APPENDIX B
ARIA CULTURAL RESOURCE MANAGEMENT REPORT LETTER
(Nova Scotia Communities, Culture and Heritage, 2024)

Environmental Assessment Registration Document:
Hartville Quarry Expansion
Ellershouse, Windsor West Hants Regional Municipality
Nova Scotia

NOVA SCOTIA
Communities, Culture and Heritage
Culture and Heritage Development

1741 Brunswick Street, 3rd Floor
PO Box 456, STN Central
Halifax, NS B3J 2R5
902-424-8443

April 19, 2024

Travis Crowell
Davis MacIntyre & Associates Limited
109 John Stewart Avenue
Dartmouth, Nova Scotia
B2W 4J7

Dear Travis Crowell,

RE: Heritage Research Permit Report
A2023NS212 – Ellershouse Quarry Expansion

We have received and reviewed the report on work conducted under the terms of Heritage Research Permit A2023NS212 – Ellershouse Quarry Expansion Project in Hants County, Nova Scotia in 2023.

There exist plans to expand the existing Hartville Quarry on Ellershouse Road, in Hants County, Nova Scotia. The proposed expansion will increase the size by approximately 6 hectares to the south and east of the current 4 ha quarry. Envirosphere Consultants Limited retained Davis MacIntyre & Associates Limited (DM&A) to conduct an archaeological resource impact assessment (ARIA) for the proposed development area. This ARIA involved Mi'kmaq engagement, historic background study, predictive modelling, and field reconnaissance.

Historic background study indicated that the area has been home to the Mi'kmaq for millennia, long prior to the arrival of Europeans. There is no evidence of European settlement in the proposed development area, though a land grant was held by Francis Von Ellershausen that the current development boundaries are contained within. Field reconnaissance showed the proposed development area to be predominantly sloping, poorly drained terrain with scattered pools of standing water throughout both the northern and southern portions of the assessment area, with a low-lying, poorly drained, and wet swale dividing the two sections. Evidence of past forestry disturbances and impact from industrial activities were evident throughout the proposed development area. No areas of moderate to high archaeological potential, archaeological features or cultural materials were identified within the proposed development area. The area was ascribed low archaeological potential.

Based on the above, DM&A recommended no further archaeological investigation for the proposed development area. Should development plans change, then a qualified archaeologist should be contracted to conduct an additional assessment on any new areas outside the project boundaries identified in this report. In the unlikely event that any archaeological resources are encountered during ground disturbance and an archaeologist is not already on site, it is required that all activity cease and the Coordinator of Special Places (902-229-3159) be contacted immediately regarding a suitable method of mitigation.

CCH Staff have reviewed the report and find it to be acceptable as submitted. Please do not hesitate to contact me with any questions or concerns.

Sincerely,

John Cormier
Coordinator, Special Places

APPENDIX C
HYDROGEOLOGICAL ASSESSMENT
(Consulting Hydrogeologist J. Russell Finley, 2023)

Environmental Assessment Registration Document:
Hartville Quarry Expansion
Ellershouse, Windsor West Hants Regional Municipality
Nova Scotia

HERAA
Consulting Inc.

HYDROLOGY STUDY

PID 45007903, 45407111, 45407095
HARTVILLE
NOVA SCOTIA

Prepared for
ALVA Construction Limited

HERAA
Consulting Inc.

Hydrology
Expert Witness
Remediation
Audits
Assessments

November 30, 2023

Connor MacDonald P. Eng.
ALVA Construction Limited
5600 Highway 7
Antigonish, Nova Scotia, B2G 2J4

Regarding: Hartville Quarry Expansion, Hartville, Nova Scotia

Dear Mr. MacDonald:

HERAA Consulting Inc was retained to undertake a hydrology study of the above mentioned property and surrounding area requiring an extensive review of the available data.

When concluded, the study completed by HERAA Consulting did not reveal any indications of adverse impacts to the surface or groundwater, flow regime resulting from a proposed expansion of the existing quarry.

HERAA Consulting Inc.

Prepared by:

J. Russell Finley, MASc.,P.Geo., EP(CEA)
President & Senior Hydrogeologist

c: Patrick Stewart
Envirosphere Consultants Ltd.

HERAA Consulting Inc.
961 Brussels St, Halifax, NS
Russell.j.finley@gmail.com
T: (902) 221-8871

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1.0 INTRODUCTION

HERAA Consulting Inc. (HERAA) was retained by ALVA Construction Limited to complete a hydrological assessment of an existing sand and gravel quarry located in Hartville, Nova Scotia (Figure A-1). A view of the site is provided by the following aerial photo, Image 1 below.

Image 1: Aerial photo of site showing approximate PID boundaries (Google, 2022)

The purpose of this study is to determine the potential for adverse impacts on water resources as a result of expanding the current boundaries of the existing Quarry. It is proposed to extend the existing 3.9 hectare Quarry to the south and east, resulting in a maximum area of approximately 10.1 hectares (Image 2).

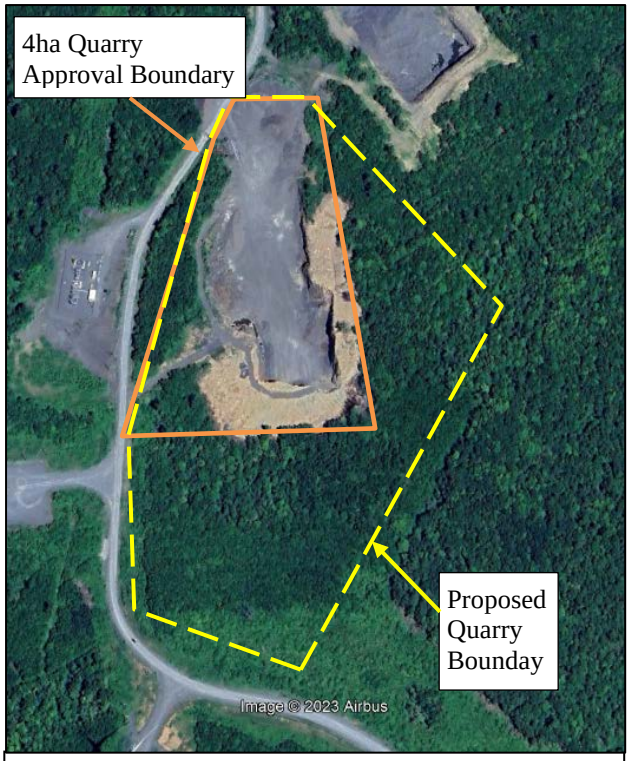


Image 2: Potential Pit Boundaries at full development (approximate)

This report outlines the measures taken and information collected and provides the results following completion of the actions, as prescribed. Information relevant to this project is contained in the Appendices.

1.1 Property Description & Historical Land Use

As noted on Image 1, the property, located in the rural area of Nova Scotia, is surrounded by woodlands and work areas related to windfarm development. The Quarry currently spans 2 PIDs, 45007903 and 45407111, encompassing a total of 9.6 acres (3.89 hectares). When completed, the Quarry is anticipated to cover a maximum area of 25 acres (10.1 hectares) and will include a small portion of PID 45407095 to the south.

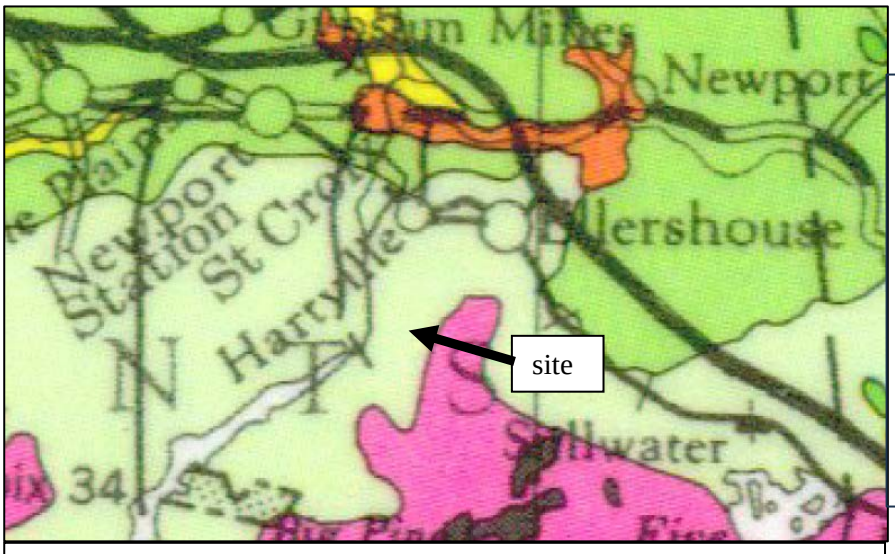
Surficial aerials indicate this area is forested with no residential or agricultural activity in the immediate area. A review of aerial photos obtained from Google Earth Pro indicates the Quarry was started sometime between the years 2004 and 2010.

2.0 GEOLOGICAL SETTING

Information relating to the geology of the area can be used to provide an estimate of the ability of water or other aqueous material to filter into and migrate through the soil and bedrock. The following information is provided to assist the reader in understanding potential groundwater migration pathways on the surface and in the subsurface. Subsequent sections describe the topography and lithology of the property.

2.1 Surficial Geology

According to the map, *The Surficial Geology of Nova Scotia* (Stea, Conley and Brown, 1992), the soils in this area are described as glacial till with a stony, sandy matrix. Surface topography tends to be flat to rolling with a till thickness of 2-20m and a drumlin thickness of 4-30m (Graphic 1).

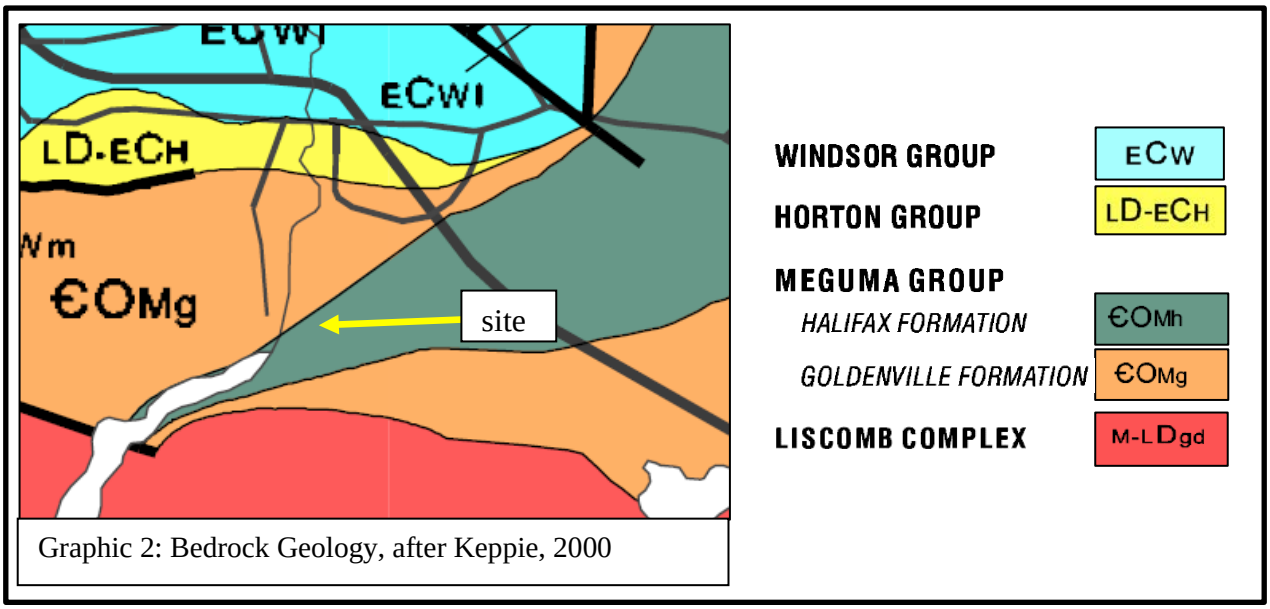


Graphic 1: Surficial Geology

Graphic 1, obtained from Stea, Conley and Brown, 1992, provides a description of the surficial sediments within the property and surrounding area.

2.2 Bedrock Geology

The *Bedrock Geology of the Province of Nova Scotia* map (Keppie, 2000) indicates the site occurs in the vicinity of the contact between the Halifax and Goldenville Formations. While the Halifax Formation consists of slate and siltstone, with minor sandstone, the Goldenville is made up of sandstone turbidites and slate; both Formations have, in places been metamorphosed to schist (Graphic 2).



Graphic 2: Bedrock Geology, after Keppie, 2000

2.3 Topography

2.3.2 Local Topography

Regional and local topography are important in determination of both surface and groundwater drainage. Consequently, the following section provides an indication of the overall drainage for the area. Locally, the Quarry lies between the 95 and 135m elevation contours (amsl) with a surface that displays an overall slope to the north and drainage that mirrors the topography as noted on Image 3.

