

# SHOAL HARBOUR SAND PRODUCTS LTD. THORBURN LAKE QUARRY

## *Environmental Assessment Registration Document*

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## **1.0 NAME OF UNDERTAKING**

Thorburn Lake Quarry

- Quarry Permit Identification
  - File 711:12278 covering 3.0 ha;
  - File 711:12310 covering 0.85 ha;
  - File 711:12311 covering 1.45 ha.

## **2.0 PROPONENT**

### **2.1 Name of Corporate Body**

Shoal Harbour Sand Products Ltd.

### **2.2 Address**

9 Skylark Place  
CBS, NL  
A1X 7E6

### **2.3 Chief Executive Officer**

Mr. Allan Porter  
Owner  
9 Skylark Place  
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### **2.4 Principal Contact Person**

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## **3.0 THE UNDERTAKING**

### **3.1 Nature of the Undertaking**

This undertaking is twofold. One aspect is adding and developing a new 3.0 ha quarry area adjacent to an existing lease which contains sand and gravel resources. The second aspect is adding two separate quarry areas covering 0.85 ha and 1.45 ha where

material was previously stockpiled but was not within an issued quarry permit or lease. All permit areas are to be adjoined to the main Thorburn Lake Quarry, an existing active 9.767 ha quarry lease owned and operated by Shoal Harbour Sand Products (SHSP).

### **3.2 Purpose/Rationale/Requirement for the Undertaking**

The main purpose and rationale for the proposed 3.0 ha quarry area is to utilize additional resources and add value to the existing Thorburn Lake Quarry site. Additionally, it would allow the currently active quarry site to be developed more efficiently and rehabilitated in a more environmentally effective manner. A glacial feature, containing an aggregate resource, is located partially within the Thorburn Lake Lease, and partially within the proposed 3.0 ha quarry area. Quarrying of this feature, from the active Thorburn Lake Quarry to the current lease boundary, would leave aggregate resources sterilized when rehabilitated. The rehabilitation of this face with a proposed 30 degree sloping would require a large amount of useable aggregate material and possibly imported organics. In contrast, the complete quarrying of the elongated “snake like rigid” from the existing quarry floor elevation through to a similar elevation, but slightly lower, on the opposite side would not only allow for maximum use of the aggregate resource, but would remove the need for 30 degree sloping altogether. The result would be a generally flat surface sloped towards the existing quarry area.

The purpose for adding the proposed 0.85 ha and 1.45 ha quarry areas is to secure material that has been historically screened and stockpiled outside the current lease boundary. The stockpiled material was placed in these locations by the previous owner and thus were in place when the quarry was purchased by the current owner. The issuance of these proposed stockpile quarry areas, adjacent to the existing quarry lease, will prevent another entity from acquiring the land and its contained stockpiles.

## **4.0 DESCRIPTION OF THE UNDERTAKING**

### **4.1 Geographic Location**

The proposed project is located in a rural area 19 km west of Clarenville, Newfoundland, and on the eastern side of Southwest River (**Figures 1 to 3**). The site is not located within any municipal boundaries but is within and surrounded by undeveloped Crown Land.

### **4.2 Physical Features**

#### **4.2.1 Project Site Description**

The proposed quarry areas will all be adjoined to the proponent’s existing quarry lease in three separate areas and will function as an extension to that operation. The new

