



**DEXTER CONSTRUCTION COMPANY LIMITED
MONEY POINT QUARRY EXPANSION,
MONEY POINT, VICTORIA COUNTY, NOVA SCOTIA**

**Registration Document for a Class 1 Undertaking Under Section 9 (1)
of the Nova Scotia Environment Assessment Regulations**

February 2018

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APPENDICES

Appendix A	Property Information <ul style="list-style-type: none">• Joint Stock Certificate• Existing Industrial Approval• Quarry Survey Plan
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Appendix F	Public Consultation Documentation

1.0 INTRODUCTION

To better serve local market needs, Dexter Construction Company Limited (herein after referred to as “Dexter”) of Bedford, Nova Scotia is proposing to expand an existing quarry located at 342 6014 Road, Bay Road Valley, Victoria County, Nova Scotia. An approval to expand the quarry is required under the Nova Scotia Environmental Assessment Regulations. The registration of this Environmental Assessment (“EA”) is in response to Schedule A of the Environmental Assessment Regulations, Undertaking B.2., “*A pit or quarry that is larger than 4 ha. in area for extracting building or construction stone.*”

Dexter is a private Canadian company. It is incorporated under the laws of Nova Scotia and registered to do business in Nova Scotia under the Nova Scotia Corporations Registration Act. Dexter’s Registry of Joint Stock Certificate is attached in **Appendix A** “Property Information.” It is important to note that Municipal Enterprises Limited is the parent company of Dexter Construction Company Limited, which may be referred to within the appendices.

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Consultant Contact:

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H2O GEO Environmental Services Inc.
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It is noted that the quarry operates under an existing Industrial Approval (Approval No. 2010-072527-01), which was most recently amended and re-issued on August 21, 2017 by Nova Scotia Environment. A copy of the Industrial Approval (NSE File # 92100-30-SYD-072527) is also attached in **Appendix A** “Property Information”.

2.0 THE UNDERTAKING

2.1 Description of the Undertaking

Dexter proposes to expand its existing Money Point quarry for the production of aggregate, primarily used in the road and local construction industry. The proposed undertaking (“*the quarry*”) involves the expansion of an existing Nova Scotia Environment approved quarry from a less than four hectare permit area to a 12.7 hectare permit area. A plan showing the dimensions of the existing quarry is included in **Appendix A**. The proposed quarry boundaries are illustrated in **Appendix B**.

2.2 Location

The site is located at 342 6014 Road, Bay Road Valley (PID # 85062008) in Victoria County, Nova Scotia, 5205530 Northing, 639,175 Easting, UTM Zone 20, NAD 83, Air Photo 20090304-100, July 11, 2009 (**Figures 1 & 2 (below) and Drawing 1, Appendix B**). The site is positioned within an un-zoned area east of Victoria County, approximately 2 kilometers (km) southeast of Saint Margaret Village and approximately 2 km northeast of Bay Road Valley. The quarry site that is being expanded has previously been developed as a result of quarrying and construction material processing activities.

The entire property encompasses 38 hectares (ha.) and is owned by John Angus MacDonald and leased to Dexter (**Drawing 2, Appendix B**).

Figure 1 – Project Location



Figure 2 – Site Location and Adjacent Land Uses



3.0 SCOPE OF THE UNDERTAKING

As noted previously, Dexter intends to expand the existing Money Point quarry for the continuing purpose of extracting and supplying aggregate for the road and local construction industry. The existing quarry has been in operation for approximately 20 years and is currently operating under a NSE Industrial Approval for a less than four hectare quarry. The scope of this application is for expansion of the existing quarry to a 12.7 hectare permit area. The existing quarry face is between approximately 5 and 10 meters (m) in height and the disturbed area includes on-site related facilities including a scale house, sedimentation infrastructure, as well as an occasional portable asphalt plant, portable crushing spread, washing and stockpiling areas. During past operations, Dexter has extracted an average of approximately 25,000 to 50,000 tonnes of aggregate per year from the quarry when active. There are no off-site related support facilities, other than the provincial highway network.

It is Dexter's intent to continue quarry operations on the property, using existing infrastructure. It is anticipated that future operations will involve the extraction of approximately 25,000 to 50,000 tonnes/year for the foreseeable future. However, the annual quantity will vary depending on local demand and associated project requirements.

3.1 Purpose/Need of the Undertaking

Dexter proposes to expand the existing Money Point quarry for the production of aggregate, primarily used in the road and local construction industry. The primary benefit will be to the people of Nova Scotia via the continued construction and maintenance of the Provincial highway system.

3.2 Consideration of Alternatives

Dexter operates rock quarries throughout Nova Scotia and Atlantic Canada and uses modern industry standard methodologies in all phases of the extraction, processing and delivery processes. Alternative processes are always being considered in terms of their efficiency, cost effectiveness and environmental mitigation advantages. Continuing operations of the Money Point quarry expansion will be assessed on an on-going basis to ensure that the best available techniques are being utilized in all phases of day to day operations.

3.3 Scope of the Environmental Assessment

The scope of the environmental assessment is in keeping with the Nova Scotia Environment document entitled "Guide to Preparing an EA Registration Document for Pit and Quarry Developments in Nova Scotia" as well as Dexter's experience with respect to similar projects over the past several decades. The scope also takes into consideration that the quarry is, at present, operational, and subject to an existing Industrial Approval. The following sections of this document provide a description of the project and an overview of the human uses and biophysical features of the local environment; outlines the key "Valued Environmental Components" addressed by the EA document; and presents an evaluation and summary of the benefits and potential drawbacks to the environment during all phases of the proposed undertaking.