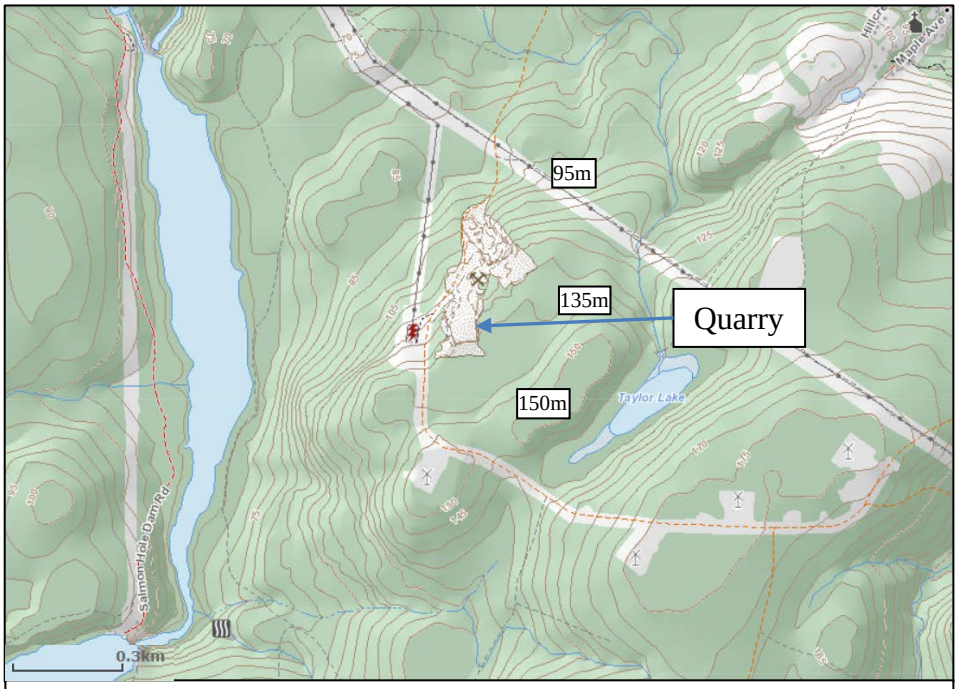


Image 3: Local Topography in area of existing Quarry

2.3.1 Lidar

In 2018, the area was mapped using LIght Detection And Ranging or LIDAR. This system uses mutliple images to produce a shaded relief map to construct a high resolution image of the surface topography as it exists beneath the vegetation.

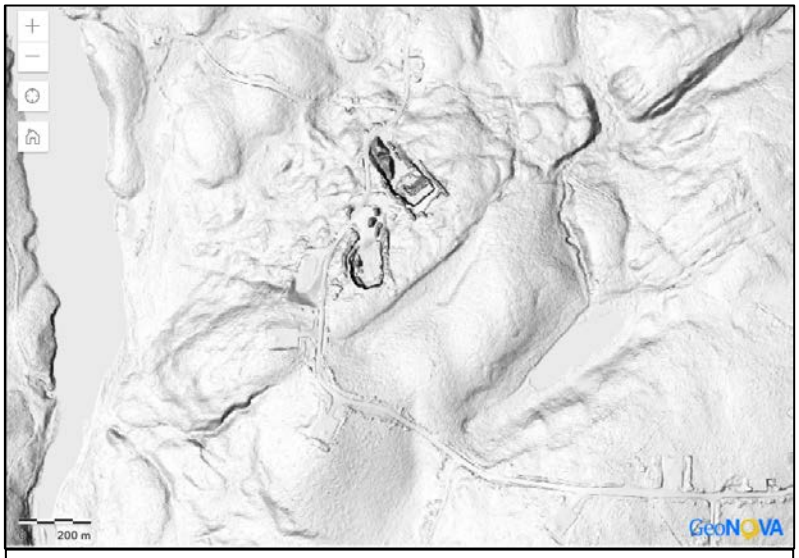


Image 4: Local Topography

2.3.1 Site Elevation

A cross section of the area of interest, provided by Image 5, shows a marked difference in elevation along the path demonstrated by A – A'.

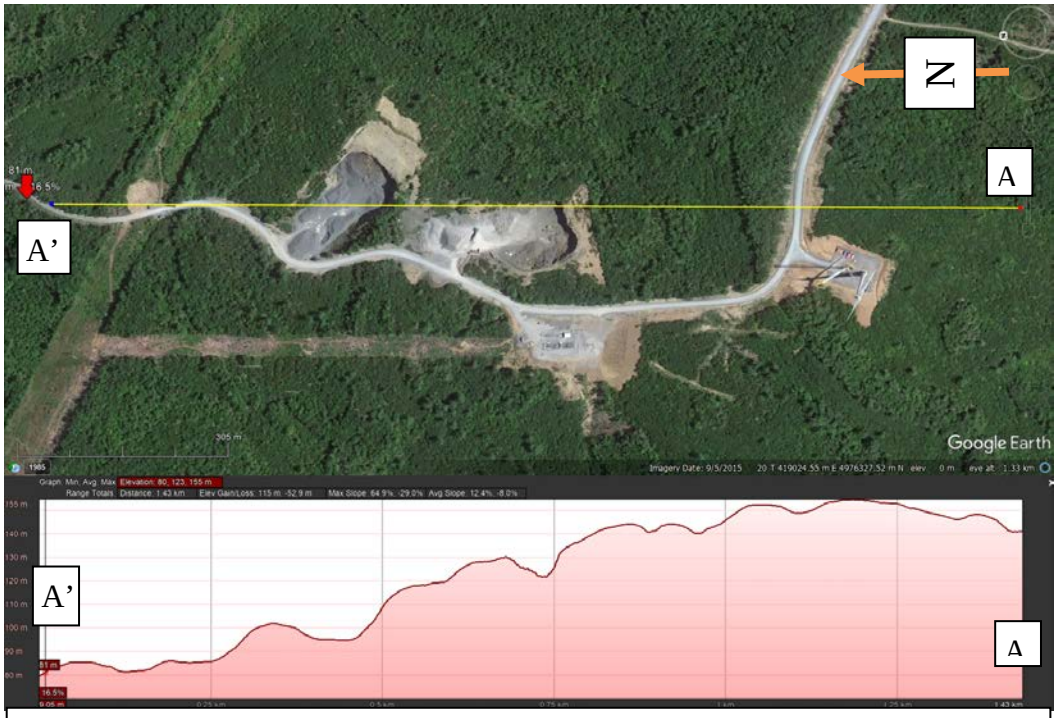


Image 5: Elevation data along pathway A' - A

2.4 Watershed Delineation

2.4.1 Regional Drainage / Watershed

Watersheds are defined as the area that captures and feeds rainfall into a single river system where the boundaries may be defined by a ridge of land dividing two areas that are drained by different river systems.

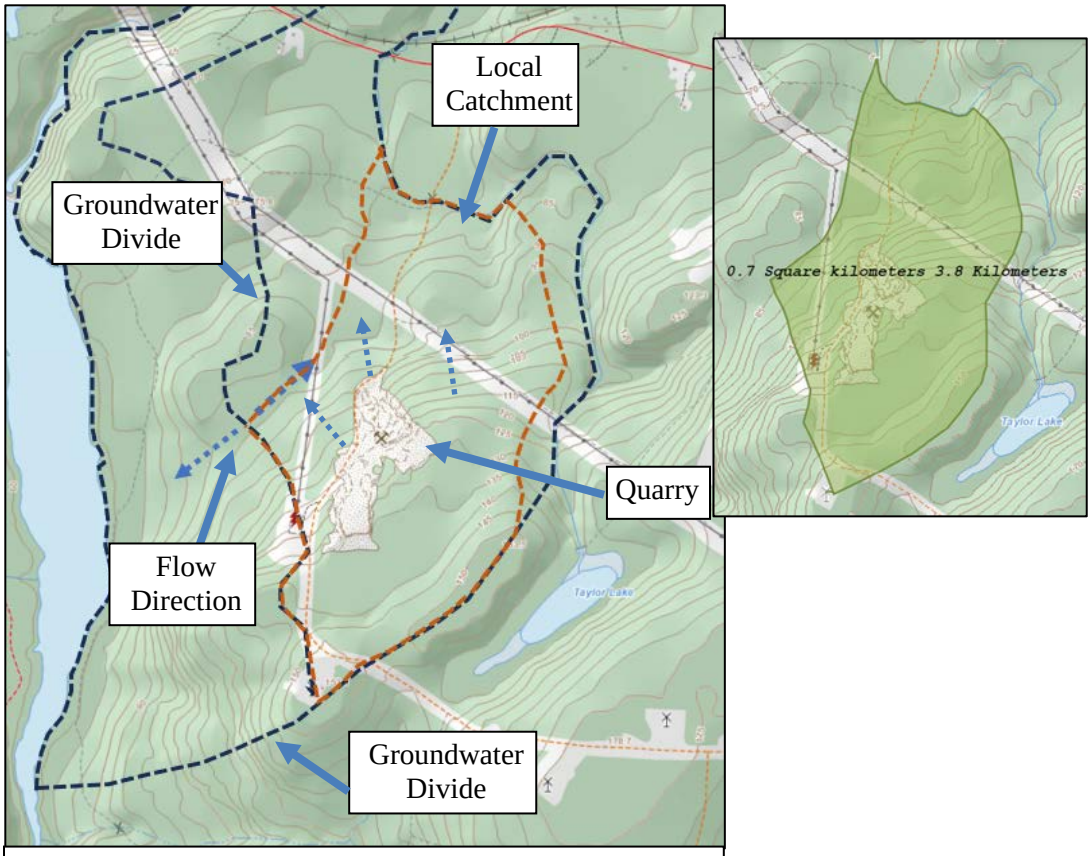


Image 5: Local Groundwater Boundaries

The study area lies the St. Croix River Watershed, in an area that is dominated by the Panuke Lake system. While the St. Croix River Watershed covers 74,671.32 hectares (746.7132 km^2), the Quarry lies within a local catchment area of 70 hectares (0.7 km^2).

3.0 WATER BALANCE

It is proposed to expand the existing, 3.9 hectare Quarry to the south and east, resulting in a maximum area of approximately 10.1 hectares (Image 2). The proposed expansion is intended to provide additional aggregate reserves to support the long-term sustainability of the site. It is anticipated that the rate of development will progress gradually, at a rate consistent with aggregate demand in the area and growth, of the local market. Note, this study does not include an evaluation of the quarry that exist to the north. To undertake a water balance assessment of the study area, three scenarios were examined:

1. existing (baseline) conditions;
2. quarry - full development; and
3. reclaimed quarry.

Existing conditions cover an area of approximately 3.9 hectares, which includes the Quarry highwall, stockpile areas, and portions of the site access road with full development considered to encompass 10.1 hectares. In contrast, reclamation conditions are considered representative of the site following removal of all construction equipment and buildings, re-contouring of the property, and reintroduction of vegetative cover.

It is anticipated, progressive reclamation will occur throughout the development and operational phases of the quarry, as per the established Reclamation Plan for the site. As the site is developed and aggregate reserves are depleted, disturbed areas no longer required for aggregate production or site related activities will be progressively rehabilitated. This may include using grubbing material originating onsite for site grading, slope construction, and re-vegetation efforts. Temporary stockpiling, re-use of overburden, and establishment of vegetation is anticipated to simulate pre-development conditions. Areas that have been progressively rehabilitated would be expected to have reduced surface water runoff and increased infiltration, reflective of natural conditions in the area. This water balance assessment does not account for progressive reclamation, so the development scenarios presented represent the worst-case for each scenario with respect to runoff quantity.

Due to the range of infiltration rates possible, the water balance was completed for two (2) infiltration Scenarios. These scenarios represent the range of possible outcomes from existing/natural infiltration to 100% impervious (worst case, no infiltration).

3.1 Climate Data

Environment Canada collects climate data from various stations throughout the province of Nova Scotia. Preciquarryation and temperature data were available for the years between 1971 to 2000 from the Salmon Hole Station (Climate ID 8205000), which is located approximately 600m southwest of the Quarry. Lake evaporation data was obtained from the Truro station (Climate ID 8205988) for the years 1981 to 2010. Located approximately 74 km northeast of the Quarry, it is the closest climate station to the Project Site that collects this data.

Evapotranspiration rates were calculated using the Hamon equation (1961), which is based on average monthly temperatures and daylight hours. Information was obtained for the site using the Sunrise and Sunset Calculator (https://www.timeanddate.com/sun) and from the Salmon Hole climate station (https://climatedata.ca).

