

Report

Application For Approval

**Nova Stone Exporters, Inc
Quarry
Little River, Digby County**

Application Number: 2002-025483

File Number: 92100-30

Western Region

Middleton

B Petrie
District Manager



Robert L. Balcom P.Eng.
Regional Engineer

Date



Date

Brad Langille
Inspector Specialist

Date

Report

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Project: Nova Stone Exporters, Inc
Quarry
Little River, Digby County

Introduction: To evaluate the potential environmental effects associated with the operation by Nova Stone Exporters, Inc of a quarry at Little River, Digby County. The proposed Quarry is located on map series 21B /8, grid reference E727200 N4927500, PID # 30161160.

Discussion: The Approval Holder, Nova Stone Exporters, Inc, intends to utilize the area on an as needed basis to meet their requirements. The disturbed area will be approximately 10 acres. It is planned that the project will expand beyond the 10 acres. Total leased area is about 350 acres. Approximately one million tons per year of crushed rock will be shipped from the quarry.

There will be the normal stockpiling of processed material and the normal processing associated with a quarry operation (ie crushing, washing and screening). A ship loading facility will be constructed in the cove. No information about the ship loading facilities was supplied with the application. Federal authorities will be evaluating the ship loading facilities. It appears that Federal officials may require a full Environmental assessment of the project.

This Facility will be operated on lands leased by the Approval Holder.

The proposed quarry area is less than four hectares and therefore is not subject to registration under the Environmental Assessment Regulations. A term and condition has been included in the Approval requiring registration if the area exceeds the four hectare limit.

The quarry meets the minimum separation distance of 800 metres from a structure. There are no watercourses in the immediate vicinity of the quarry. The remainder of the proposed area of operation covered by this approval will meet/exceed the 15 metre separation distance from other adjoining properties.

The proposed area of operation covered by this approval will meet all of the separation distances as specified in the pit and quarry guidelines.

Environmental Effects:

The main environmental effects associated with the proposed operation are noise, dust, surface runoff, blasting, and rehabilitation and the effect that the blasting operations will have on the marine mammals in the Bay of Fundy. It may be necessary to restrict blasting in the quarry to when the Right Whales are not in the Bay of Fundy. The North Atlantic Right Whales are an endangered species that have been hunted to near extinction by mankind. Under water concussion from the on shore blasting has not been defined in the application.

Air Emissions (Dust) & Noise:

Environmental effect from noise and dust on land are expected to be minimal as the proposed area meets the required minimum separation distances from the nearest residential dwelling and is surrounded by undeveloped lands. Noise and dust will be further restricted to the limits set forth in the Department of Environment and Labour pit and quarry guidelines and shall be monitored at the Department's request.

Surface Runoff:

Environmental effect from surface runoff will be controlled via quarry grading and siltation ponds so that surface runoff is retained prior to discharge. There is no watercourse in the immediate vicinity of the quarry except a wetland that appeared to have been developed from previous excavations in the area.

Surface water runoff from the quarry operation will be restricted to the limits in the Department of Environment and Labour pit and quarry guidelines. Surface runoff will be monitored by the Approval Holder reports being submitted to the Department.

Blasting:

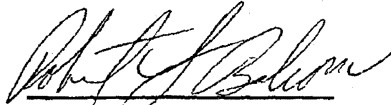
The site of the proposed quarry meets the departments guideline for separation from the nearest residence of 800 metres. Blasting operations will be restricted to the limits in the Department of Environment and Labour pit and quarry guidelines. Each Blast will be monitored by the approval holder with periodic reports being submitted to the Department. The approval holder has indicated that they will monitor the effect that the quarry blasts on marine mammals in the Bay. The applicant has not supplied any information that would indicate what affect blasting will have on the whales in the Bay of Fundy.

Rehabilitation:

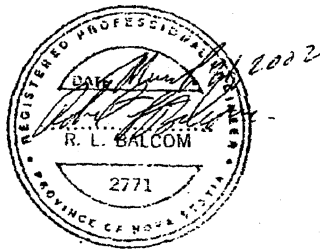
The Approval Holder plans to immediately restore all disturbed areas via grading and vegetation once extraction has been completed.