4.0 PUBLIC INVOLVEMENT

4.1 Methods of Involvement

Dexter has engaged various public entities, as outlined below, and as the EA requirements do not include a direct public involvement program, public notification to date has focussed on

notifying local officials and residents of Dexter’s intent to file an EA application to expand the existing Money Point quarry. In this regard, the following persons have been engaged regarding the intent of this EA document:

Table 1. Money Point Quarry Environmental Assessment – Stakeholder Engagement Summary				
Stakeholder	Description of Engagement	Summary of Engagement	Concerns Identified	Concerns Addressed
Local Community	Spring/Summer 2017 - Interviews	<ul style="list-style-type: none"> • 4/5 nearest residential property owners interviewed as part of Biophysical Assessment • Residents accept the presence of the quarry, did not indicate any concerns 	<ul style="list-style-type: none"> • One resident noted truck noise and dust associated with quarry operations. 	<ul style="list-style-type: none"> • Quarry to operate in accordance with noise and dust limits established in Industrial Approval. • Dexter to implement Best Practices to manage noise and dust
	October 25, 2017 - Meeting / Blast Signoff	<ul style="list-style-type: none"> • Individual meetings with all residential structure owners within 800 meters of proposed quarry expansion area. • All residents signed Blast Authorization documents to allow for future blasting within 800 meters of residential structures 		
	February 15, 2018 - Public Notices	<ul style="list-style-type: none"> • Notification published in the Chronicle Herald and Cape Breton Post 		
	February 15, 2018 - Public Viewing Locations	<ul style="list-style-type: none"> • EA Registration Document available for review at the Dingwall Post Office, St. Margaret's Village Post Office, and NSE Regional Office 		
Victoria County District 8 Councillor Norman MacDonald	January 16, 2018 - Email	<ul style="list-style-type: none"> • Email notification for pending application, including high level information regarding site and EA process, and offer to meet to discuss 	<ul style="list-style-type: none"> • No concerns noted 	N/A
	February 7, 2018 - Meeting	<ul style="list-style-type: none"> • Meeting with local political stakeholders to provide project update. Included general discussion on quarry operations in Nova Scotia, overview of portable crushers and asphalt plants, general information on rock quality and highway infrastructure, and detailed discussion on the EA and IA process 		
Victoria County District 3 Warden Bruce Morrison	January 16, 2018 - Email	<ul style="list-style-type: none"> • Email notification for pending application, including high level information regarding site and EA process, and offer to meet to discuss 	<ul style="list-style-type: none"> • No concerns noted 	N/A
	February 7, 2018 - Meeting	<ul style="list-style-type: none"> • Meeting with local political stakeholders to provide project update. Included general discussion on quarry operations in Nova Scotia, overview of portable 		

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Stakeholder	Description of Engagement	Summary of Engagement	Concerns Identified	Concerns Addressed
		crushers and asphalt plants, general information on rock quality and highway infrastructure, and detailed discussion on the EA and IA process		
MLA Victoria-The Lakes Mr. Keith Bain	January 16, 2018 - Email	<ul style="list-style-type: none"> Email notification for pending application, including high level information regarding site and EA process, and offer to meet to discuss 	<ul style="list-style-type: none"> No concerns noted 	N/A
	February 7, 2018 - Meeting	<ul style="list-style-type: none"> Meeting with local political stakeholders to provide project update. Included general discussion on quarry operations in Nova Scotia, overview of portable crushers and asphalt plants, general information on rock quality and highway infrastructure, and detailed discussion on the EA and IA process 		
Nova Scotia Environment Mr. Malcolm MacNeil	January 11, 2018 - Email	<ul style="list-style-type: none"> Email notification for pending application, including offer to meet to discuss 	<ul style="list-style-type: none"> No concerns noted 	N/A
	February 1, 2018 - Meeting	<ul style="list-style-type: none"> Meeting with NSE regional office to provide project update. Included discussion on baseline studies completed and high level outcomes, EA study area vs. EA expansion area, public and First Nation engagement, and registration timelines. 		
Kwilmu'kw Maw-klusuaqn Negotiation Office Ms. Twila Gaudet	November 1, 2017 - Notification Letter	<ul style="list-style-type: none"> Advance notification letter, including brief description of project, summary of First Nation findings, offer to meet to discuss No response received 	<ul style="list-style-type: none"> No concerns noted 	N/A
	January 31, 2018 - Notification Letter	<ul style="list-style-type: none"> Second notification letter, including EA registration date, copy of public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss No response received 		
Wagmatcook First Nation Chief Norman Bernard	November 1, 2017 - Notification Letter	<ul style="list-style-type: none"> Advance notification letter, including brief description of project, summary of First Nation findings, offer to meet to discuss No response received 	<ul style="list-style-type: none"> No concerns noted 	N/A

Table 1. Money Point Quarry Environmental Assessment – Stakeholder Engagement Summary

Stakeholder	Description of Engagement	Summary of Engagement	Concerns Identified	Concerns Addressed
	January 31, 2018 - Notification Letter	<ul style="list-style-type: none"> • Second notification letter, including EA registration date, copy of public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss • No response received 		
Millbrook First Nation Chief Bob Gloade Mr. Gerald Gloade	November 1, 2017 - Email	<ul style="list-style-type: none"> • Received and responded to email request from Millbrook First Nation with update on the status of various EA initiatives, including proposed Money Point Quarry Expansion 	<ul style="list-style-type: none"> • No concerns noted 	N/A
	November 1, 2017 - Notification Letter	<ul style="list-style-type: none"> • Advance notification letter, including brief description of project, summary of First Nation findings, offer to meet to discuss • No response received 		
	January 31, 2018 - Notification Letter	<ul style="list-style-type: none"> • Second notification letter, including EA registration date, copy of public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss • No response received 		
Native Council of Nova Scotia Chief Lorraine Augustine	November 1, 2017 - Notification Letter	<ul style="list-style-type: none"> • Advance notification letter, including brief description of project, summary of First Nation findings, offer to meet to discuss • No response received 	<ul style="list-style-type: none"> • No concerns noted 	N/A
	January 31, 2018 - Notification Letter	<ul style="list-style-type: none"> • Second notification letter, including EA registration date, copy of public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss • No response received 		
Office of Aboriginal Affairs Mr. David Mitchell	November 1, 2017 - Notification Letter	<ul style="list-style-type: none"> • Advance notification letter, including brief description of project, summary of First Nation findings, offer to meet to discuss • No response received 	<ul style="list-style-type: none"> • No concerns noted 	N/A
	November 1, 2017 - Email	<ul style="list-style-type: none"> • Forwarded copy of Notification letter via email 		

Table 1. Money Point Quarry Environmental Assessment – Stakeholder Engagement Summary

Stakeholder	Description of Engagement	Summary of Engagement	Concerns Identified	Concerns Addressed
	January 31, 2018 - Notification Letter	<ul style="list-style-type: none"> • Second notification letter, including EA registration date, copy of public notice and publish locations, location of hard and electronic copies available for review, deadline for submission of comments, offer to meet to discuss • No response received 		
	January 31, 2018 - Email	<ul style="list-style-type: none"> • Forwarded copy of Second notification letter via email 		