Table 3.1 - Climate Data

	1981 – 2010												Total
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**(mm/yr)**
Temperature (°C) [1]	-6.4	-5.1	-1.1	4.9	10.5	15.8	19.5	19.1	14.4	8.9	3.8	-2.2	-
Precipitation (mm/mon)	138.7	100.1	122.8	112.5	127.4	90.1	86.1	85.7	114.6	118.3	151.5	145.1	**1392.9**
Lake Evaporation (mm/mon) [2]	0	0	0	0	89.9	102	117.8	96.1	69	40.3	0	0	**515.1**
PET (mm/mon) [3]	0.0	0.0	0.0	37.8	61.6	86.7	109.2	98.4	64.1	41.1	24.9	0.0	**523.7**

1 average, monthly temperature
2 obtained from the closest climate center, Truro, NS
3 PET=0 when Temperature < 0 (Lu et al., 2005)

For monthly, average temperatures less than 0^{o} C, which corresponds to the months of January, February, March and December, potential evapotranspiration rates were set to zero (Lu et al., 2005), resulting in a minimal potential for evapotranspiration. As noted in the previous table, the total potential evapotranspiration employed for this water balance is 523.7 mm/year.

3.2 Infiltration Factor

Water storage/infiltration has been estimated using the infiltration factors taken from Table 3.1 of the Ontario Ministry of Environment, Conservation and Parks (OMECP) Stormwater Management Planning and Design Manual (2003). Calculations using the OMECP Table 3.1 account for slope, soil types and vegetation cover when estimating the water holding capacity for an area. The slope, soil type, and vegetative cover within the quarry catchment area were used to determine the appropriate infiltration factor.

3.3 Evaporation and Evapotranspiration Potential

Evaporation describes the process of the return of moisture to the atmosphere from open water and land surfaces. Evaporation from plant surfaces is referred to as evapotranspiration. The magnitude of evaporation and evapotranspiration over time is a function of the climate, soil, and vegetation in the area. Evaporation rates tend to peak in the summer months when temperatures are the highest, daylight hours are the longest, sun intensity is greatest, and the growing season is at its peak.

Lake evaporation (LE) is the amount of evaporation from an open body of water. In Atlantic Canada, the lake evaporation rate is greater than the standard evaporation rate because of the constant availability of water. Based on aerial photos and available mapping, five wetland areas were identified by Envirosphere in the general vicinity during their July 14, 2023 site investigation, four of which are located within the quarry catchment area (Figure A-2).

Table 3.2 – Wetlands Within Quarry Catchment Area

Name	Type	Area (ha)
WL1	Treed basin / drainageway swamp	0.16
WL2	Treed drainageway swamp	0.04
WL3	Treed drainageway swamp	<0.01
WL4	Treed drainageway / riparian swamp	0.78
	Total	**0.98**

Taking this information into consideration, an area of roughly 0.98 hectares was identified as either treed drainageway or riparian swamp, within the proposed quarry catchment area.

3.4 Study Parameters

A review of the topographic data reveals the quarry lies within a catchment area of 70.0 hectares that also encompasses roughly 0.98 hectares of wetland. This catchment area was considered to have the following features.

- Topography – flat around the quarry, with the surrounding area determined to be hilly.
- Cover – woodland and roads.
- Soil – sandy loam derived from glacial deposits.

Two scenarios were assessed for the infiltration conditions during existing (assumed 4 hectares) and full quarry development (10.1 hectares) conditions:

1. an impervious quarry floor with no infiltration occurring; and
2. a pervious quarry floor consisting of similar infiltration to existing surficial soils.

These two scenarios provide a range of potential outcomes resulting from quarry development. Note, the lithology at the base of the quarry is composed of fractured bedrock and by assuming an impermeable boundary this will provide a worst case scenario for infiltration. It is also relevant to note, the quarry is not anticipated to extend below the water table.

Comparisons for infiltration and runoff were provided for the following scenarios:

- Impervious Base
  - Existing Conditions
  - Full Development
- Pervious Base
  - Existing Conditions
  - Full Development
  - Full Reclamation

Reclamation conditions are expected to be similar to pre-development conditions, with the exception that, in the area where the quarry was located, the topography is assumed to be flat.

Runoff volumes for this water balance were assumed to equal the total precipitation less the potential evapotranspiration, lake evaporation, and infiltration. Although infiltration affects groundwater recharge and its contribution to surface water resources as baseflow, groundwater recharge was not included in this Water Balance Assessment.

3.5 Analysis/Results

Table 2 summarizes the details of the Water Balance and provides a comparison regarding changes to Infiltration and Runoff for the Catchment Area as development of the quarry progresses. It is assumed that wetlands that currently exist within the quarry boundaries will not be reinstated.

Table 3.2: Water Balance

Quarry	Area (ha)	Precipitation (m^3)	Lake Evaporation (m^3)	PET (m^3)	Infiltration (m^3)	Runoff (m^3)	Change in Infiltration	Change in Runoff
Impervious Base								
Existing Conditions	70.0	975,030	5,048	366,610	283,030	320,342	-	-
Full Development	70.0	975,030	5,048	366,610	289,044	314,328	2.1%	-1.9%
Pervious Base								
Existing Conditions	70.0	975,030	5,048	366,610	295,201	308,171	-	-
Full Development	70.0	975,030	5,048	366,610	319,774	283,598	8.3%	-8.0%
Full Reclamation	70.0	975,030	0	366,610	294,250	314,170	-0.3%	1.9%

A review of the preceding table indicates a potential increase of 2.1 to 8.3% in infiltration from existing conditions to full development (impervious vs pervious base) with a corresponding drop in runoff that varies from 1.9 to 8.0%. Upon completion of reclamation activities, the data suggests an 0.3% decrease in infiltration and an 1.9% increase in runoff.

4.0 CONCLUSIONS

An expansion of the existing quarry, located at PID 45007903, 45407111 and 45407095 in Hartville has been proposed. Currently, encompassing roughly 4 hecatres, this expansion is anticipated to cover an additional 6.1 hectares, for a total of 10.1 hectares, with the quarry boundaries extending to the south and east.

An assessment of the Water Balance of the local watershed/catchment was undertaken to assess potential impacts of the proposed quarry expansion on the local hydrologic regime. As the quarry is not expected to extend below the water table, impacts to groundwater flow patterns are not a concern. If future quarry operations are required to enter the water table, a hydrological study will be prepared to assess potential impacts to groundwater, and prior approval from NSECC will be obtained.

The methodology used for this water balance assessment is consistent with the approach used for other quarry expansions undergoing Environmental Assessment. The results of the water balance analysis may be used to form the basis of further analysis and design of surface water management infrastructure at the Quarry in the future, should it be required.

It is anticipated that conditions of any Environmental Assessment approval issued for the proposed quarry expansion will require a detailed surface water monitoring plan, groundwater monitoring plan, erosion and sediment control plan, and stormwater management plan. These items will be developed following Environmental Assessment approval for the project, as part of the subsequent Industrial Approval amendment process. The water management and monitoring plans will be used to validate the findings of the water balance assessment.

Based on the results of the water balance assessment it is anticipated that the proposed quarry expansion will have only a minor impact on the local hydrological regime. Water management and monitoring plans will be implemented as part of the Industrial Approval process to validate the findings of the water balance assessment.

5.0 LIMITATIONS

The investigation can decrease but not wholly eliminate uncertainty regarding the conclusions presented by the hydrology survey. The intent of the study is to reduce, but not eliminate, uncertainty regarding the property, given reasonable limits of time and cost.

The conclusions and recommendations of this report are based, in part, on the information provided by others. The potential exists that unexpected conditions may be encountered at the subject site in locations not specifically investigated. Should this occur, HERAA Consulting Incorporated requests they be notified in order to determine if modifications to this report are necessary.

This study is based upon the review of relevant existing information, discussions with persons knowledgeable of the subject property and the generally accepted assessment practices of our

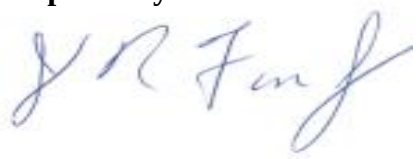
profession. The conclusions reached are based on observations, available data and the professional judgement of HERAA Consulting.

The conclusions and recommendations made in this report do not represent a legal opinion and are for the exclusive use of ALVA Construction Limited and their authorized representatives. Any use that a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. HERAA Consulting Incorporated accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. No other warranty is implied or made.

6.0 SIGNATURE

HERAA Consulting Inc.

Prepared by:



J. Russell Finley, MASc.,P.Geo., EP(CEA)
President & Senior Hydrogeologist

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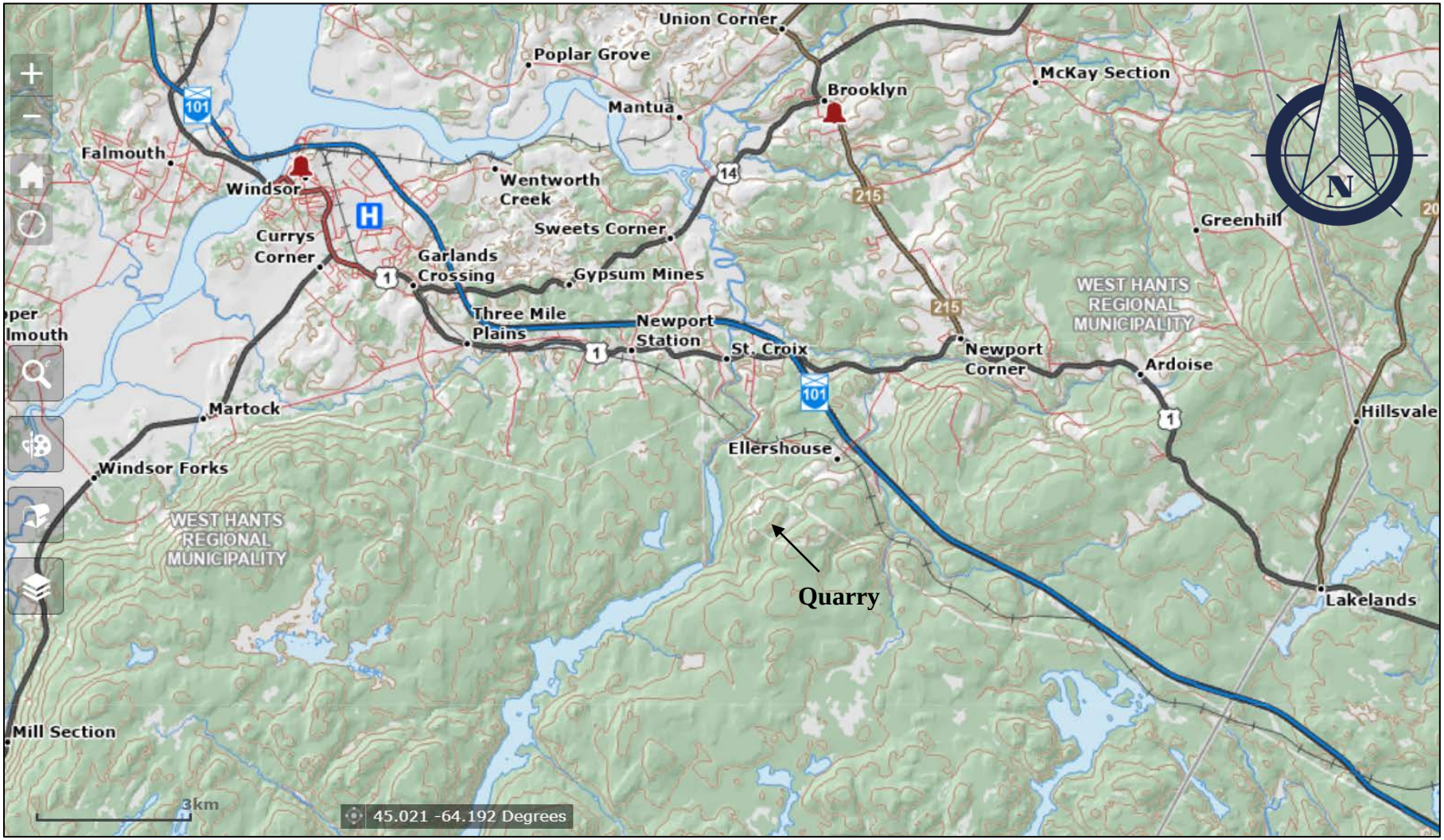
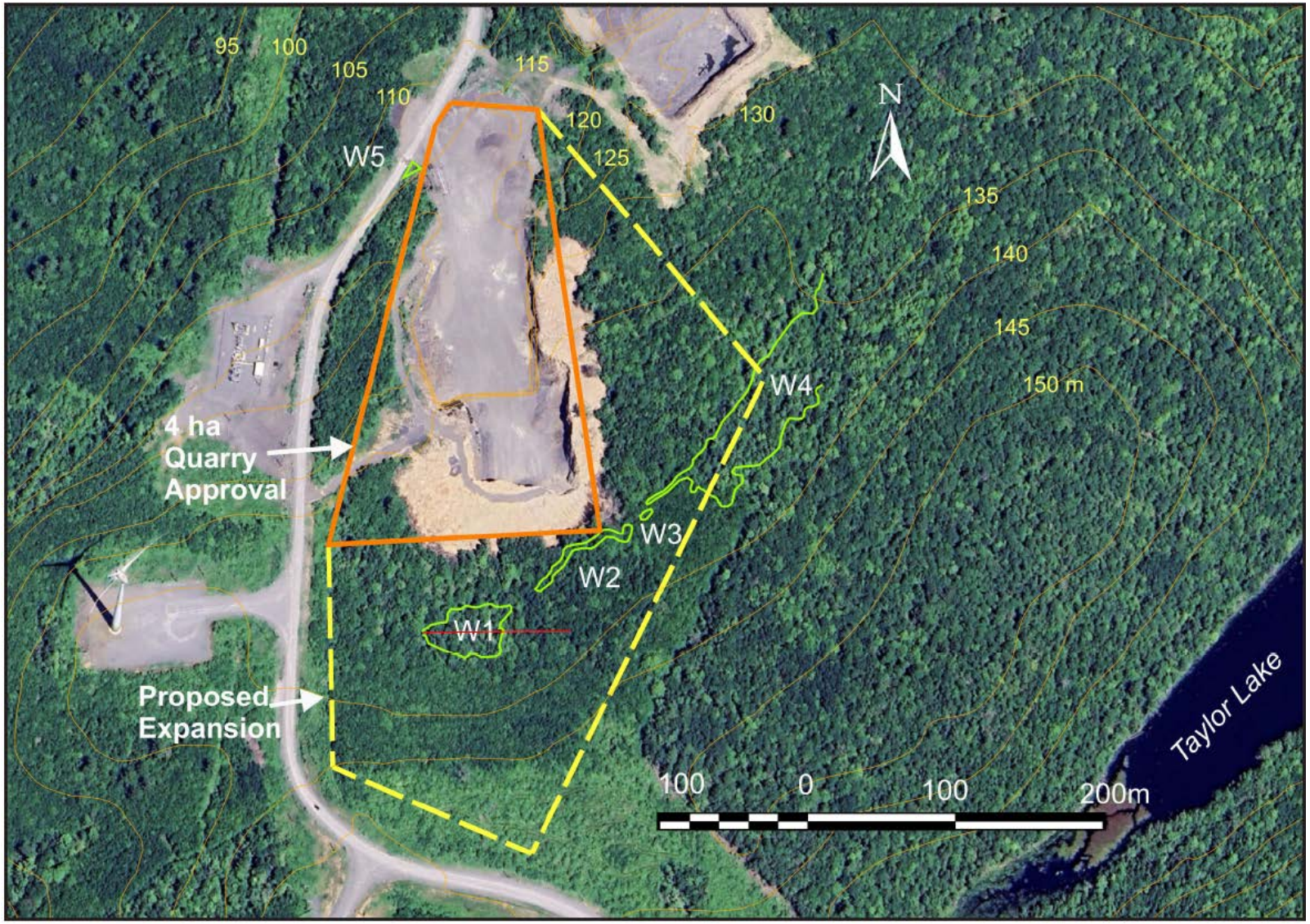
APPENDIX A