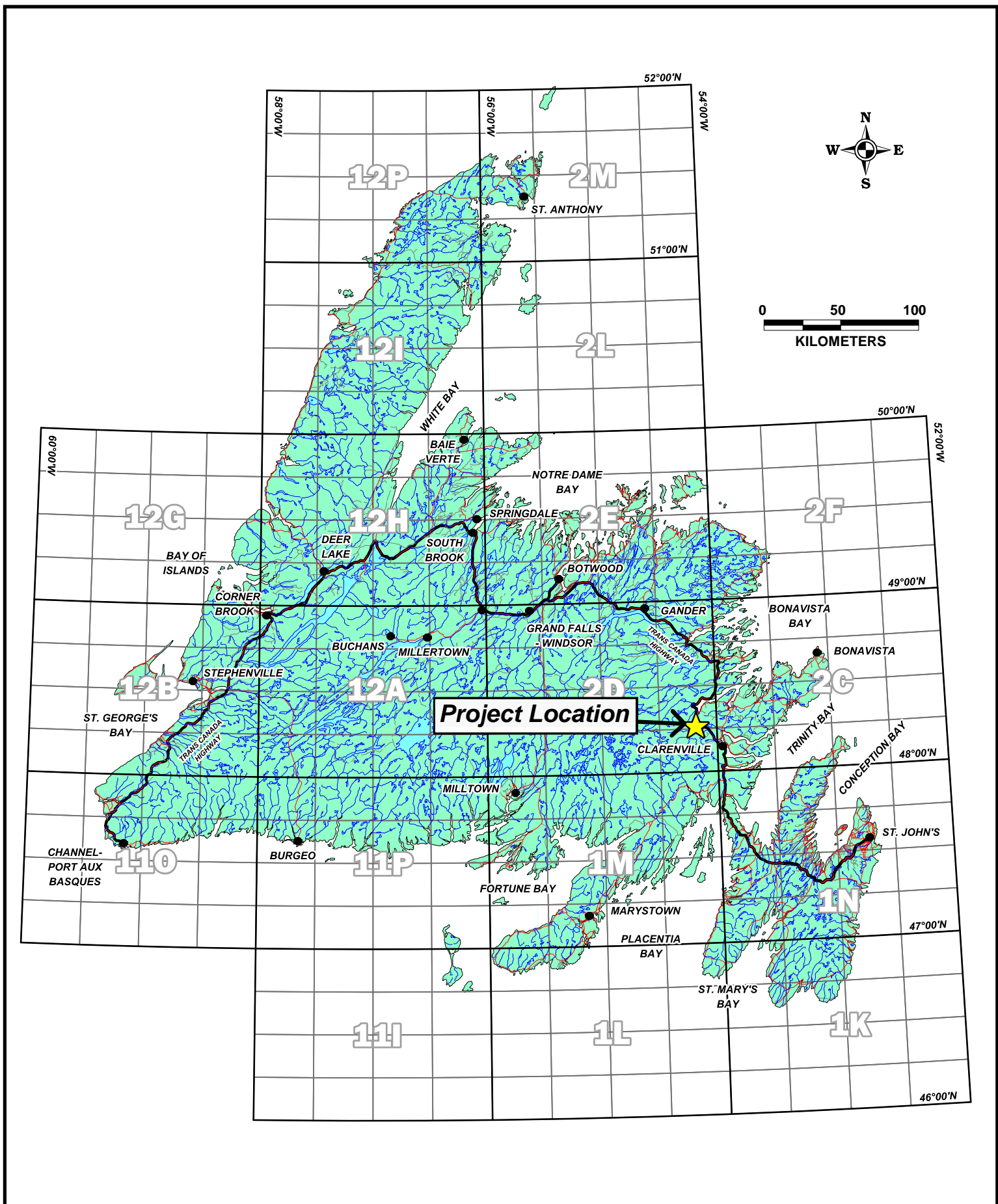


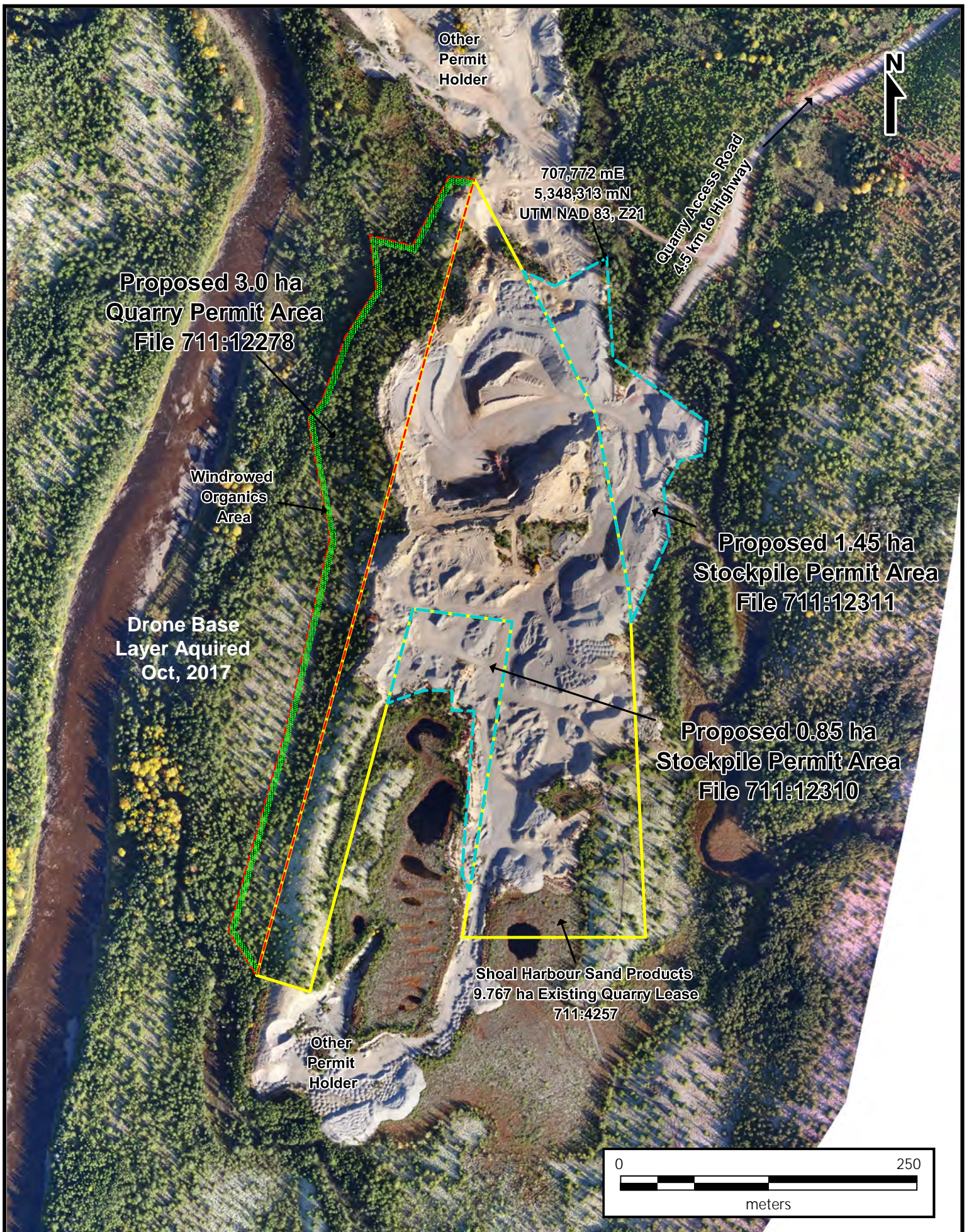
FIGURE 1: PROJECT LOCATION MAP (N.T.S. 2D/01 and 2D/08)





FIGURE 2: DETAILED PROJECT LOCATION MAP





**FIGURE 3: QUARRY PERMIT LOCATION MAP**



quarry area will be located along the western boundary and the stockpile quarry permits will be located along the eastern and southern boundaries (**Figure 3**). The primary physical feature of this project will be the quarry itself. This includes the quarrying of identified aggregate material and the stockpiling of material.

#### **4.2.2 Existing Biophysical Environment**

The proposed quarry sites are located between two water courses: Southwest Brook on the western side, and a small brook on the eastern side. Southwest Brook is described as a relatively narrow and slow-moving waterway that drains towards Clode Sound (Skanes, 1997). The brook, to the east, is small, meandering and drains into Southwest Brook just north of the project. The western border of the project area will be at its closest, 65 m from Southwest Brook. The change in elevation from Southwest Brook to the future quarry floor, along the western boundary of the proposed 3.0 ha quarry area, would be a minimum of 8 m. This elevation data comes from an eBee drone survey completed in the fall of 2017 that has provided centimeter scale topography to aid in laying out the quarry permit boundaries.

The proposed 3.0 ha quarry area is underlain by glaciofluvial esker material and consists of fine grained sand to coarse grained cobbly gravel. The esker material deposit is shaped into a ten to twelve meter high, north to south, elongated ridge that straddles the boundary between the existing lease and the 3.0 ha quarry permit application area. The surrounding topography consists of gently sloping hills. Organic cover thickness varies between 15 to 30 cm and tree growth is composed primarily of balsam fir, black spruce, birch and aspen.

### **4.3 Construction and Operation**

#### **4.3.1 Site Access**

The site is accessible via an existing 5 kilometer dirt road extending from the Trans-Canada Highway. The entrance to the access road is approximately 19 km west of Clarendville. A locked gate is located immediately at the entrance of the quarry to prevent unauthorized access to the site

#### **4.3.2 Site Clearing**

Any merchantable timber will be initially cleared by utilizing manpower and hand held chainsaws. Merchantable timber will be harvested under a cutting permit issued by the Department of Fisheries and Land Resources. The wood will be stacked in 6 to 8 feet lengths and subsequently removed from site to be used primarily as firewood. Surficial

soils, subsoil and grubbing will be stripped and windrowed to the permit boundary. This windrowed material will be used to construct perimeter berms as required.