With respect to the First Nations Community, Dexter has followed the Proponent’s Guide: The Role of Proponents in Crown Consultation with the Mi’kmaq of Nova Scotia. In this regard Dexter has advised Chief Norman Bernard (Wagmatcook/Margaree 25) of it’s intent to file the Registration Document for a Class 1 Undertaking under Section 9 (1) of the NS Environmental Assessment Regulations in a letter dated November 1, 2017. Dexter also copied this letter to Ms. Twila Gaudet of the Kwilmu’kw Maw-klusuaqn Negotiation Office (KMKNO), Chief Lorraine Augustine of the Native Council of Nova Scotia, Chief Bob Gloade of Millbrook First Nation, and Mr. David Mitchell of the Office of Aboriginal Affairs. A copy of this letter is included in **Appendix F**. A follow up letter was also sent to all noted First Nation representatives on January 31, 2018 advising of the EA registration date, public viewing locations, and timelines for the submission of comments. A copy of this letter is included in **Appendix F**. No concerns regarding the project have been received from the First Nations Community to date. Dexter will continue to liaison with the First Nation Community when appropriate, and forward any comments received regarding the Project to NSE.

4.2 Public Concerns

No public concerns regarding the project have been received to date. Dexter will document any concerns received during the public consultation portion of the EA process, and provide a copy to NSE.

4.3 Future Steps

The public will be notified of the EA Registration by an advertisement in the Chronicle Herald and the Cape Breton Post on February 15, 2018. A copy of the newspaper advertisement is included in **Appendix F**. During the development of the EA Registration, Dexter has engaged the Wagmatcook/Margaree 25 First Nations, KMKNO, Millbrook First Nation, Office of Aboriginal Affairs and the Native Council of Nova Scotia. No concerns regarding the project have been received from the First Nations Community to date. Dexter has met with Nova Scotia MLA, Mr. Keith Bain, Warden/Councillor (District # 3) Bruce J. Morrison, and Councillor Norman MacDonald (District # 8) and provided them with an overview of quarry operations, details on the history of the Money Point Quarry, and discussed the EA process, as well as advised of the upcoming newspaper advertisements and indicated the EA document is available for review at the associated viewing locations.

5.0 DESCRIPTION OF THE UNDERTAKING

5.1 Existing Quarry Operations

The existing quarry operations involve blasting, crushing, washing and stockpiling of aggregate and associated trucking on an as required basis. In addition, a portable asphalt plant is occasionally situated on the property. The quarry is operated in accordance with an existing Industrial Approval (Approval No. 2010-072527-01), which was most recently amended and re-issued on August 21, 2017 by NSE. A copy of the Industrial Approval (NSE File # 92100-30-SYD-072527) is also attached in **Appendix A**. The quarry also operates in accordance with the Nova Scotia Pit and Quarry Guidelines. These Guidelines apply to all pit and quarry operations in the Province and provide separation distances for operations, including blasting, liquid effluent discharge limits, suspended particulate matter limits, sound level limits and requirements for a reclamation plan and security bond. Dexter is committed to the utilization of Best Management Practices in all phases of their operations, including the on-site management of air quality, greenhouse gas emissions, noise, dust, and water quality and will operate in accordance with applicable Federal and Provincial legislation and standards.

Blasting, crushing, washing and trucking have occurred on an as required basis, however it is noted that blasting has occurred on an average of one to two times per year. As the quarry expands, surface water controls will be maintained and associated surface water monitoring will be implemented to ensure that surface water leaving the site meets all applicable water quality guidelines

With respect to the characteristics of the quarry bedrock, Dexter arranged for the collection and analysis of a rock sample for sulphur content to determine if the material was sulphide bearing. The results of this analysis yielded a sulphur concentration of 0.005 % (0.16 kg H₂SO₄/tonne), which is well below the minimum (0.4 % S; 12.51 kg H₂SO₄/tonne) defined by NSE as sulphide bearing material and is therefore not acid producing. The laboratory results of this sample, and an associated lab duplicate, are included in **Appendix C**.

5.2 Future Quarry Operations

Dexter proposes to expand the Money Point quarry for the extraction, storage and removal of aggregate, primarily used in the road and local construction industry. This EA is focussing on current needs, but also future needs; therefore Dexter is requesting the EA approval for approximately 12.7 hectares, which includes a production and operational footprint, storage (stockpiles) and provisions for surface water control.

Although totally dependent on local market conditions, it is anticipated, at this time, that future development will involve the production of approximately 25,000 to 50,000 tonnes of aggregate per year, for a period of approximately 20 to 40 years. The rock face would be initially constructed in a northwest direction from the existing face (**Drawing # 2, Appendix B**). **Drawing # 2, Appendix B** identifies the total 12.7 hectare expansion area.

Quarry operations will generally coincide with the road construction season; therefore it would be reasonable to anticipate seasonal operations within a similar time frame (April – December). The quarry will operate when and as required within the typical 32 week construction season, depending on local demand and project requirements. Dexter is committed to the utilization of Best Management Practices in all phases of their operations, including the on-site management

of air quality, greenhouse gas emissions, noise, dust and water quality, and will operate in accordance with applicable Federal and Provincial legislation and standards.

Aggregate production would commence with drilling and blasting and is consistent with current operations. A qualified blasting contractor would conduct this work. The blasting contractor would be responsible for blast designs and methods in accordance with the General Blasting Regulations contained in the Nova Scotia Occupational Health and Safety Act, 1996. Blasting would also be conducted in accordance with the Pit and Quarry Guidelines. Blasting and noise level guidelines respecting the time of day/day of the week will be followed and blast monitoring will be conducted for every blast event. The existing Industrial Approval stipulates blasting control and monitoring requirements.

It is anticipated that aggregate excavation will not take place below the deep bedrock water table. A minimal amount of unconsolidated material and upper fractured bedrock water may be encountered; however this water, if encountered, will be directed to a surface water and sedimentation control system for treatment and controlled release.

The blasted rock will be excavated with an on-site excavator and processed by on-site portable crushing equipment. The various aggregate products will be stockpiled in designated areas within the quarry. Material, within the quarry, will be hauled and moved with a front-end loader. Products will be transported from the quarry via tandem and tractor trailer trucks via 6014 Road (1.7 km) to the Bay St. Lawrence Road and will be routed as necessary through the provincial highway and roadway network to support local projects. The number of trucks hauling aggregate will be determined on a job by job basis, however as the site is not expected to increase in level of activity, trucking activity is not expected to increase from past use. Employment numbers are expected to remain consistent throughout the on-going operation.