REGIONAL SITE MAP and WETLANDS



HERAA Consulting Inc.	Prepared by:	JR Finley	Scale:	As noted	Date: November 2023
	Client:	**ALVA Construction Limited**			Project Number: 23-1062
	Figure Name:	Hydrologic Study, Proposed Quarry Expansion			Figure Number: A-1



HERAA Consulting Inc.	Prepared by:	JR Finley	Scale:	As noted	Date: November 2023
	Client:	**ALVA Construction Limited**			Project Number: 23-1062
	Figure Name:	Hydrologic Study, Proposed Quarry Expansion			Figure Number: A-2

APPENDIX B

SITE PHOTOGRAPHS

Photo B-1 – Existing pit, note groundwater not encountered

Photo B - 2 – Existing pit, note shallow bedrock

Photo B-3 – Surficial sediments

Photo B - 4 – Surficial sediments

Photo B - 5 – Stockpiled product

Photo B - 6 – Wetland conditions observed.

APPENDIX C

CALCULATIONS

Infiltration Factor

							Topography					Cover				Soil				
			Total Catchment Area (m^2)	Total Quarry Area in Catchment (m^2)	Open Water Bodies & Wetlands (m^2)	Land Area (m^2)	Quarry (flat land) (m^2)	Other Slope (hilly) (m^2)	Area Ratio* Infiltration Factor (m^2)	Quarry (m^2)	Roads (Imprevious) (m^2)	Cultivated Land (m^2)	Forested (partial woodland) (m^2)	Area Ratio* Infiltration Factor	Quarry (m^2)	Roads (Imprevious) (m^2)	Sandy Loam Soil (m^2)	Area Ratio* Infiltration Factor	Total Infiltration Factor
Catchment 1	Existing Conditions	Impervious Quarry Flr	700000	40000	9800	690200	40,000	660,000	0.11	40,000	3,000	0	647,200	0.15	40000	3,000	647,200	0.15	0.40
Catchment 1	Full Development	Impervious Quarry Flr	700000	101000	9800	690200	101,000	599,000	0.13	101,000	3,000	0	586,200	0.14	101000	3,000	586,200	0.14	0.41
Catchment 1	Existing Conditions	Pervious Quarry Flr	700000	40000	9800	690200	40,000	660,000	0.11	40,000	3,000	0	647,200	0.15	40000	3,000	647,200	0.16	0.42
Catchment 1	Full Development	Pervious Quarry Flr	700000	101000	9800	690200	101,000	599,000	0.13	101,000	3,000	0	586,200	0.14	101000	3,000	586,200	0.19	0.46
Catchment 1	Full Reclamation	Pervious Quarry Flr	700000	101000	0	700000	101,000	599,000	0.13	101,000	3,000	0	596,000	0.14	101000	3,000	596,000	0.15	0.42

* Weighted Average

Infiltration Factors

Topography		**Cover**		**Soil**		**Impervious**	
Flat Land (average slope <0.6 m/km)	0.3	Cultivated Land	0.1	Tight Impervious Clay	0.1	Roads, etc.	0
Rolling Land (average slope 2.8-3.8 m/km)	0.2	Partial Woodland	0.15	Sandy Loam Soil	0.15		
Hilly Land (average slope 28-47 m/km)	0.1	Woodland	0.2	Medium combinations of clay & loam	0.2		
				Open sandy loam	0.4		

APPENDIX D
SITE PLAN AND PROPOSED EXPANSION AREA

Environmental Assessment Registration Document:
Hartville Quarry Expansion
Ellershouse, Windsor West Hants Regional Municipality
Nova Scotia

CLOSEST RESIDENCE IS LOCATED
APPROXIMATELY 1157 METRES AT
A BEARING OF N9°32'30"W

PARCEL CAW - 1
LEASED TO
C. A. WILLIAMS & SONS LTD.

LANDS OF
ATLANTIC STAR FORESTRY LTD.
P.I.D. 45007903

LANDS OF
ATLANTIC STAR FORESTRY LTD.
P.I.D. 45407111

LANDS OF
CAROL M BLANCHARD
P.I.D. 45009966

LANDS OF
ATLANTIC STAR FORESTRY LTD.
P.I.D. 45407095

QUARRY
FLOOR

EXISTING
INDUSTRIAL APPROVAL
3.988 HECTARES

PROPOSED EXPANSION AREA
AREA = 10.118 HECTARES

30.0m BUFFER

SEPARATION
DISTANCE= 151.0m

SEPARATION
DISTANCE=156.2m

WINDMILL

WINDMILL

Point Table		
Point #	Northing	Easting
11	4976483.174	419011.739
12	4976466.844	419000.448
13	4976173.126	418922.979
14	4976017.338	418924.456
15	4975955.627	419063.494
16	4976288.192	419230.084
17	4976477.840	419072.446

* NAD83 (CSRS2010) UTM Zone 20

ALVA CONSTRUCTION LTD.
P.O. Box 1193, Antigonish, Nova Scotia, B2G 2L6
(902) 863-6445 Fax: (902) 863-6446

SURVEYED BY: John MacNeill

SURVEY DATE: June 14, 2021

DRAWN BY: Ryan Morell

PROJECT TITLE

HARTVILLE QUARRY

DRAWING TITLE

PROPOSED EXPANSION AREA

DATE: March 21, 2024

SCALE : NTS

SHEET

1

APPENDIX E
CORPORATE REGISTRATION

Environmental Assessment Registration Document:
Hartville Quarry Expansion
Ellershouse, Windsor West Hants Regional Municipality
Nova Scotia

PROVINCE OF NOVA SCOTIA

CERTIFICATE OF INCORPORATION

Companies Act
Chapter 81, R.S.N.S. 1989

2244933

Number

ALVA CONSTRUCTION LIMITED

Name of Company

I hereby certify that the above-mentioned Company was this date incorporated under the Companies Act and that the company is limited.

REGISTRAR OF JOINT STOCK COMPANIES

February 22 , 1993

DATE OF INCORPORATION

628

NOVA SCOTIA
Registry of Joint Stock Companies

Electronically signed by:
Office of the Registrar of Joint Stock Companies
Date: 09 April 2024 14:53 ADT
Location: Nova Scotia, Canada
Contact: rjsc@novascotia.ca

Profile Report

Entity details

Information as of	09 April 2024
Registry ID	2244933
Business/Organization Name	ALVA CONSTRUCTION LIMITED
Incorporation Date	22 February 1993
Annual Return due Date	28 February 2025
Type	Limited Company
Status	Active
Registered Office	5600 HIGHWAY 7, ANTIGONISH, NOVA SCOTIA, B2G 2L6, CANADA
Mailing Address	P.O. BOX 1193, ANTIGONISH, NOVA SCOTIA, B2G 2L6, CANADA

Directors and Officers

Name	Position	Civic Address	Mailing Address
A.G. MACDONALD	Director	7 HARBOUR VIEW DRIVE ANTIGONISH NOVA SCOTIA B2G 0A7 CANADA	
A.G. MACDONALD	President	7 HARBOUR VIEW DRIVE ANTIGONISH NOVA SCOTIA B2G 0A7 CANADA	
ALLAN MACDONALD	Director	252 LOWER WEST RIVER RD. ANTIGONISH NOVA SCOTIA B2G 2L3 CANADA	
ALLAN MACDONALD	VICE-PRESIDENT/SECRETARY	252 LOWER WEST RIVER RD. ANTIGONISH NOVA SCOTIA B2G 2L3 CANADA	

Recognized Agent

Name	Position	Civic Address	Mailing Address
A.G. MACDONALD	Recognized Agent	7 HARBOUR VIEW DRIVE ANTIGONISH NOVA SCOTIA B2G 0A7 CANADA	PO BOX 1193 ANTIGONISH NOVA SCOTIA B2G 2L6 CANADA

NOVA SCOTIA
Registry of Joint Stock Companies

Activity

Activity	Date
Company Annual Renewal Statement	17 January 2024
Company Annual Renewal Statement	13 January 2023
Company Annual Renewal Statement	20 January 2022
Annual Statement Filed	12 January 2021
Annual Renewal	12 January 2021
Annual Statement Filed	15 January 2020
Annual Renewal	15 January 2020
Annual Statement Filed	16 January 2019
Annual Renewal	16 January 2019
Annual Renewal	18 January 2018
Filed Document	29 August 2017
Annual Statement Filed	17 January 2017
Annual Renewal	17 January 2017
Annual Renewal	15 January 2016
Annual Statement Filed	15 January 2016
Filed Document	12 August 2015
Change of Directors	10 August 2015
Annual Renewal	25 February 2015
Annual Statement Filed	24 February 2015
Annual Statement Filed	27 January 2014
Annual Renewal	27 January 2014
Annual Renewal	24 January 2013
Annual Statement Filed	10 January 2012
Annual Renewal	10 January 2012
Annual Renewal	11 January 2011
Annual Statement Filed	11 January 2011
Annual Renewal	27 January 2010
Annual Renewal	12 January 2009
Annual Renewal	21 January 2008
Filed Document	21 June 2007
Special Resolution	21 June 2007
Special Resolution	21 June 2007

Filed Document	21 June 2007
Annual Renewal	29 January 2007
Annual Renewal	28 March 2006
Special Resolution	29 July 2005
Annual Renewal	22 February 2005
Annual Renewal	27 February 2004
Annual Renewal	20 January 2003
Annual Statement Filed	20 January 2003
Annual Renewal	24 January 2002
Annual Renewal	26 February 2001
Annual Renewal	08 February 2000
Address Change	26 February 1999
Annual Statement Filed	26 February 1999
Annual Renewal	25 January 1999
Annual Renewal	26 February 1998
Annual Renewal	20 March 1997
Annual Statement Filed	19 March 1997
Filed Debenture	07 November 1996
Change of Directors	09 February 1996
Annual Report Filed	09 February 1996
Special Resolution	30 January 1996
Registered Office Change	23 February 1993
Agent Filed	23 February 1993
Registered	22 February 1993
Incorporated	22 February 1993

Related Registrations

Relationship	Name
Business Name	COLIN R. MACDONALD CONSTRUCTION

APPENDIX F
INDUSTRIAL APPROVAL

Environmental Assessment Registration Document:
Hartville Quarry Expansion
Ellershouse, Windsor West Hants Regional Municipality
Nova Scotia

NOVA SCOTIA

81 Logan Road
Bridgewater, NS
Canada B4V 3T3

902-543-4685 T
902-527-5480 F
www.novascotia.ca

Our File Number: 92100-30-KEN-2008-061091

February 22, 2019

ALVA CONSTRUCTION LIMITED
Connor MacDonald
PO BOX 1193, 5600 Locharber Rd
ANTIGONISH, NS B2G2L6

Attention: Connor MacDonald

RE: Approval for Operation - Quarry. Approval No. 2008-061091-02
PID # 45007903

Enclosed please find Approval 2008-061091-02 for Operation of the Quarry at 675 Ellershouse Rd. Ellershouse, Hants County Nova Scotia.

