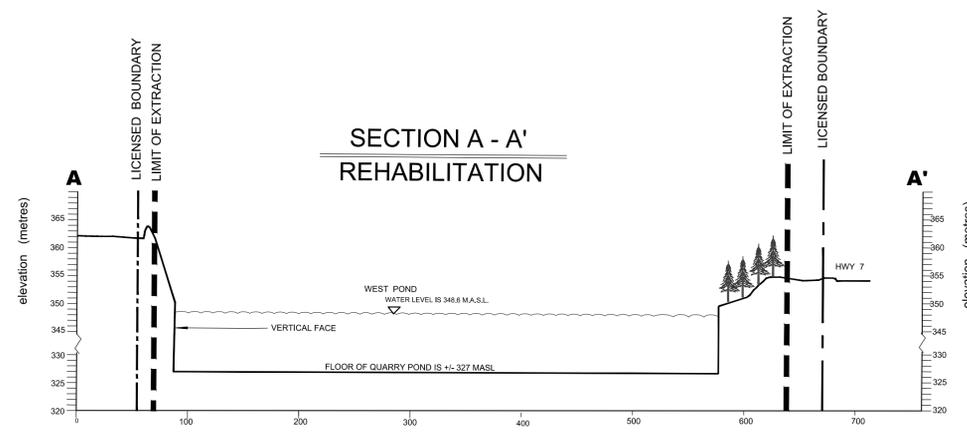
If any trigger level is breached, the following measures will be taken;

- Confirmation of water level within 24 hours. Increase monitoring to weekly until source of the trigger level exceedence is identified.
- Within seven days complete an evaluation of precipitation, groundwater monitoring data and quarry activities to determine if quarry activities are responsible for the low water level observed.
- If quarry activities are found to be responsible, the above actions will be considered and a response presented to the GRCA and the Township of Guelph-Eramosa.

Note: An annual hydraulic monitoring report will be submitted to the MOE, MNR and Guelph/Eramosa Township prior to March 31st of the following calendar year.