6.0 DESCRIPTION OF THE ENVIRONMENT

6.1 Human Uses of the Environment

6.1.1 Mi'kmaq

The Mi'kmaq maintain aboriginal claim to all of the landmass of Nova Scotia, and the Province of Nova Scotia maintains a policy that proponents of industrial development projects consult with the Mi'kmaq concerning their activities. Dexter Construction has contacted First Nations representatives concerning the present Money Point Quarry expansion project. The study area was once contained within a Mi'kmaw territory known as Wunama'kik ('Foggy Land'). As there are no significant waterways or water bodies that would have been relied upon for transportation and sustenance, the area was unlikely a major resource base for the Mi'kmaw, their ancestors and predecessors prior to the arrival of European settlers, and the coastal lowlands around Bay St. Lawrence would have been more important. There are no records of specific traditional use within the study area by Mi'kmaq; however, there are six traditional use areas approximately three kilometers north of the study area, which indicate use for hunting, fishing, and an encampment (Cultural Resource Management Group (CRM), 2016). Additionally, the Cape Breton highlands are a traditional area for hunting moose (CRM 2016). Presently, no significant Mi'kmaq cultural activities occur in or around the study area although traditional fishing and hunting, in particular moose hunting, continues in the general area of Bay St. Lawrence.

Many of Nova Scotia's Mi'kmaq reside in Cape Breton and access lands throughout the region for various uses such as hunting and fishing, as well as traditional ceremonial activities. The

nearest First Nations communities are Wagmatcook, situated in Victoria County on the western side of the Bras d'Or Lakes just west of Baddeck and about 105 km from the quarry site; and Waycobah, about 125 km from the site, also along the Bras d'Or, in Inverness County. The small (0.9 ha) Margaree I.R. 25 Reserve in the Margaree Valley is 85 km southwest of the quarry site, and is administered by the Waycobah First Nation.

Two tribal councils exist in Nova Scotia: the Confederacy of Mainland Mi'kmaq (CMM) and Union of Nova Scotia Indians (UNSI). CMM is a not-for-profit organization incorporated in 1986, whose mission is to promote and assist Mi'kmaq communities. The UNSI, created in 1969, was formed to provide a cohesive political voice for Mi'kmaq people. The Native Council of Nova Scotia (NCNS) represents Mi'kmaq people living off reserve. The NCNS is a self-governing agency located in Truro. The Office of Aboriginal Affairs in Nova Scotia estimates that approximately 35% of Mi'kmaq live off-reserve. The goal of NCNS is "to operate and administer a strong and effective Aboriginal Peoples Representative Organization that serves, advocates and represents our community."

The Mi'kmaq Rights Initiative (*Kwilmu'kw Maw-klusuaqn; KMK*) also represent a number of the First Nations in Nova Scotia. The mission of KMK—whose name means, "we are seeking consensus"—is "to address the historic and current imbalances in the relationship between Mi'kmaq and non-Mi'kmaq people in Nova Scotia and secure the basis for an improved quality of Mi'kmaq life." KMK's objective is to negotiate between the Mi'kmaq of Nova Scotia whom it represents, the province and the Government of Canada, and operates from its main office in Millbrook. The Atlantic First Nations Environmental Network (AFNEN) is an environmental organization of Mi'kmaq communities and organizations. The CMM and UNSI are members of the AFNEN, with the Mi'kmaq Confederacy of PEI in Charlottetown currently the acting coordinator. The AFNEN includes a representative from each Mi'kmaq organization and community interested in environmental issues. The Network meets regularly during the year through meetings, conferences, and the Internet to discuss environmental matters or concerns.

6.1.2 Population and Economy

The Municipality of the County of Victoria is a largely rural municipality located at the north-eastern tip of Nova Scotia. Population is approximately 7,000, and has been declining over the past several decades, dropping 6.3% between 2006 and 2011, but has been stable between 2011 and 2016 (Statistics Canada 2017). The two main population centres in Victoria County are Ingonish and Baddeck (the existing quarry is located approximately 30 kilometers north of Ingonish). Victoria County has the highest percentage of small businesses of all Cape Breton counties because of the focus on natural resources and tourism (Anon 2014). Traditionally, the main industries in the County were fishing along the coast, and farming and forestry inland. Today, tourism is an important local industry, with the Cabot Trail, as well as Cape Breton Highlands National Park, all being located partially within the boundaries of the County (Municipality of Victoria County 2014; Anon 2014). Visitors to Cape Breton Highlands National Park and the surrounding area visit scenic areas along the coast and utilize recreational features, namely coastal and wooded hiking trails. Local businesses around Bay St. Lawrence include a motel, bed and breakfasts, privately owned campgrounds in the general area, a Co-Op store, a credit union, offices of health professionals, and seasonal restaurants and take-outs. The fishery in areas off Bay St. Lawrence and into Aspy Bay support some of the highest landings of lobster in the Province (Coffen-Smout et al. 2013). Bay St. Lawrence is an important local fishing port while many locals also participate in fisheries on the east and west coasts of the island. Lobster, crab, herring, mackerel, and groundfish species such as flounder and hake are harvested in the area when in season (Anon 2003). The fishery is relatively small, however, with average annual landed