Strict adherence to the attached terms and conditions is imperative in order to validate this approval.

Despite the issuance of this Approval, the Approval Holder is still responsible for obtaining any other authorization which may be required to carry out the activity, including those which may be necessary under provincial, federal or municipal law.

Should you have any questions, please contact Barry Gillis, Western Region, Kentville Office at 902-543-4685.

Yours truly,

David Clarke
Inspector Specialist

NOVA SCOTIA

81 Logan Road
Bridgewater NS
Canada B4V 3T3

902-543-4685 P
902-527-5480 F
www.novascotia.ca

APPROVAL

Province of Nova Scotia
Environment Act, S.N.S. 1994-95, c.1 s.1

APPROVAL HOLDER: ALVA CONSTRUCTION LIMITED

SITE PID: 45007903

APPROVAL NO: 2008-061091-02

EXPIRY DATE: July 1, 2028

Pursuant to Part V of the *Environment Act*, S.N.S. 1994-95, c.1 s.1 as amended from time to time, approval is granted to the Approval Holder subject to the Terms and Conditions attached to and forming part of this Approval, for the following activity:

Industrial - Construction - Quarry

Administrator: David Clarke

Effective Date: July 1, 2018

The Minister's powers and responsibilities under the Act with respect to this Approval have been delegated to the Administrator named above. Therefore, any information or notifications required to be provided to the Minister under this Approval can be provided to the Administrator unless otherwise advised in writing.

TERMS AND CONDITIONS OF APPROVAL

Nova Scotia Environment

Approval Holder: ALVA CONSTRUCTION LIMITED

Project: Hartville Road Quarry

Site:

PID	Civic #	Street Name	Street Type	Community	County
45007903	675	ELLERSHOUSE	RD.	ELLERSHOUSE	HANTS COUNTY

Approval No: 2008-061091-02

File No: 92100-30-KEN-2008-061091

Reference Documents

- Application submitted June 20, 2018 and attachments.
- Industrial Approval, Sheet 1, by Alva Construction. Surveyed by JOhn MacNeill, survey date December 7, 2018
- Alva Construction Ltd. - Process Description for Alva Construction Ltd.'s Hartville Quarry, by Connor MacDonald
- Howard Little Excavating Limited - Estimate Rehabilitation Hartville Quarry Se[ptember 24, 2018

1. Definitions

a. Abandonment means cessation of production of aggregate for a period of 36 months or notification of abandonment has been received by the Department in accordance with the Approval and Notification Procedures Regulations.

b. Act means Environment Act, Chapter 1 of the Acts of 1994-95, and includes, unless the context otherwise requires, all regulations made pursuant to the Act.

c. Active Area means the area occupied by the working face, disturbed areas, rehabilitated areas, any structure, processing facility, pollution abatement system, settling pond, aggregate stockpile and/or overburden associated with the pit and

pit activities. The active area excludes the scale, scale house, and access roads.

d. Administrator means a person appointed by the Minister for the purpose of this Act, and includes an acting administrator.

e. Approval means an Approval issued pursuant to this Act with respect to an activity.

f. Department means the Department of Environment, and the contact for the Department for this approval is:
Nova Scotia Environment
Western Region, Kentville Office
136 Exhibition Street
Kentville, Nova Scotia B4N 4E5

Phone: (902) 679-6086
Fax: (902) 679-6186

g. Disturbed Area means an area in unnatural state, affected by human activity associated with the operation of the pit.

h. Extension means an increase in size, volume or other physical dimensions of an activity such that the increase may cause an adverse effect if not properly mitigated.

i. Minister means the Minister of Environment and includes any person appointed as a designate of the Minister.

j. Modification means a change to an activity that may cause an adverse effect if not properly mitigated and includes, but is not limited to, the expansion of the same process, addition of product lines and replacement of equipment with different technology other than that presently in use.

2. Scope

a. This Approval (the Approval) relates to the Approval Holder(s) and their application and all documentation submitted to the Department prior to the issuance of this approval for the Quarry situated at or near Hartville Road Quarry.

3. General

a. The Approval Holder(s) shall construct, operate and reclaim the Facility in accordance with the following provisions:

i. Environment Act S.N.S. 1994-1995, c.1, s.1 as amended from time to time. Any Regulations or Standard adopted by the Department, as amended from time to time, which includes but is not limited to the following:

Nova Scotia Pit And Quarry Guidelines

ii. Nova Scotia Environment and Labour Pit and Quarry Guidelines, 2003, or latest revision unless otherwise varied by condition of approval

b. No authority is granted by this Approval to enable the Approval Holder(s) to construct or operate the Facility on lands which are not in the control or ownership of the Approval Holder(s). It is the responsibility of the Approval Holder(s) to ensure that such a contravention does not occur.

c. If there is a discrepancy between the reference documents and the terms and conditions of this Approval, the terms and conditions of this Approval shall apply.

d. Any request for renewal or extension of this Approval is to be made in writing, to the Department, at least ninety (90) days prior to the Approval expiry.

i. If the Minister cancels or suspends this Approval, the Approval Holder(s) remains subject to the penalty provisions of the Act and regulations

e. The Approval Holder(s) shall notify the Department prior to any proposed extensions or modifications to the Facility, including, but not limited to, the active area, operating area, processing changes or waste disposal practices which are not granted under this Approval. An amendment to this Approval may be required before implementing any change.

f. The Approval Holder(s) shall immediately notify the Department of any incidents of non-compliance with this Approval.

g. The Approval Holder(s) shall bear all expenses incurred in carrying out the environmental monitoring required under the terms and conditions of this Approval.

h. Unless specified otherwise in this Approval, all samples required to be collected by this Approval shall be collected, preserved and analysed, by qualified personnel, in accordance with recognized industry standards and procedures.

i. Unless written authorization is received otherwise from the Minister, all samples required by this Approval shall be analysed by a laboratory that meets the requirements of the Department's Policy on Acceptable Certification of Laboratories as amended from time to time.

j. The Approval Holder(s) shall ensure that this Approval, or a copy, is kept on Site at all times and that personnel directly involved in the Facility operation are made fully aware of the terms and conditions which pertain to this Approval.

k. Upon any changes to the Registry of Joint Stock Companies information, the Approval Holder(s) shall provide a copy to the Department.

4. Sound Levels

a. Sound levels measured at the Site property boundaries shall not exceed the following equivalent sound levels (Leq):

   i. 65 dBA 0700-1900 hours

   ii. 60 dBA 1900-2300 hours

   iii. 55 dBA 2300-0700 hours

b. Monitoring of sound levels shall be conducted at the request of the Department. The location of the monitoring station(s) for sound will be established by a qualified person retained by the Approval Holder(s) and submitted to the Department for approval, this may include point(s) beyond the property boundary of the Site.

5. Separation Distances

a. The Approval Holder(s) shall not conduct the designated activity within the following separation distances unless otherwise exempted or varied by conditions of this approval:

   i. 30 m of the boundary of a public or common highway

   ii. 30 m of the bank or ordinary high water mark of any watercourse or wetland

   iii. 30 m of the property boundary that does not form part of the Site Active Area

b. The Approval Holder(s) shall not blast within the following separation distances unless the Approval Holder(s) has obtained written letters of permission from the property owner of the structure on or before the date of Approval:

   i. 800 m from the foundation or base of a structure located off site. This shall not apply to structures which are placed within the 800 metre separation distance following the date of which an application for approval is received from the Approval Holder(s)

6. Particulate Emissions (Dust)

a. Particulate emissions shall not contribute to an ambient concentration of total suspended particulate matter that exceed the following limits (in micrograms per cubic metre of air) at or beyond the Site property boundaries:

   i. Daily Average (24 hr.) 120 µg/m3

   ii. Annual Geometric Mean 70 µg/m3

b. The use of oil as a dust suppressant is prohibited.

c. Monitoring of ambient total suspended particulate matter shall be conducted at the request of the Department. The location of the monitoring station(s) for suspended particulate matter will be established by a qualified person retained by the Approval Holder(s) and submitted to the Department for approval; this may include point(s) beyond the property boundary of the Site.

d. When requested, ambient total suspended particulate matter shall be measured in accordance with EPA standard; EPA/625/R-96/010a; Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 shall be done using a High Volume (HV) Sampler.

7. Surface Water

a. The Site shall be developed and maintained to prevent surface water contaminants from being discharged into a watercourse, wetland, water resource, or beyond the property boundary, in excess of the following criteria:

i. Total Suspended Solids, Clear Flows (Normal Background Conditions):

(a) Maximum increase of 25 mg/l from background levels for any short term exposure (24 hour or less);

(b) Maximum average increase of 5 mg/l from background levels for longer term exposure (inputs lasting between 24 hours and 30 days).

ii. Total Suspended Solids, High Flow (Spring Freshets and Storm Events):

(a) Maximum increase of 25 mg/l from background levels at any time when background levels are between 25 mg/l and 250 mg/l.

(b) Maximum increase of 10% over background levels when background is >250 mg/l.

iii. pH (Outfall):

(a) Maximum 5 to 9 in grab sample;

(b) Maximum 6 to 9 as a Monthly Arithmetic Mean.

b. The Approval Holder(s) shall ensure surface water is monitored at the locations and frequencies listed in the Surface Water Monitoring Location and Frequency table.

c. Erosion and sedimentation control devices shall be installed prior to construction at the Site and shall remain in place and be maintained until disturbed areas are stabilized.

d. The Department reserves the right to require modifications including, but not limited to, monitoring locations, monitoring frequency, contaminants of concern,

and surface water criteria.

e. No authority is granted by this Approval to enable the Approval Holder(s) to discharge surface water onto adjoining lands without the authorization of the affected landowner(s). It is the responsibility of the Approval Holder(s) to ensure authorizations are current and valid.

f. The Approval Holder(s) shall immediately contact the Department should sulphide bearing material be encountered on the Site.

8. Groundwater

a. The Approval Holder(s) shall replace at their expense any water supply which has been lost or damaged as a result of extracting aggregate.

b. The Approval Holder(s) shall notify the Department prior to excavating below the water table. An amendment to this approval and/or written authorization from the Minister may be required before excavating below the water table.

c. If so directed by the Department, the Approval Holder(s) shall be required to prepare and implement a groundwater monitoring program.

9. Blasting

i. The Approval Holder(s) shall have a technical blast design prepared by a qualified person which ensures the ground vibration and air concussion limits in this Approval can be achieved

ii. At the request of the Department, the Approval Holder(s) shall submit a copy of the blast design

iii. At the direction of the Department, the Approval Holder(s) shall modify or cease blasting

a. The Approval Holder(s) shall conduct a pre-blast survey of all structures within 800 metres of the point of blast including a water quality analysis of any wells serving these structures. The survey shall be conducted in accordance with the Department's "Procedure For Conducting a Pre-Blast Survey" and the results of this survey sent to the Department prior to blasting on the Site. Additional water quality parameters may be required by the Department staff.

b. The Approval Holder(s) shall call the nearest weather office, to assess and record the climatic conditions prior to conducting any blasting. No blasting will be permitted if thermal inversion conditions are anticipated at the time of the proposed blast.

c. No blasting shall occur on Sunday, on a statutory holiday prescribed by the Province, or on any day between 1800 and 0800 hours.

d. The Approval Holder(s) shall ensure that all blasts are monitored for concussion and ground vibration to ensure that the limits in the Blasting Limits table are not exceeded.

e. The monitoring station for blasting shall be as indicated in the Blasting Limits table. Additional monitoring stations for blasting may be specified as required by the Department.

i. The Approval Holder(s) shall submit a record of individual blast results if so directed by the Department

10. Reporting

a. The Approval Holder(s) shall provide an annual report summarizing the following information, as required by the terms and conditions of this Approval, for each calendar year:

i. An annual summary of results of blast monitoring

ii. An annual summary of any surface water discharges from the Site. If there were no discharges from the Site, then an indication of this shall suffice.

b. The annual report described herein shall be submitted to the Department on or before April 1 of the following year.