Recommendation:

Nova Stone Exporters, Inc application for the operation of a Quarry at Little River, Digby County, can be approved subject to the attached terms and conditions.



Robert L Balcom P.Eng.
Regional Engineer



APPROVAL

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

APPROVAL HOLDER: Nova Stone Exporters, Inc
APPROVAL NO: 2002-025483
EFFECTIVE DATE: March 14, 2002
EXPIRY DATE:

Pursuant to Part V of the *Environment Act, S.N.S. 1994-95, c.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:

Construction and operation of a Quarry, and associated works, at or near Little River, Digby County in the Province of Nova Scotia.

Administrator _____
Date Signed _____

TERMS AND CONDITIONS OF APPROVAL

Nova Scotia Department of Environment and Labour

Project: Nova Stone Exporters, Inc
Quarry

Little River, Digby County

Approval No: 2002-025483

File No: 92100-30

Map Series: 21B /8

Grid Reference: E727200 N4927500

PID # : 30161160

Reference Documents:

- Application dated February 15,2002 and attachments.

1. Definitions

- "Abandonment" means cessation of production of aggregate for a period of twelve (12) months.
- "Act" means the *Environment Act* S.N.S. 1994-1995, c.1 and includes all regulations made pursuant to the Act.
- "Active Area" means the area required to operate a quarry and includes the working face and associated works.
- "Associated works" means any building, structure, processing facility, pollution abatement system or stockpiles of aggregate.
- "Department" means the Western Region, Middleton Office, of the Nova Scotia Department of Environment and Labour located at the following address:

Nova Scotia Department of Environment and Labour
Environmental Monitoring and Compliance Division
Western Region, Middleton Office
142 Commercial St.
PO Box 1240
Middleton, NS B0S 1P0

Phone: (902) 825-2123

Fax: (902) 825-4471

- f) "Disturbed Area" means any area on a quarry site that has been stripped of vegetation and is susceptible to erosion.
- g) "Facility" means the Quarry and associated works.
- h) "Minister" means the Minister of the Nova Scotia Department of Environment and Labour.
- i) "Rehabilitation" means restorative work performed or to be performed in accordance with the rehabilitation plan.
- j) "Structure" includes but is not limited to a private home, a cottage, an apartment building, a school, a church, a commercial building or a treatment facility associated with the treatment of municipal sewage, industrial or landfill effluent, an industrial building, infrastructure or construction, a hospital, and a nursing home, etc.

2. **Scope of Approval**

- a) This Approval (the "Approval") relates to the Approval Holder and their application and supporting documentation, as listed in the reference documents above, to construct and operate the Facility, situated at or near Little River, Digby County (the "Site").
- b) The Facility shall be constructed and operated as outlined in the application for industrial approval dated February 15, 2002 and supporting documentation.
- c) The Site shall not exceed the area as outlined in the application and supporting documentation.

- d) Should the work authorized by this Approval not be commenced within a year, this Approval shall automatically be null and void, unless extended in writing by an Administrator.

3. General Terms and Conditions

- a) The Approval Holder shall construct, operate and reclaim its Facility in accordance with provisions of the:
 - i) *Environment Act* S.N.S. 1994-1995, c.1;
 - ii) Regulations pursuant to the above Act;
 - iii) Any future amendments to the Act and regulations
- b) No authority is granted by this Approval to enable the Approval Holder to construct the Facility on lands which are not in the control or ownership of the Approval Holder. It is the responsibility of the Approval Holder to ensure that such a contravention does not occur. The Approval Holder shall provide, to the Department, proof of such control or ownership upon expiry of any relevant lease or agreement. Failure to retain said authorization will result in this Approval being null and void.
- 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) The Minister or Administrator may modify, amend or add conditions to this Approval at anytime pursuant to Section 58 of the Act.
- e) This Approval is not transferable without the consent of the Minister or Administrator.
- f)
 - (i) If the Minister or Administrator determines that there has been non-compliance with any or all of the terms and conditions contained in this Approval, the Minister or Administrator may cancel or suspend the Approval pursuant to subsections 58(2)(b) and 58(4) of the Act, until such time as the Minister or Administrator is satisfied that all terms and conditions have been met.
 - (ii) Despite a cancellation or suspension of this Approval, the Approval Holder remains subject to the penalty provisions of the Act and regulations.