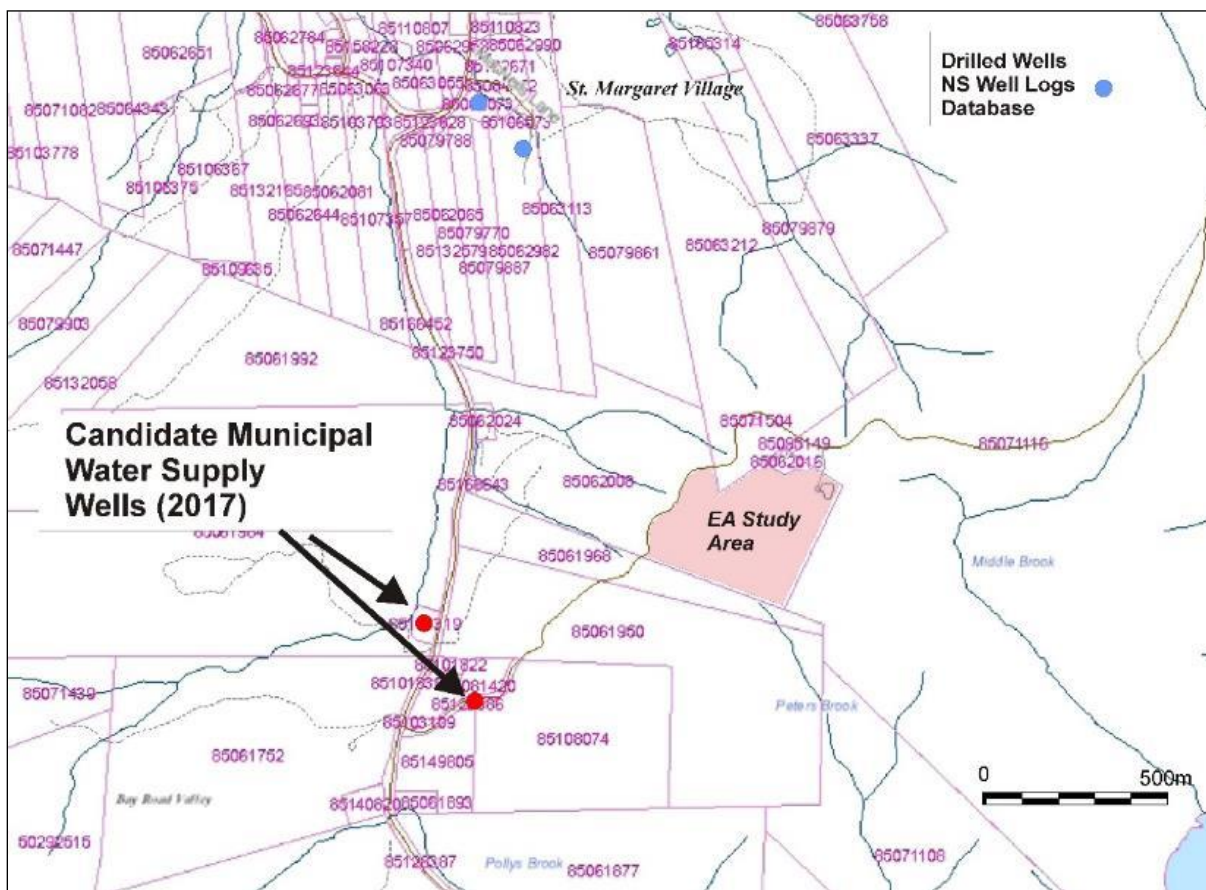
value of approximately \$17 million over the 2012-2016 period in the Aspy Bay – Sydney Bight (DFO Statistical Areas 1 & 4—compared with about \$99 million in the Sydney Area (DFO Policy and Economics Branch, Maritimes Region, 2017). Lobster accounts for most (81%) of landed value, followed by sea scallops and crab combined (12%).

In addition to wild saltwater fisheries, eleven shellfish aquaculture leases and a shellfish hatchery for American Oyster and Blue Mussels are operated in the Aspy Bay area (North Harbour and South Harbour) and contribute to the local economy (Government of Nova Scotia 2017). Unlike other parts of Nova Scotia, forestry is not a major contributor to the economy, in part because of the large amount of protected land in parks and wilderness areas, although local private landowners harvest wood commercially and for firewood. Communities in the area face some of the same challenges as elsewhere in rural Nova Scotia, including lack of economic growth and an aging population. Median gross household income for Victoria County is approximately \$72,476—comparable to the median family income for Nova Scotia (\$77,136) (Statistics Canada Online 2017).

6.1.3 Water Supply and Residential Wells

Nine homes occur within 1 km of the study area. Local residents suggest the majority of the households use a combination of spring-fed water systems and dug wells. The nearest drilled wells recorded in the NS well log database are a commercial well located at the Bay St. Lawrence Co-op approximately 1.35 kilometres from the existing quarry, and a residential well located approximately 1.15 kilometres from the existing quarry (Kennedy and Fisher 2013) (Figure 24). Several of the homes along Bay St. Lawrence Road have a combination of gravity fed and shallow surface well systems. One such spring-fed source, which supplies two nearby residences on Bay St. Lawrence Road, originates in a ravine on the east side of the 6014 Road (“Mountain Road”) used by the quarry, and is only about 2 m off the edge of the road. The Municipality of Victoria recently (January 2017) drilled two community water supply test wells, one of which is in the vicinity of this residential supply (Figure 3), and the second which is opposite civic 2648 Bay St. Lawrence Road. The Municipality has been, and is continuing, water quality and flow tests on these wells, most recently in late-October 2017, to confirm their suitability as a municipal water supply for the area (R. Dauphinnee, personal communication, 2017).

Figure 3 – Drilled wells and candidate municipal water supply wells in vicinity of Money Point Quarry.



6.1.4 Land Use

Land in the vicinity of the quarry is predominantly wilderness and undeveloped forest land, with rural residential use concentrated along the Bay St. Lawrence Road and in the lowland surrounding the communities of St. Margaret Village and Bay St. Lawrence. Limited forestry and commercial use (e.g. quarries) as well as residences, small woodlots, and home-operated businesses are found nearby. Travel routes are used by tourists and outdoor recreational enthusiasts. Hunting, trapping and commercial fishing from the harbour at Bay St. Lawrence are important local activities. A handful of residences are also located along Bay St. Lawrence Road, which is the main travel corridor in the area. Land ownership in the vicinity is a mix of privately owned land and Crown land in the general vicinity (Appendix D, Map A-3).

6.1.5 Hunting and Trapping

The Money Point quarry site supports many of the common game and fur-bearing species characteristic of Nova Scotia in general, although the remoteness of the site and the prevalence of protected land and active management, allows some less common fur-bearing species, such as Canada Lynx and American Marten, to maintain a presence. Some hunting or trapping activity may take place in the general vicinity of the site, although trapping statistics indicate that Victoria

County as a whole has a small harvest of most species. Moose are relatively abundant and are known to overwinter in the area, and White-tail Deer are also common, although the County typically ranks lowest of the counties for deer harvest in Nova Scotia. The main furbearers trapped in 2016-2017 were muskrat and coyote, but Victoria County had the lowest beaver, mink and bobcat harvest of any Cape Breton County in 2016-2017, and no lynx, marten, or fisher were trapped there. Snowshoe Hare, Ruffed Grouse, and Ring-Necked Pheasant are the most hunted upland game (Table 2). The four Cape Breton counties have the lowest harvest of Black Bear in Nova Scotia, and harvest in Victoria County is second lowest in the Province, accounting for about 1.3% of provincial harvest (Table 2). Moose are an important contributor to the hunting economy both for Mi'kmaq and for non-natives, and northern Cape Breton is an important area, and the only area where moose hunting is licensed. One resident noted that moose were very abundant in the general area. The northern parts of Inverness and Victoria Counties (Provincial Moose Hunting Zones 1 & 5 which include the study area) have the highest success rate (harvest for level of effort) for moose harvest in Cape Breton.