11. Reclamation

a. The reclamation plan (rehabilitation plan) shall be revised and updated every 1095 days (three years), starting on April 1, 2022, and submitted to the Department for review. The reclamation plan shall include the estimated total cost for labour, equipment, supplies, and services of a third party contractor to undertake the following activities:

i. Surface contouring

ii. Establishing proper drainage

iii. Re-vegetation work

iv. Any work necessary to reclaim the Site

b. The Approval Holder(s) shall post a reclamation security which shall be calculated using the reclamation plan and factors listed above. The reclamation security shall be revised every three years in accordance with the revised reclamation plan.

c. The reclamation security shall be posted in a form and value which is acceptable to the Department. In no case shall the value be less than $6250 per hectare.

d. The Approval Holder(s) shall reclaim the Site within twelve (12) months of abandonment and in accordance with the latest reclamation plan submitted by the Approval Holder unless an alternate time frame is provided by the Department.

e. The Department shall release the security to the Approval Holder(s) after final reclamation of the Site has been completed to the satisfaction of the Minister. The Approval Holder(s) shall notify the Department when reclamation has been completed.

f. The Approval Holder(s) shall ensure that any security posted for reclamation be kept valid for the term of the Approval. The expiry date of the security shall be automatically renewed or coincide with the expiry date of the Approval.

12. Site Specific Conditions

a. The boundaries of the Facility will be adequately marked, cut out and/or clear of new growth. Permanent visible markers shall be placed at changes in direction and be no more than 100 metres between markers along the Facility boundary.

b. The Approval Holder(s) shall be required to establish a Community Liaison Committee (CLC) at the direction of the Department.

c. Refueling and vehicle maintenance shall only be carried out in a designated refueling area, where conditions will allow the containment of any accidental spills.

d. The surface of the refueling area shall be comprised of low permeability material and shall be sloped or bermed in such a way that spills will be captured prior to encountering a watercourse or water resource.

Surface Water Monitoring Locations and Frequency	
Monitoring Location	**Monitoring Frequency**
runoff leaving Site	any discharge events

Blasting Limits			
Parameters	**Maximum**	**Monitoring Frequency**	**Monitoring Station**
Concussion (Air Blast)	128 dBL	Every Blast	Within 7 m of the nearest structure not located on the Site
Ground Vibration	0.5 in/sec (12.5 mm/s)	Every Blast	Below grade or less than 1 m above grade in any part of the nearest structure not located on the Site

APPENDIX G
ROCK SULPHUR ANALYSIS

Environmental Assessment Registration Document:
Hartville Quarry Expansion
Ellershouse, Windsor West Hants Regional Municipality
Nova Scotia

DALHOUSIE UNIVERSITY
Inspiring Minds

Minerals Engineering Laboratory

Dalhousie University
1360 Barrington Street
5273 DaCosta Row
Chemical Engineering Bldg. Rm. 3305
PO Box 15000, Halifax, NS
B3H 4R2

minerals.engineering.dal.ca
Tel: 902.497.3958
Email: mec@dal.ca

12-Apr-24

Envirosphere Consultants Ltd.
PO 2906 Unit 5 - 120 Morison Dr.
Windsor, NS
B0N 2T0
Atten: Sean Timpa

Re: Results of analysis on submitted samples.
Acid producing potential based on total sulphur, or sulphide sulphur content if available.

Sample	Wt. % S(Total)	kg/t Acid Producing Potential
AHQ-1	0.020	0.62
AHQ-2	0.038	1.17
AHQ-3	0.021	0.63

Reference Sample	Wt. % S(Total)
KZK-1 (0.80% Sulphur)	0.798

Daniel Chevalier, MASc
Manager, Minerals Engineering Laboratory

APPENDIX H
PUBLIC CONSULTATION DOCUMENTATION

Environmental Assessment Registration Document:
Hartville Quarry Expansion
Ellershouse, Windsor West Hants Regional Municipality
Nova Scotia

Hartville Quarry Environmental Assessment - Stakeholder Engagement Summary

as of April 18th, 2024

Stakeholder	Description of Engagement	Summary of Engagement	Concerns Identified	Concerns Addressed
Glooscap First Nation Mr.	April 3rd, 2024 - Early Engagement Letter, and emailed additional information.	• Early engagement letter, including brief description of project and anticipated timeline, and offer to discuss the project. • No response received.	• No concerns received to date	N/A
	April 23rd, 2024 Notification Letter – sent via email	• Notification letter, including EA registration date, copy of draft public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss.		
Annapolis Valley First Nation	April 3rd, 2024 - Early Engagement Letter, and emailed additional information.	• Early engagement letter, including brief description of project and anticipated timeline, and offer to discuss the project. • No response received.	• No concerns received to date	N/A
	April 23rd, 2024 Notification Letter – sent via email	• Notification letter, including EA registration date, copy of draft public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss.		
Kwilmu'kw Maw-klusuaqn Negotiation Office	April 3rd, 2024 - Early Engagement Letter, and emailed additional information.	• Early engagement letter, including brief description of project and anticipated timeline, and offer to discuss the project. • No response received.	• No concerns received to date	N/A
	April 23rd, 2024 Notification Letter – sent via email	• Notification letter, including EA registration date, copy of draft public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss.		
Native Council of Nova Scotia	April 3rd, 2024 - Early Engagement Letter, and emailed additional information.	• Early engagement letter, including brief description of project and anticipated timeline, and offer to discuss the project. • asked to see a copy of the archaeological study done for the Hartville Quarry.	• No concerns received to date	N/A
	April 23rd, 2024 Notification Letter – sent via email	• Notification letter, including EA registration date, copy of draft public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss.		
Office of Aboriginal Affairs	April 3rd, 2024 - Early Engagement Letter, and emailed additional information.	• Early engagement letter, including brief description of project and anticipated timeline, and offer to discuss the project. • No response received.	• No concerns received to date	N/A
	April 23rd,2024 Notification Letter – sent via email	•Notification letter, including EA registration date, copy of draft public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss.		
Local Community - Elected Officials	April 3rd, 2024 - Early Engagement Letter, and emailed additional information.	• Early engagement letter, including brief description of project and anticipated timeline, and offer to discuss the project • Offered to meet to discuss project in greater detail.	• No concerns received to date	N/A
	April 23rd,2024 Notification Letter – sent via email	• Notification letter, including EA registration date, copy of draft public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss		

Local Community - Elected Officials - Mayor of West Hants Regional Municipality Councilor - District 3 Councilor - District 4 Councilor District 5	April 3rd, 2024 - Early Engagement Letter	• Early engagement letter, including brief description of project and anticipated timeline, and offer to discuss the project. • Offered to meet to discuss project in greater detail.	• The use of jake brakes when coming down to intersection of Hartville Rd and Hwy 1.	N/A
	April 17th, 2024 - Meeting	• provided general information on the company and the quarries Alva operates around the province and in the Maritimes. • Reviewed the EA process, community engagement requirements, and steps Alva will take to solicit public input. • Provided background information on the existing quarry, and the scope of biophysical assessment and archaeology studies completed as part of the EA process. • Extensive discussion about blasting surrounding the neighboring houses and wind turbines. • Questions discussed included: If the local Mi'kmaq communities have been consulted, proximity to residences in the immediate area, important wildlife in the area (i.e. wood turtles or moose present), if Alva is interested in selling aggregate to the public, use of Jake brakes on Hartville Rd, any affects on the surrounding water bodies/ courses in the area, any risk of wild fires from blasting/ heavy machinery, water drainage from the quarry, maintenance to access road, and if Alva would be interested in having a public meeting with key members of the community of Ellershouse if they are interested in having one. • All parties agreed that there have been no local major concerns regarding the operation of the Hartville Quarry and they do not anticipate any concerns about expansion.		
	April 23, 2024 - Email	• Email to thank elected officials for their participation and support during the meeting held April 17th, 2024. • No response received.		
Local Community - Resident	July 2018 - Phone Consultation	• Used the trails for 3 wheeling and area seasonally for hunting. • Topics and questions discussed included: Trucks are very big and loud and she feels like they are driving too fast. Always dust associated with the blasting. • has no major concerns regarding the operation and expansion of the Hartville Quarry.	• Dust associated with blasting	N/A
Local Community - Resident	January 29th, 2024 - Phone Consultation	• who has no knowledge of the quarry; doesn't affect her. • has no major concerns regarding the operation and expansion of the Hartville Quarry.	• No concerns received to date	N/A
Local Community - Seasonal Resident	January 29th, 2024 - Phone Consultation	• Topics and questions discussed included: rocks flying off trucks and chipping windshields being a big problem. Complaints have been made previously. has no major concerns regarding the operation and expansion of the Hartville Quarry.	• Rocks flying off quarry trucks and chipping windshields.	N/A
Local Community - Former Resident	January 29th, 2024 - Phone Consultation	• Summer of 2023 the quarry trucks were starting at 5 am and running steady but doesn't mind them. has no major concerns regarding the operation and expansion of the Hartville Quarry.	• No concerns received to date	N/A
Local Community - Former Resident	January 29th, 2024 - Phone Consultation	has no major concerns regarding the operation and expansion of the Hartville Quarry. • Doesn't hear the quarry trucks , and now that the bridge is fixed on Ellershouse Rd, it is fine.	• No concerns received to date	N/A

Hartville Quarry Expansion Project

Alva Construction Limited is a construction company based in Antigonish, Nova Scotia, which operates aggregate quarries throughout Nova Scotia. It currently operates a small quarry south of Ellershouse and accessed from Ellershouse Road, Hants County. The quarry is a source of aggregate used primarily for road construction in Nova Scotia. Alva Construction wishes to expand the quarry, which has reached its approved size of approximately 4 ha, and is applying to the Province of Nova Scotia for an approval for the expansion, for which it requires an environmental assessment. The expansion will allow the company to continue to operate for an additional 20 years. The proposed maximum area for the quarry and for which Alva Construction is seeking an approval, is 10.1 ha.

The environment in the vicinity of the Hartville Quarry, including biological, physical and socioeconomic features, and archaeological and Mi'Kmaq significance, have been reviewed and the assessment of potential environmental impacts will be presented in the submission to Nova Scotia Environment and Climate Change. The environmental assessment submission and registration documents is planned for mid-April, 2024. The Hartville Quarry provides an important source of raw materials for many types of projects, and is a source of employment in the area.

Figure 1. View of Hartville Quarry, July 2023.

Figure 2. View of Hartville Quarry from Access Road.

Contact Information:

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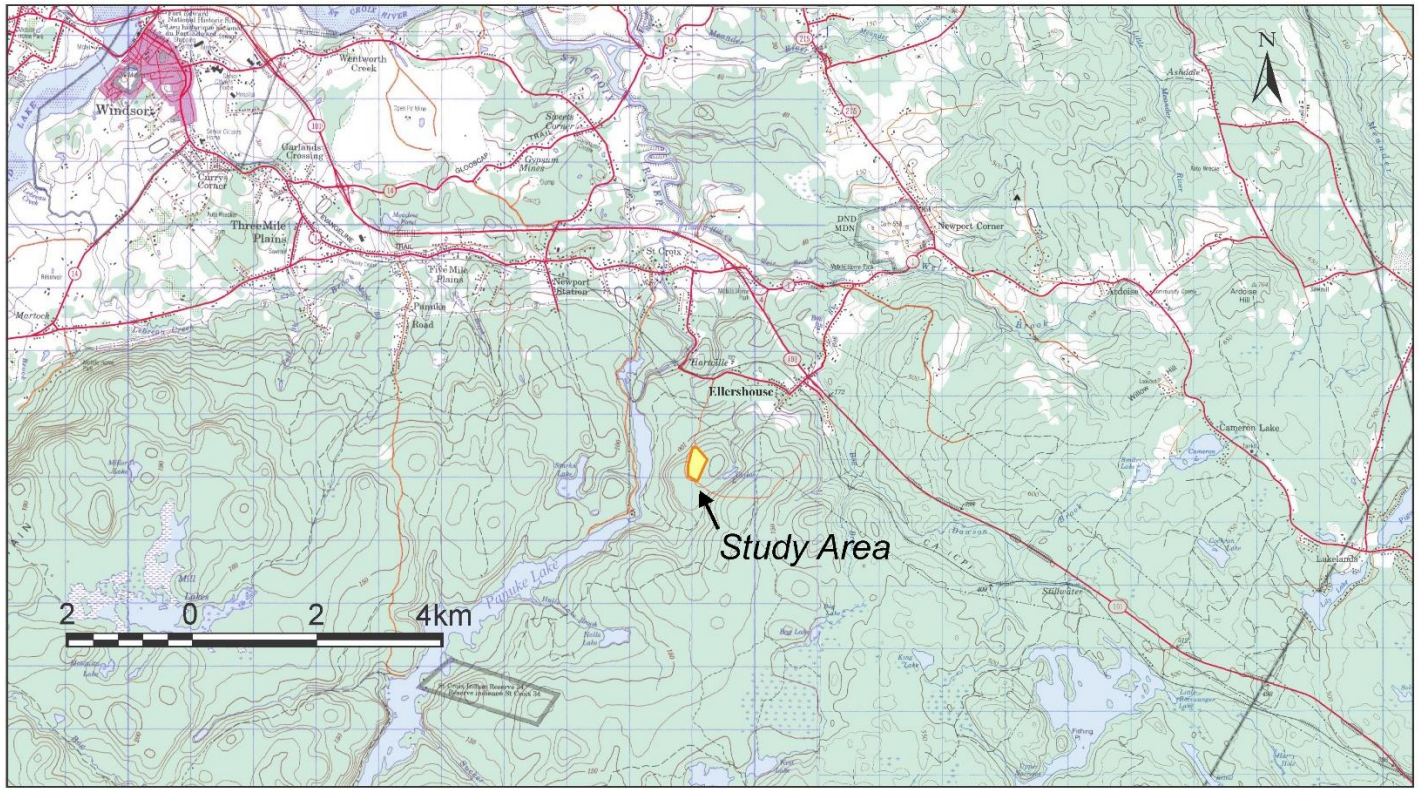
5600 Trunk 7, Antigonish
Nova Scotia | B2G 2J4
Phone: 902 870 6340 (Direct)
Office: 902 863 6445
Email: connor@ns.alva.ca



ALVA CONSTRUCTION LIMITED

HARTVILLE QUARRY EXPANSION

Hants County, Nova Scotia

Location

LEGEND
- Study ARea
- Elevation Contour (m)
- Watercourse

Source:
Canada NTS 1:50,000 11D3 and 21A6
January 2024

ALVA CONSTRUCTION LTD.