### **4.3.3 Quarry Development and Operation**

The new quarry areas covering 3.0 ha, 0.85 ha and 1.45 ha were laid out by utilizing high resolution drone imagery. The location of the 3.0 ha area boundary was defined by the location of the aggregate resource, while those of the 0.85 ha and 1.45 ha areas were laid out to include previously stockpiled aggregate resources.

The 3.0 ha quarry site is to be developed from the proponent's existing quarry, at the boundary between it and the existing lease, and will progress towards the west and south as development proceeds. Development activities to be undertaken will consist of removal and stockpiling of organics to the perimeter of the site. Operational activities will consist of pit run removal, stockpiling and screening of aggregate material. No development activities will be undertaken on the 0.85 ha and 1.45 ha areas; the removal of the stockpiled material will be the main operational activity undertaken.

Quarrying activity will take place approximately between May and December of each year. However this will ultimately be dictated by the timing of seasonal spring melt and the onset of winter conditions.

## **4.4 Potential Sources of Pollution During Construction and Operation**

The construction phase of the development will consist of the removal of trees and the subsequent removal and stockpiling of organic material. The equipment used for these activities will consist of small and heavy machinery including chainsaws, front end loaders, and excavators. This equipment represents a potential source of noise disturbance, exhaust emissions, the potential release of petroleum hydrocarbons, domestic waste and general refuse. Also, construction and operational activities introduce the possibility of erosion and transport of fine grained deleterious particles such as clay and silt.

Air pollution will be controlled by having all equipment on site fitted with the appropriate emission-control equipment. Noise levels associated with the work is not expected to reach harmful levels. Workers will have the proper hearing protection and the work site, as noted above, is a controlled work environment. Domestic waste generated during construction will be collected and disposed of in accordance with the Waste Material Disposal Act. Sewage will not be present as SHSP has a maintenance garage, located



along the access road to the quarry site, where a septic field, approved by Service NL, is in place.

Fuel will not be stored on site but will be brought in as required in slip tanks carried in pickup trucks. These slip tanks will not be filled beyond 95% capacity, preventing inadvertent spillage. The handling of petroleum products on site will comply with the Storage and Handling of Gasoline and Associated Products Regulations. Complete emergency spill kits will be available on site at all times for containment and cleanup of any hydrocarbon leaks.

The erosion and transport of fine grained particles during construction and operational activities will be controlled by using appropriate mitigating measures such as erosion control ditches, hay bales, and silt fencing. The stockpiles located in the 0.85 ha and 1.45 ha areas consist of coarse rejected aggregate material previously separated by screening. They contain minor fine particles, are typically cobble sized and present little risk of erosion and transport of fine particles.

#### **4.5 Potential Resource Conflicts During Operation**

Potential resource conflict during operations could include the use of the area for recreational purposes. However, the restricted site access should limit this potential issue and the known historical nature of quarrying in the area by individuals who frequent it, will help mitigate recreational land use.

Sediment erosion and the control of it is one of the more significant items to be addressed with this undertaking. The project is located proximal to Southwest Brook, which could potentially be impacted by sediment runoff. Other operations, adjacent to and north of SHSP Thorburn Lake Quarry area, have successfully developed their quarries leaving a 40 m buffer from Southwest River with no documented environmental concerns. The closest point the 3.0 ha quarry permit area is to Southwest River will be 65 m in distance. In order to prevent sediment runoff into Southwest Brook, the following design considerations and mitigation measures will be followed:

- According to the Newfoundland and Labrador Mining Act guidelines, the location of any new project must be buffered from a watercourse. By utilizing the recommended formula of  $12\text{ m} + 1.5\text{ m} \times \text{slope} (\%)$  for calculating an approximate buffer distance with an elevation of 8 m (the minimum height difference between the watercourse and the quarry floor elevation), a value of 30 m is calculated. This means that the project area located at a minimum of 65 m away from the river is well beyond a safe distance for slope erosion concerns.

- The quarry floor will be sloped towards the center of the Thorburn Lake Quarry area; any water will be directed to the east away from Southwest River. The aggregate material within the currently active quarry is highly permeable, which allows water to drain natural through this material and prevents site runoff.
- Within the proposed 3.0 ha area, a 5 m wide buffer will be left inside the northern, western and southern boundary where no resources will be excavated (**see Figure 3**). Berms constructed from the windrowed organics will be placed within this buffer area and will serve as additional protection against sediment runoff.
- The pit floor will always be lower than the natural topography as it progresses west to also contain precipitation water within the quarry site.
- Should water runoff become a problem, erosion and sediment control measures in line with industry best management practices will be utilized. This will include silt fencing, hay bales and erosion control ditches to prevent drainage into Southwest River. Also, a settling pond may be constructed to temporarily hold water within the quarry and allow for natural seepage into the underlying permeable aggregate.