Table 2. Five-year summary of wildlife harvested in Victoria County and Nova Scotia (2012 – 2016).

Animal	Victoria Co. Reported Harvest	Provincial Reported Harvest	Percent (%) of total for province
Large Mammals			
Deer*	104	47 839	0.2%
Bear	18	1399	1.3%
Moose**	Not Available	240	--
Upland Game			
Snowshoe Hare	3187	352 605	0.9%
Ruffed Grouse	10 922	222 699	4.9%
Ring-necked Pheasant	207	23 604	0.9%
Fur Harvest (Furbearers)			
Beaver	140	22 114	0.6%
Muskrat	168	82 662	0.2%
Otter	68	2370	2.9%
Mink	28	7424	0.4%
Bobcat	52	4107	1.3%
Fox	81	2585	3.1%
Raccoon	16	11 197	0.1%
Skunk	0	293	0.0%
Squirrel	119	8269	1.4%
Weasel	79	3742	2.1%
Coyote	402	10 347	3.9%
Lynx	1	58	1.7%
Marten	5	36	13.9%
Fisher	3	815	0.4%
Total Furbearers	1162	156 019	0.7%
* 2010 – 2015. ** Moose are only harvested in the four Cape Breton Counties.			

6.1.6 Forestry & Agriculture

Forestry is one of the mix of industries in Victoria County but its impact here is relatively small compared with the rest of Nova Scotia supporting only 3.1% of the provincial labour force engaged in forestry—among the lowest in the province (APEC 2004).

Farming is not a large economic sector in Victoria County and in the immediate study area, accounting for only 0.23% of all farm receipts reported in Nova Scotia in 2010. Victoria County farms reported a total of approximately \$1.38 million in farm receipts and a net value of \$120,000. Main agricultural activities in Victoria County are cattle ranching and animal production (NS Federation of Agriculture 2014). Little of the agricultural activity would be concentrated in the northern parts of Cape Breton, including the study area, largely due to the terrain and lack of agricultural land, although in the early days of settlement, local agriculture was more important. Lowland areas around Bay St. Lawrence and the Aspy Bay-Dingwall area have soils with greatest capability for agriculture, but soils at the quarry site are generally unfit for agriculture. Agri-tourism is not established in Victoria County to the same extent that it is in other parts of Nova Scotia (NS Federation of Agriculture 2014).

6.1.7 Recreational, Commercial and Mi'kmaq Fishing

Recreational fishing provides an important resource and pastime for residents of Victoria County and marine fisheries are the mainstay of Bay St. Lawrence in the area. Lobster is the main fishery at the site, with upwards of fifteen vessels from the local community and the adjacent communities of Capstick and Meat Cove using the harbour there. Marine fishing and the estuarine waters of Deadman's Cove are likely used recreationally, and species including American eel and rainbow smelt occur there. The study area itself is not particularly important for freshwater recreational fishing but rivers in the Bay St. Lawrence area (e.g. Salmon River) and Polly Brook, which originates near the site and flows towards Dingwall, is probably fished recreationally. Mi'kmaq individuals' residing in the area likely use the limited fishing resource as well. Other streams in the area are either too small, are not accessible, or have too steep a gradient to promote fishing.

6.1.8 Historical, Archaeological and Paleontological Resources

The land within the study area was once part of the greater Mi'kmaw territory known as *Wunama'kik*, meaning 'Foggy Land' (CRM 2016). Mi'kmaq originally occupied the area, with Europeans entering in the late 1700s to 1800s when they pursued mainly agriculture and forestry (CRM 2016). Money Point is named after a cove about 2 km from the Money Point lighthouse, where a French Galleon was wrecked and, for years, gold coins kept washing ashore.

Prior to the arrival of European settlers, Mi'kmaq would have used lakes and small watercourses as transportation corridors, providing access to the resource base. The Money Point Quarry site, however, lacks significant rivers, lakes or other freshwater sources that would have been suitable—in particular, sites used for hunting, fishing, and associated encampments. The remaining Cape Breton highlands are, however, a traditional area for hunting moose, and Mi'kmaq moose harvest continues today (CRM 2016). Cabot's Landing Provincial Park in Sugarloaf, about 4 km south of the site, is thought to be a launching site for Mi'kmaq ocean paddlers whose journeys may have included destinations in coastal Newfoundland.

Archaeology database searches show no records of archaeological sites within the study area, and historic maps do not indicate settlement, except nearer to associated roadways (CRM 2016; S. Weseloh-Mckean, Coordinator, Special Places, personnel communication, 2017). Based on the lack of historic land use; signs of development such as roads or structures in the vicinity of the Money Point Quarry site; site reconnaissance and the absence of signs of settlement; and other limiting physical factors such as topography, slope and distance from significant fresh water sources, the study area is considered to have low potential for encountering Precontact and/or early historic Native archaeological resources (CRM 2016).

6.1.9 Parks and Protected Areas

The Province of Nova Scotia actively protects natural landscapes and promotes and supports nature-based recreation and conservation through its Provincial Parks system and through management and protection of some of its Crown Lands and a federal national park—Cape Breton Highlands National Park—also occurs south of the site. Several wilderness and protected areas, and a Provincial Park, have been designated in the general area of the quarry site: Polletts Cove-Aspy Fault Wilderness Area (designated); Cabot's Landing Provincial Park; and Cape Breton Highlands National Park. There are also several special wildlife management areas in the vicinity of the study site for Canada Lynx, American Marten and Bald Eagle, and Cape North and Money Point are included in an Important Bird Area (IBA) of that name (IBA Canada, 2017).

The Polletts Cove-Aspy Fault Wilderness Area occupies much of the land west of the study area, spanning both Victoria and Inverness counties. This wilderness area covers 27,235 hectares, providing protection for the unique highland and coastal features of Cape Breton Nova Scotia, including headlands, forested canyons, and highland barrens (Figure 4). This regionally significant wilderness area provides good opportunities for recreational use such as hiking and hunting, and for which moose is a particular attraction in the area.