- g) The Approval Holder shall notify the Department prior to any proposed extensions or modifications of the Facility, including the active area, process changes or waste disposal practices which are not granted under this Approval. An amendment to this Approval will be required before implementing any change. Extensions or modifications to the Facility may be subject to the Environmental Assessment Regulations.
- h) Pursuant to Section 60 of the Act, the Approval Holder shall submit to the Administrator any new and relevant information respecting any adverse effect that actually results, or may potentially result, from any activity to which the Approval relates and that comes to the attention of the Approval Holder after the issuance of the Approval.
- i) The Approval Holder shall immediately notify the Department of any incidents of non-compliance with this Approval.
- j) The Approval Holder shall bear all expenses incurred in carrying out the environmental monitoring required under the terms and conditions of this Approval.
- k) 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.
- l) All samples required by this Approval shall be analysed by a laboratory that is:
 - i) Accredited by the Standards Council of Canada; or
 - ii) Accredited by another agency recognized by the Nova Scotia Department of Environment and Labour to be equivalent to the Standards Council of Canada; or
 - iii) Maintaining an acceptable standard in a proficiency testing program conducted by the Canadian Association for Environmental Analytical Laboratories for all parameters being reported; or
 - iv) Maintaining an acceptable standard in a proficiency or performance testing in another program considered acceptable to the Nova Scotia Department of Environment and Labour for all parameters being reported
- m) The Approval Holder shall submit any monitoring results or reports required by this Approval to the Department. Unless specified otherwise in this Approval,

All monitoring results shall be submitted within 30 days following the month of monitoring.

- n) The Approval Holder shall ensure that this Approval, or a copy, is held on the 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.
- o) The Approval Holder will be required to register their project under Part IV of the *Environment Act* should the Facility and associated works including access roads exceed an area of four (4) hectares.

4. **Construction of Facility**

- a. All erosion and sedimentation controls are to be in place prior to construction at this Facility. The Nova Scotia Department of the Environment "Erosion and Sedimentation Control Handbook For Construction Sites" shall serve as the reference document for all erosion control measures. These measures are minimum requirements and additional controls shall be implemented if Site runoff exceeds the discharge limits contained herein.
- b. All erosion and sedimentation controls are to be maintained and remain in place until the disturbed areas are stabilized.
- c. All water leaving the Site during the construction phase shall be in compliance with total suspended solids limits of 50 mg/l grab or 25 mg/l monthly arithmetic mean.
- d. Appropriate signage including the hours of operation, emergency telephone numbers and contacts are to be posted at the entrance to the Facility.
- e. The generation of dust from the Site shall be suppressed by the application of water sprays, or the application of other suitable approved dust suppressants as required.

5. Particulate Emissions (Dust)

- a) Particulate emissions shall not exceed the following limits at or beyond the Site property boundaries:

Annual Geometric Mean 70 $\mu\text{g}/\text{m}^3$

Daily Average (24 hr.) 120 $\mu\text{g}/\text{m}^3$

- b) The generation of fugitive dust from the Site will be suppressed by the application of water sprays, or the application of other suitable dust suppressants approved by the Department.
- c) Site access road(s) shall be maintained to minimize dust generation. The use of used oil is not permitted.
- d) Monitoring of particulate emissions shall be conducted at the request of the Department. The location of the monitoring station(s) for particulate will be established by the Administrator and may include point(s) beyond the property boundary of the quarry.
- e) When requested, suspended particulate matter shall be measured by the high volume method as described in report No. E.P.S. 1-AP-73-2.

6. Sound Levels

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

Leq 65 dBA 0700-1900 hours (Days)
60 dBA 1900-2300 hours (Evenings)
55 dBA 2300-0700 hours (Nights)

- 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 the Administrator and may include point(s) beyond the property boundary of the quarry.