NOTICE

Registration of Undertaking for Environmental Assessment ENVIRONMENT ACT

This is to advise that on May 14th , 2024, ALVA CONSTRUCTION LIMITED registered the HARTVILLE QUARRY EXPANSION PROJECT for environmental assessment in accordance with Part IV of the Environment Act.

The purpose of the proposed undertaking is to expand the existing Hartville Quarry from 3.988 ha to 10.118 ha to allow for the continued production and stockpiling of aggregate used in a wide variety of local construction and infrastructure projects. The proposed undertaking will take place at 783 Ellershouse Road, Windsor-West Hants Regional Municipality, Nova Scotia (PIDs 45407111, 45007903, 45407905). The quarry is accessed by an unnamed gravel road leading off Ellershouse Road and is approximately 3.6 km south of the intersection of Trunk 1 and Ellershouse Road (44.960°N, -63.994°W). The project's lifespan will be an estimated 35 years with continued production of an average of 50,000-100,000 tonnes of aggregate annually; based on current market demands. The expected commencement of the proposed project is Summer 2024.

Copies of the environmental assessment registration information may be examined at the following locations:

- Municipality of the District of West Hants office: 76 Morrison Drive, Windsor, NS
- Windsor Regional Library: 195 Albert Street, Windsor, NS
- NSE EA website (when available) http://www.novascotia.ca/nse/ea/
- Nova Scotia Environment and Climate Change, 136 Exhibition Street Kentville, NS

The public is invited to submit written comments to:

Environmental Assessment Branch
Nova Scotia Environment and Climate Change
P.O. Box 442, Halifax, Nova Scotia B3J 2P8

on or before June 13th, 2024 or
contact the Department at (902) 424-3600, (902) 424-6925 (Fax), or e-mail at EA@novascotia.ca

All comments received from the public consultation will be posted on the Department's website for public viewing. In the case of an individual, the address, email and contact information will be removed before being placed on the website. By submitting your comments, you are consenting to the posting of your comments on the Departments website.

Published by: Alva Construction Ltd.- 5600 Trunk 7, Antigonish, NS, B2G 2J4

Connor MacDonald, B.B.A
Alva Construction Ltd.
5600 Trunk 7
Antigonish, Nova Scotia | B2G 2J4

3 April 2024

Re: Alva Construction Limited, Hartville Quarry Expansion, 783 Ellershouse Road, Windsor West Hants Regional Municipality (WWHRM). Class 1 Undertaking – Environmental Assessment, Under Section 9(1) of the Nova Scotia Environmental Assessment Regulations.

Dear Chief

I'm writing to let you know that Alva Construction Ltd. intends to register the proposed expansion of its Hartville aggregate quarry as a Class 1 undertaking under Section 9(1) of the Environmental Assessment Regulations under the *Environment Act.* As part of the process, we have contacted Mi'Kmaq organizations with interests in the general vicinity of the quarry, and plan to meet with them to discuss the project.

Alva Construction Ltd. (Alva) is a construction company which operates aggregate quarries in Nova Scotia, which are an important source of aggregate material for many local and regional projects in Nova Scotia and the Maritimes. The Hartville site is in the community of Ellershuouse, Windsor West Hants Regional Municipality, approximately 13 km southeast of Windsor, and has been an important source of material for many local and regional projects. The company wishes to continue operating the quarry, which will require its footprint to be expanded in upcoming years, requiring an approval from the Province of Nova Scotia. We have conducted the necessary studies for an Environmental Assessment and prepared associated documentation to register the quarry for expansion, as required under Part IV of the Nova Scotia Environment Act. The current approved quarry is located at 783 Ellershouse Road, Windsor West Hants Regional Municipality, Nova Scotia (PIDs 45407111, 45407905, and 45007903). The scope of operations for the expansion is not expected to change from previous activities.

In support of the application for expansion, Alva Construction Ltd., in consultation with Envirosphere Consultants Ltd. of Windsor, Nova Scotia, are preparing an Environmental Assessment Registration

Document that includes information regarding the environmental and socio-economic implications of the Hartville Quarry, with an anticipated submission to Nova Scotia Environment and Climate Change

(NSECC) for registration on April 30th, 2024. At this time, the document will become available online and at two publicly accessible locations (e.g. Windsor Library and the Windsor Municipal office) for review and comment for a 30-day period. A public notification will also appear in the Chronicle Herald and the Valley Journal Advertiser on the registration date with details of the quarry expansion project and availability of the registration document.

The Hartville Quarry is located approximately 31 km southeast of the Glooscap First Nation located in Kings County, and approximately 65 km southeast from Annapolis Valley First Nation located in Kings County. Davis MacIntyre & Associates completed an Archeological Resource Impact Assessment (Heritage Research Permit A2023N5212) in February 2024, which included a request for information directed to the KMKNO regarding traditional land use for the area. The assessment concluded that no archaeological sites or features were encountered within the study area boundaries. First Nation stakeholders can review the entire contents of the Archeological Resource Impact Assessment report, which will be included in the Environmental Assessment Registration Document.

Alva Construction Ltd. extends an invitation to meet and discuss details of the Hartville Quarry expansion project in the coming weeks. Envirosphere will be setting up a meeting date and time on my behalf, and will be reaching out shortly to see about your interest and availability. Please contact me at your convenience if you have any further questions in the meantime.

Sincerely,

Connor Macdonald, B.B.A
Alva Construction Limited

902 870 6340
connor@alva.ns.ca

cc: ɣ, Annapolis Valley First Nation
s, Glooscap First Nation
t, Kwilmu'kw Maw-klusuaqn Negotiation Office
Office of L'Nu Affairs

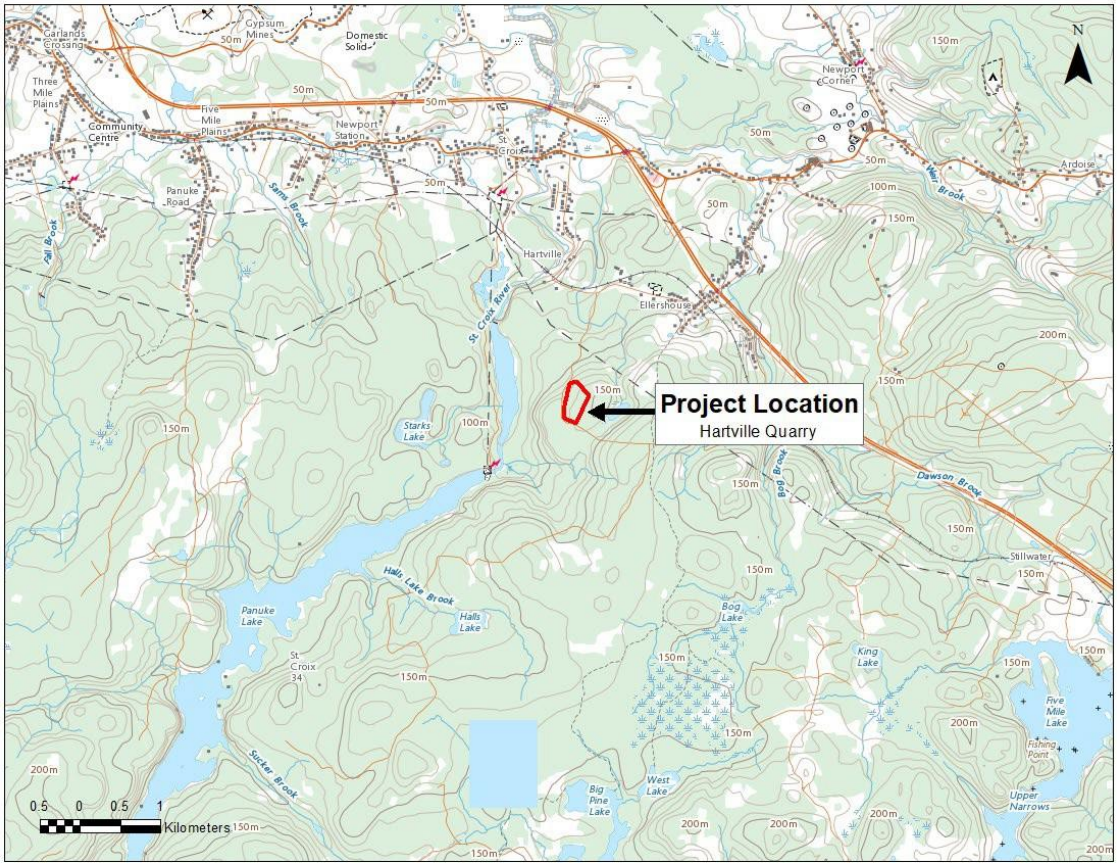


Figure 1. Project location shown on NTS 1:50,000.

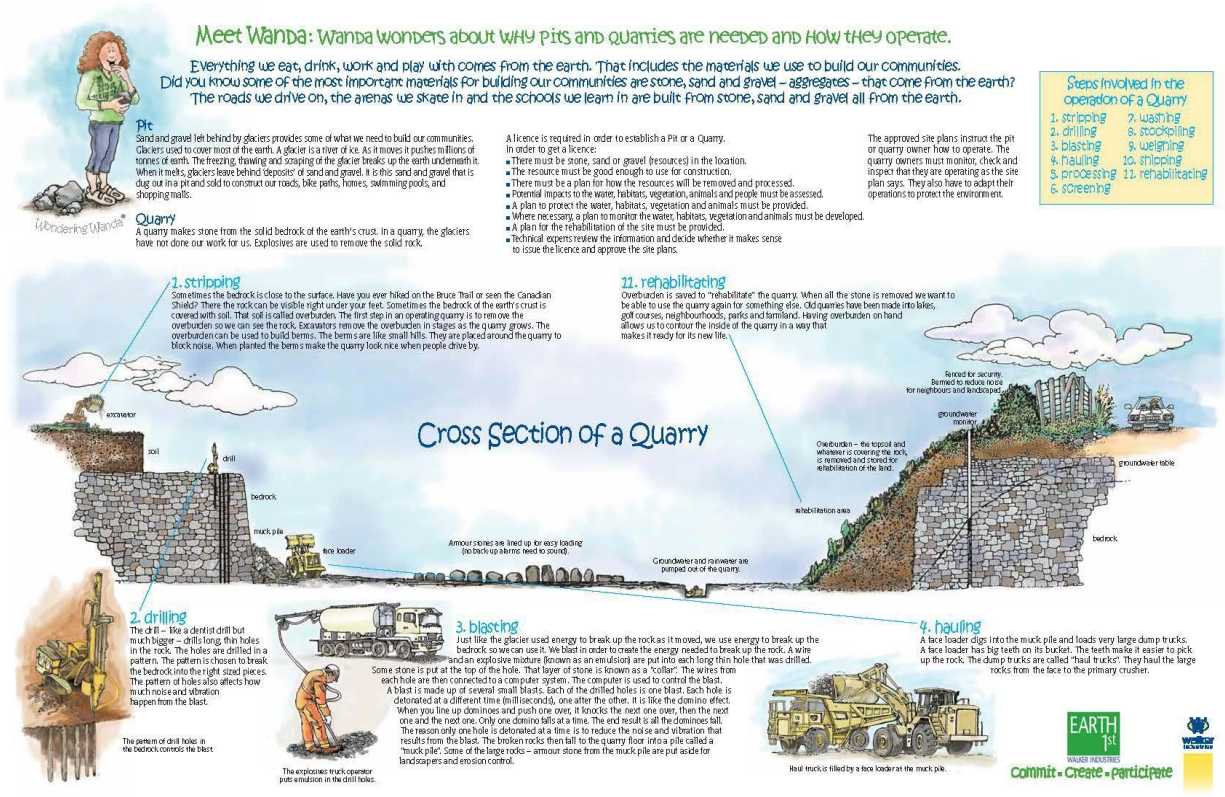


Figure 2. Cross section of quarry operations.