## **4.6 Occupation**

The occupations required for the proponent's project are anticipated to be similar to those for the currently active quarry site. These occupations are listed below and classified as per the National Occupational Classification (2011):

### ***Construction***

- 1 Site Foreman/Supervisor (7302)
- 1 Heavy Equipment Operator – Loader/Excavator (7521)

### ***Operation***

- 1 Pit Manager (7302)
- 1 Heavy equipment Operator – Loader, Excavator, Screening (7521)
- 5 Heavy Equipment Operators (in and out of quarry site to specific job locations) – Tandem, Tandem-Tandem & Semi Dump Trailers (7521)

All required personal will be hired and paid directly by SHSP.



#### **4.7 Reclamation and Closure**

All proposed quarry areas will be rehabilitated. When quarrying is complete in the 3.0 ha area, 30 degree sloping will be completed as required. Subsequently, the previously windrowed and preserved organic material that was stripped during the construction phase will be re-spread to promote natural revegetation. If there is insufficient organic material to rehabilitate the 0.85 ha and 1.45 ha stockpile areas, alder seedlings will be planted in a 2 meter grid by an independent third party.

#### **4.8 Project Related Documents**

A Quarry Lease Renewal document for the existing quarry area has been recently submitted to the Department of Natural Resource of Newfoundland and Labrador by SHSP. Three separate quarry permits have also been applied for covering 3.0 ha, 0.85 ha and 1.45 ha which are discussed above. These permits are required to address historical issues identified through the recent development of the Development, Rehabilitation and Closure plans for the lease area and to allow for the safe, efficient and complete development of the aggregate resource present in the area.

## 5.0 APPROVAL OF THE UNDERTAKING

The following is a list of referral agencies, responses received and possible permits required for the project. Some of these approvals/permits are already in progress.

**Table 1: Referral Agencies, Responses and Possible Permits Required**

Department/Regulatory Agency	Status	Possible Required Approvals/Permits
Transportation and Works	Approved	
Tourism, Culture, Industry and Innovation -Historic Resources	Approved	
Service NL -Clareville	Conditional Approval	Preliminary Application to Develop Land
Fisheries and Land Resources -Crown Lands	Approved	Permit to Occupy Crown Lands
Fisheries and Land Resources -Wildlife	Conditional Approval	
Fisheries and Land Resources -Forestry	Approved	Operating Permit Commercial Cutting Permit
Municipal Affairs and Environment Water Resources Management Division	Conditional Approval	Water Use Licence Water Management Plan
Municipal Affairs and Environment -Environmental Assessment Division	Project Registration Required	Environmental Assessment Registration
Municipal Affairs and Environment -Land Use Planning	Approved	
Natural Resources Lands Division -Quarry Materials	Approved	Quarry Permit
Tourism, Culture, Industry and Innovation -Tourism	No Referral Response to Date	

## 6.0 SCHEDULE

The proposed schedule for this project is as follows:

Submission of Registration Document	April 2018
Review of Submission Document by Government	June 2018
Commencement of Construction and Operations	August 2018



## 7.0 FUNDING

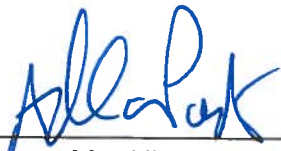
Funding for the construction and operation of project will be provided entirely by the proponent.

## 8.0 LIMITATIONS

This environmental registration document was prepared, in consultation with SHSP, by SEM Ltd. for their use under the terms defined in a written contract between the two parties. Some of the information included in this document was obtained by SEM Ltd. through recent work on a quarry lease renewal document that included a site visit. Additional information was provided by the client, and relates to the scope of this project exclusively. SEM Ltd. has worked with the client and utilized the combined extensive knowledge in quarry development and potential environment related concerns to as accurately as possible, with the information available, layout the development of the site.

## 9.0 REFERENCES

Skanes, R., 1997. Stage 1 Historic Resources Overview Assessment: Southwest River, Newfoundland. Excerpt from Archeology in Newfoundland and Labrador by K., Nelmes, 1997.



\_\_\_\_\_  
Name: Mr. Allan Porter

Position: Owner, Shoal Harbour Sand Products Ltd.



\_\_\_\_\_  
Date