Cabot's Landing Provincial Park is located in Victoria County along Bay St. Lawrence Road in Sugarloaf, less than 4 km south of the quarry site (Figure 4). The 8.63 hectares encompass a protected beach along the shore of Aspy Bay (North Harbour Beach) and a national historic site with a cairn commemorating the landfall of John Cabot. The site features views of the steep faces of uplands in the Polletts Cove-Aspy Fault Wilderness Area and offers activities such as beachcombing, bird watching, hiking, and kayaking in addition to backcountry camping and fishing.

Cape Breton Highlands National Park is located in Victoria and Inverness counties south of the Polletts Cove-Aspy Fault Wilderness Area and consists of 94,870 hectares that protect more than 100 km of coastline, steep cliffs, deep river canyons, sheltered coves, rugged mountains and plateaus. It is one of the largest protected wilderness areas in Nova Scotia, and natural features include Acadian, Boreal and Taiga habitats, plants and animals.

A Special Wildlife Management Area for Canada Lynx occupies much of Cape North and Money Point on Crown Land there, abutting the quarry study area on the northeast, and as well includes several small patches west of the site. Lynx management areas were designated to protect small, remaining, isolated patches of Lynx distribution in the highland areas of Cape Breton.

American Marten are an important, rare, species in Cape Breton, and Special Management Areas have been designated south of the Cape Breton Highlands National Park to protect remaining small, fragmented patches of marten in the highland areas (northwest and southeast) of Cape Breton. Special management practices would apply regarding development within these areas.

Cape North and the Money Point-Bay St. Lawrence area (and the quarry site) are located within an Important Bird Area (IBA)—the Cape North – Money Point IBA NS030 (Figure 5). This designation, which has a global significance, reflects the landscape and local occurrence of Bicknells Thrush, a species listed as threatened under the COSEWIC, and Boreal Owl.

Figure 4 – Parks and protected areas in the vicinity of Money Point Quarry.

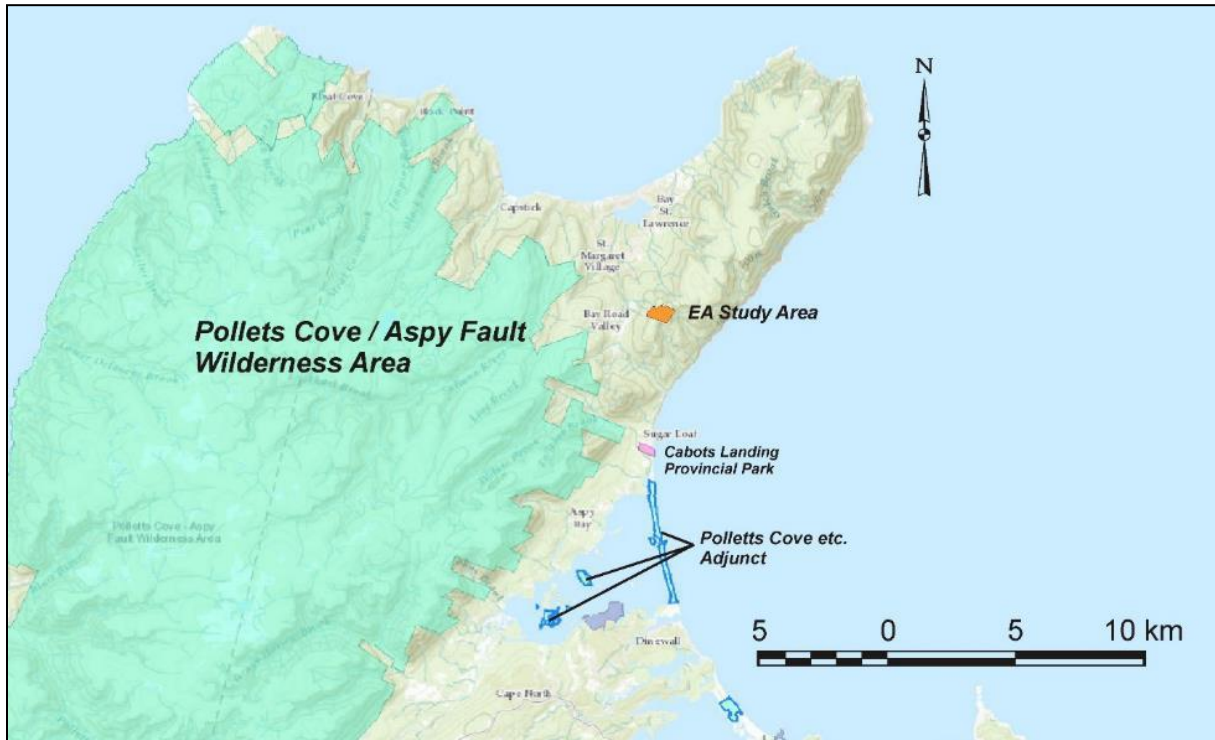


Figure 5 – Cape North - Money Point Important Bird Area (IBA) NS030.



6.1.10 Recreational/Cultural Activities

Residents and visitors to Victoria County access natural areas for a wide range of outdoor recreation activities. In the Bay St. Lawrence / Money Point area, the predominant outdoor recreational activities are sightseeing, camping, hiking and snow shoeing, use of ATVs and snowmobiling, as well as hunting and fishing. Locals use ATVs in summer and snowmobiles in winter to access trails running past the quarry. There is a commonly used hiking trail on the old access road to the Money Point lighthouse, and one on the 6014 Road past the quarry known as the Kauzmann Trail (<https://capebreton.lokol.me/the-kauzmann-trail>), which runs along the crest of North Mountain towards Money Point. Coastal areas from Bay St. Lawrence to Meat Cove are popular tourist routes and coastal lookoffs, with views of St. Paul Island (the most northerly part of Nova Scotia) in clear weather, visible from along the coast. South of the site, the Bay St. Lawrence Road offers spectacular scenic views of mountains, precipitous slopes, and the ocean, along the route between Aspy Bay and the study site. Cabot's Landing Provincial Park is located south of the site, and the nationally significant Cape Breton Highlands National Park are major attractions both for locals and visitors with opportunities for recreational use such as hiking, camping, golfing, and swimming.