7. Surface Water

- a) The Site shall be developed and maintained to prevent siltation of the surface water which is discharged from the property boundaries into the nearest watercourse or beyond the property boundary. The Nova Scotia Department of the Environment "Erosion and Sedimentation Control Handbook For Construction Sites" shall serve as the reference document for all erosion control measures. These measures are minimum requirements and additional controls shall be implemented if Site runoff exceeds the discharge limits contained herein.
- b) No authority is granted by this Approval to enable the Approval Holder to discharge surface water beyond the property boundary and onto adjoining lands without the authorization of the affected landowner(s). It is the responsibility of the Approval Holder to ensure that the authorization of said landowner(s) is current and valid. Failure to retain said authorization will result in this Approval being null and void. The Approval Holder shall provide, to the Department, proof of the continued authorization of the adjoining landowner(s) when the current agreement has expired.
- c) All erosion and sedimentation control devices shall be installed prior to any excavation of material.
- d) The Approval Holder shall ensure the liquid effluent levels in Table 1 are met and that the effluent is monitoring at the frequency and locations indicated.

Table 1				
Final Effluent Discharge Limits				
Parameters	Maximum in a Grab Sample	Monthly Arithmetic Mean	Monitoring Frequency	Monitoring Station
Total Suspended Solids	50 mg/l	25 mg/l	weekly	settling pond outlet
pH	5 - 9	6 - 9	weekly	settling pond outlet

- e) If it becomes necessary to drain the Site, the wastewater shall be drained to settling ponds for appropriate treatment to meet the suspended solids limits outlined in Table 1.
- f) All wash water systems shall be arranged in closed circuit.
- g) Additional monitoring stations for liquid effluent may be specified as required by the Department.
- h) A monthly summary of results of monitoring shall be submitted to the Department.

8. Groundwater

- a) The Approval Holder shall replace at their expense any water supply which has been lost or damaged as a result of extracting aggregate.
- b) The Approval Holder shall secure from the Administrator an approval amendment prior to excavating below the watertable.

9. Separation Distances

- a) The Approval Holder shall not locate the Active Area of the quarry within:
 - i) 30 m of the boundary of a public or common highway.
 - ii) 30 m of the bank of any watercourse or ordinary high water mark.
 - iii) 30 m of the boundary of the quarry property.
- b) The Approval Holder shall not blast within:
 - i) 30 m of the boundary of a public or common highway.
 - ii) 30 m of the bank of any watercourse or ordinary high water mark.
 - iii) 800 m of the foundation or base of a structure located off site.
 - iv) 15 m of the property boundary when a structure on the abutting property is not involved.

10. **Blasting**

- a) The Approval Holder 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. The design shall be sent to the Department for review prior to any blasting.
- b) The Approval Holder shall conduct a pre-blast survey including a water quality analysis of all structures within 800 metres of the Facility. 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 any blasting on the Site. Water quality parameters will be determined by NSDEL staff.
- c) The Approval Holder shall call the nearest weather office, to assess the climatic conditions prior to conducting any blasting. No blasting will be permitted if there is a thermal atmospheric inversion, a low cloud cover or fog conditions.
- d) 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 shall ensure that all blasts are monitored for concussion and ground vibration to ensure that the limits in Table 2 are not exceeded:

Table 2			
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

- e) The monitoring station for blasting shall be as indicated in Table 2. Additional monitoring stations for blasting may be specified as required by the Department.
- f) A monthly summary of results of monitoring shall be submitted to the Department.
- g) The effect of blasting in the quarry on the marine mammals shall be monitored and a report on the effect must be submitted to the department.
- h) Blasting operations may be modified by the administrator if there is a negative effect on the endangered Right Whale in the Bay of Fundy.

11. Rehabilitation

- a) The Approval Holder shall post an interim security in a form acceptable to the Department in the amount of \$2,500.00 an acre of disturbed area on or before April 30, 2002.
- b) The interim security shall not exceed one (1) year unless otherwise agreed in writing by the Administrator.
- c) The Approval Holder shall submit a rehabilitation plan to the Department for review, 12 months before closure of the quarry.