HORIZONTAL SCALE: 1:3,000
VERTICAL EXAGGERATION 10x

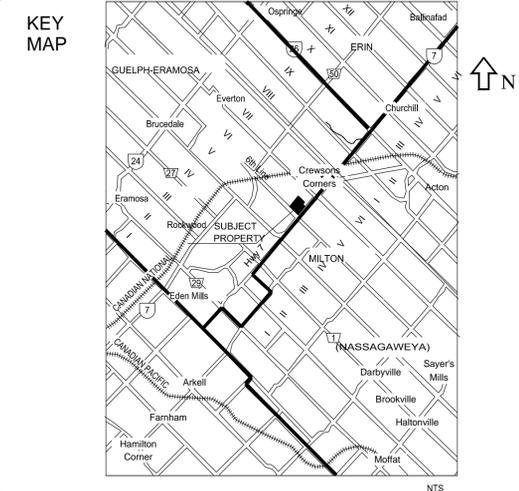
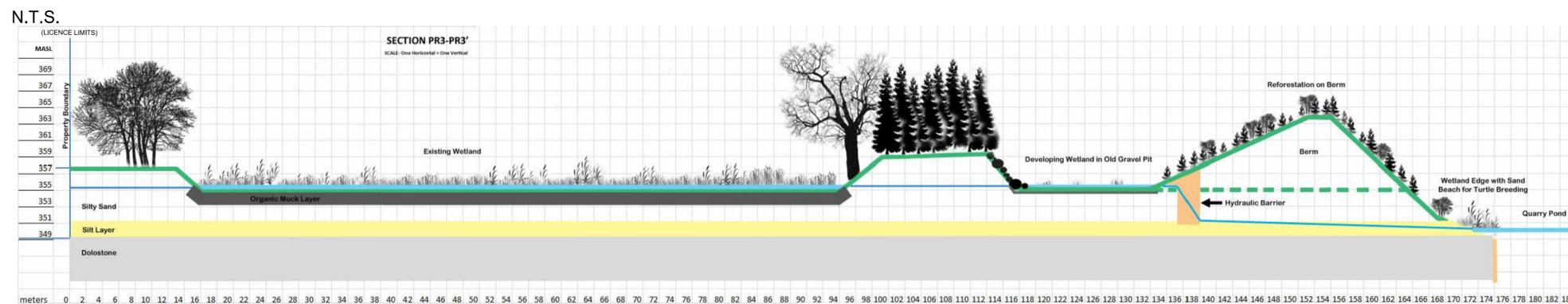
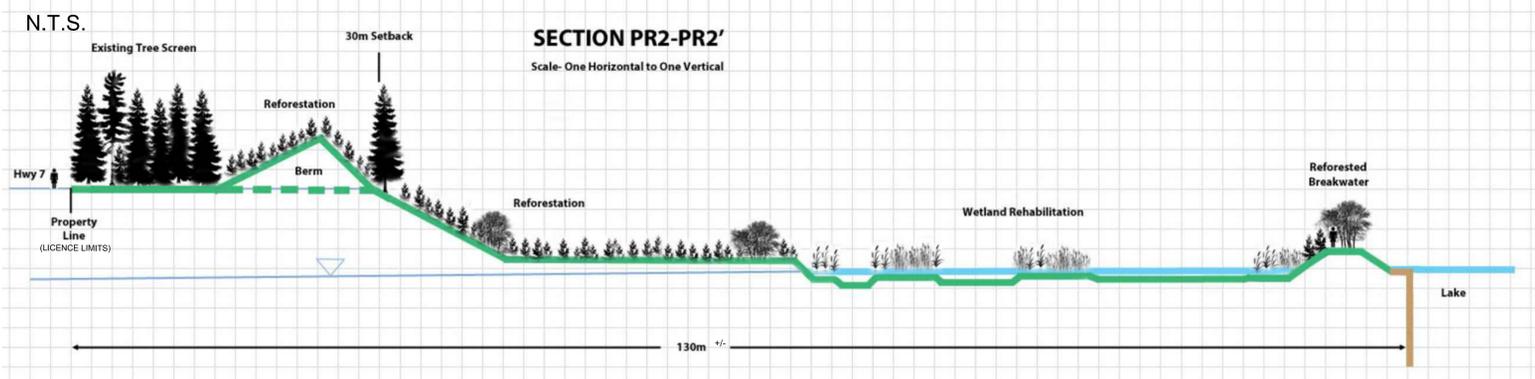
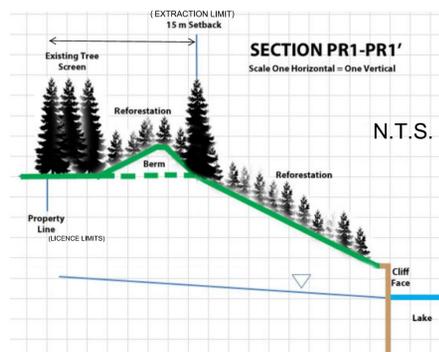
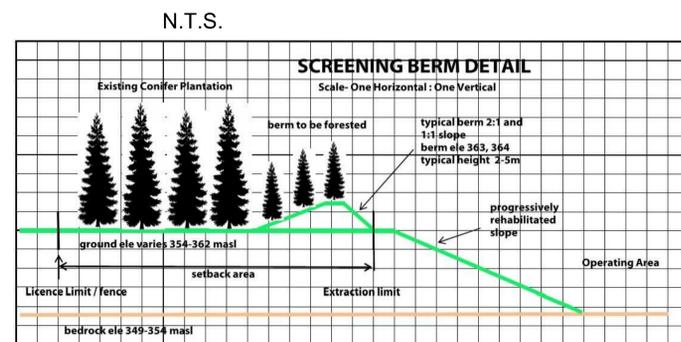


HIDDEN QUARRY

PART OF LOT 1, CONCESSION 6
TOWNSHIP OF GUELPH-ERAMOSA
FORMER TOWNSHIP OF ERAMOSA
COUNTY OF WELLINGTON

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CROSS SECTIONS



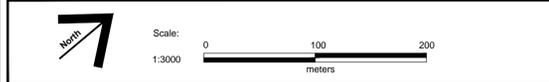
THIS SITE PLAN IS PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS A LICENCE, CATEGORY 2 - QUARRY BELOW WATER.
THESE SITE PLANS HAVE BEEN PREPARED UNDER THE DIRECTION OF AND CERTIFIED BY A PERSON APPROVED BY THE MINISTER OF NATURAL RESOURCES (AS PER SECTION 8(4) OF THE AGGREGATE RESOURCES ACT).

SIGNATURE: _____ DATE: _____

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APPROVED: R.P.S. FILE: G.K.S.
PLOTTED: JUNE 18, 2015

No.	DATE	DESCRIPTION	APP'D
AMENDMENTS			



STOVEL and Associates Inc. 297 BRIARHILL DRIVE STRATFORD, ONTARIO N5A 7T1 PHONE (519) 272-2884