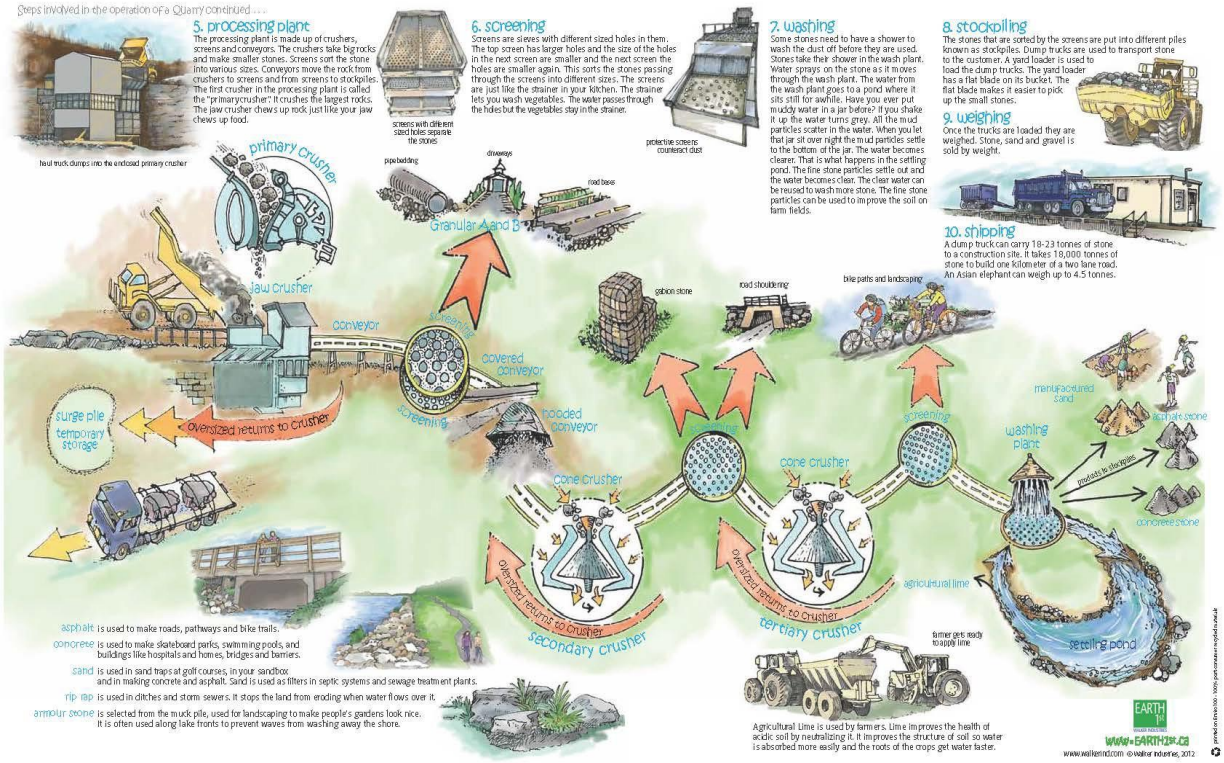


Figure 3. Cross section of quarry operations.

Connor MacDonald, B.B.A
Alva Construction Ltd.
5600 Trunk 7
Antigonish, Nova Scotia | B2G 2J4

3 April 2024

District #5

Re: Alva Construction Limited, Hartville Quarry Expansion, 783 Ellershouse Road, Windsor West Hants Regional Municipality (WWHRM). Class 1 Undertaking – Environmental Assessment, Under Section 9(1) of the Nova Scotia Environmental Assessment Regulations.

Dear Councilor

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Sincerely,

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Alva Construction Limited

902 870 6340
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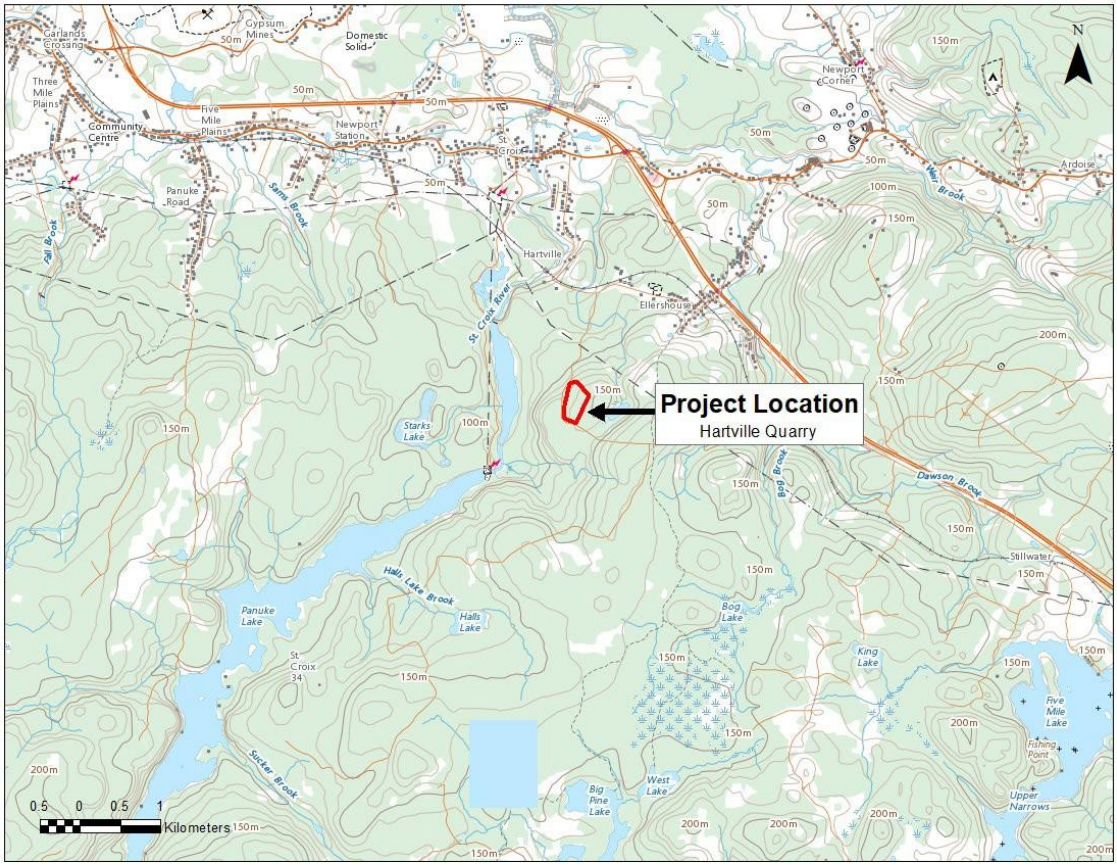
cc: ı, West Hants County District #3
st Hants County District #4



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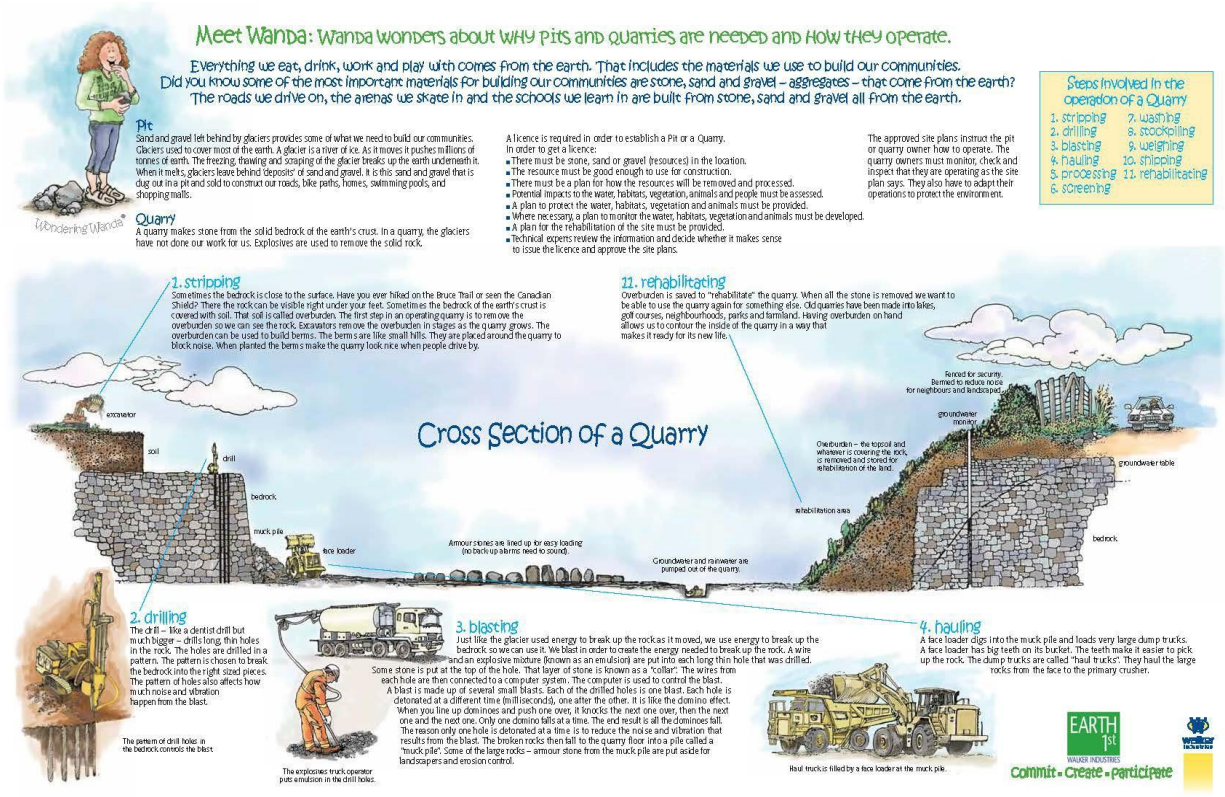

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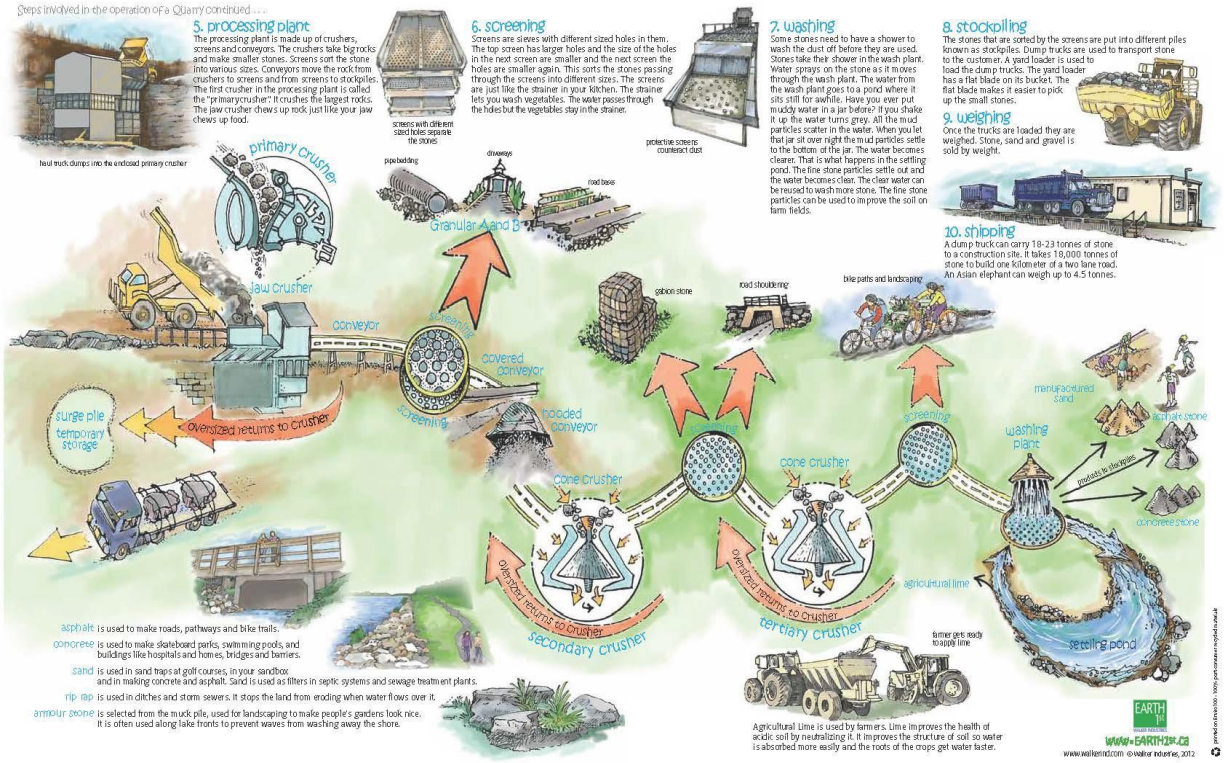

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