6.1.11 Residential Use

Approximately a dozen single family homes and a commercial building (a former telecommunications maintenance shed at the corner of the 6014 Road and the Bay road) cluster mainly along the east side of Bay Road in the area (Appendix D, Map A-3). Lot sizes are large and may include surrounding tracts of forested land. Lifestyles of the residents of the general area along the Bay St. Lawrence Road near the Money Point quarry include younger individuals commuting away from the area for work, retirees maintaining their homes and properties, and residents working locally. Residents use the area and backcountry for recreation such as walking or hiking, and use of ATVs and winter snowmobiling, as well as for access to natural resources (e.g. firewood). The 6014 Road used to access the quarry is not ploughed in winter and is actively used by locals as a recreational trail. Locals also use a small private gravel pit near the foot of the 6014 Road for campfires. Four of five of the residents living closest to the quarry site were interviewed, none of whom indicated concerns over the operations and accept the presence of the quarry. The owner nearest the quarry road noted truck noise and dust associated with quarry operations, but considered it to be at acceptable levels. The nearest communities for services are Bay St. Lawrence Aspy Bay / Dingwall.

6.1.12 Commercial/Industrial Development

No active commercial establishments are in the immediate vicinity of the study area but a former telecommunications maintenance shed and garage is located at the junction of Bay St. Lawrence Road and the 6014 Road (Figure 6). Additionally, the quarry site is nearby a CBC Radio FM transmission tower. Most commercial activity in the St. Margaret Village and Bay St. Lawrence centres on tourism and food service including a Co-Op store but there is a Credit Union and a number of offices for professional services.

6.1.13 Tourism and Viewscape

Bay St. Lawrence Road is an important—and the only—travel route for tourists to the community of Bay St. Lawrence, and Meat Cove, which is a popular scenic tourist destination located at the very tip of Nova Scotia in Inverness County (Figure 1; Appendix D, Map A-1). Various trails extending into the back country, including the 6014 Road, are used by hikers, ATV users and snowmobilers, where they are provided with spectacular view in all directions, in particular to Bay St. Lawrence on the north (Figure 8) and Aspy Bay and its coastal barrier beaches to the southeast. The Money Point Quarry in its location on top of a prominence cannot be seen from adjacent areas along the road network and from Bay St. Lawrence (Figure 7) or by travelers at higher elevations along 6014 Road east of the site towards Money Point, although it may be visible from the highest elevations on the route to Money Point. Light and dust at the quarry site are visible from Bay St. Lawrence.

Figure 6 – Intersection of Bay St. Lawrence Road and 6014 Road leading to Money Point Quarry, looking north. June 22 2017.



Figure 7 – View of Bay St. Lawrence, and the location of the Money Point Quarry (not visible, just over the rise to the right of the first dip on the left). Bay St. Lawrence Valley is in the centre of the photo and the visible peak is Sugarloaf Mountain. June 22, 2017.



Figure 8 – View from 6014 Road near Money Point Quarry, towards Bay St Lawrence Harbour, June 2017.



6.1.14 Transportation

Bay St. Lawrence Road, which runs past the quarry site, is a provincial local road and the only highway connection between the Bay St. Lawrence area and the rest of Cape Breton. It supports mainly local traffic, including residential commuting within Victoria County and the rest of the island, as well as a supply route for local industries including the fishing port at Bay St. Lawrence, construction and quarrying, and for tourists visiting the area. The section nearest Money Point Quarry has a low to moderate traffic volume compared with other Highways in the Province, with an annual average daily traffic (AADT) of 810, 110 and 640 vehicles in the years 2008, 2011 and 2014 respectively (Nova Scotia Open Data Portal 2017), similar to the Cabot Trail near where the two highways merge near the community of Cape North ((810, 110 & 640 respectively) (Nova Scotia Open Data Portal 2017). Average daily traffic (ADT) in the same spring-summer period of the same years is higher (913, 102 and 1159 vehicles per day) and a similar relative pattern and traffic volumes are observed on the Cabot Trail (Nova Scotia Open Data Portal 2017). When in operation, the quarry will contribute truck traffic and some heavy equipment traffic (e.g. crushers, asphalt trucks etc.) in the vicinity of the site, typically in the summer / fall construction season. Access to the quarry from Bay St. Lawrence Road is unobstructed with good sight lines (Figure 6) and is not expected to create safety concerns.

6.2 Biophysical Environment

The biophysical environment includes all the features of the environment either physical or biological, that are in the vicinity of the Money Point quarry, and which are potentially impacted by it. Also included are impacts that physical and biological conditions can have on the project. The Biophysical Environment is summarized in the Biophysical Environmental Assessment of the

Money Point Quarry Expansion (Envirosphere 2018) found in **Appendix D**. The potential interactions of the project with the biophysical environment are outlined in Sections 7.0 and 8.0, which follow.

7.0 ENVIRONMENTAL IMPACTS, SIGNIFICANCE, AND MITIGATION

7.1 Assessment Approach and Methods

Information for the assessment was obtained from consultants' personal knowledge, from reviews of available information, and knowledge of the purpose and proposed design of the project. The environmental assessment follows *Guide to Preparing an EA Registration Document for Pit and Quarry Developments in Nova Scotia* (NSE September 2009) and uses assessment methodology typical for environmental assessment screenings of this kind. For this assessment a list of valued environmental components (VECs)¹ (also known as VCs)², and project activities and outcomes for the expansion of the existing quarry were developed, and the potential for interactions of these activities with VECs was identified. Where interactions were identified, and there was potential for significant impacts if mitigation was not undertaken, mitigating actions or activities have been suggested that will avoid the impact or reduce it to acceptable levels before the project proceeds. The process ensures that all potentially significant impacts on VECs are identified and all potential impacts on them have been considered, and sufficient mitigation planned.

7.2 Valued Environmental Components

The list of Valued Environmental Components considered for the assessment, and interactions with project components, are presented in Table 3. The environmental effects and potential impacts of the project along with their significance and suggested mitigations are outlined in the following and are summarized in Tables 4 & 5.

¹ Valued Environmental Components (VECs) are features or things in the environment, which are particularly important either ecologically, socially, economically or culturally. The environmental assessment addresses potential interactions of the project with each VEC identified, and assesses potential impacts. The process followed involves identifying all the activities or outcomes of the project, which interact with each VEC, and then determining and rating the magnitude of the impact in a standard way, in this case in a manner guided by standard approaches that have been developed for environmental assessments.

² Valued Environmental Components (VECs) and Valued Components (VCs) are equivalent. Use of the acronym VC is occurring more commonly as a result of its use in environmental assessments carried out under the federal environmental assessment process under the Canadian Environmental Assessment Act (2012).

Table 3. Valued Environmental Components (VECs) for Money Point Quarry Expansion.	
BIOPHYSICAL	SOCIO-ECONOMIC
Air Quality, Noise and Light	Mi'kmaq
Groundwater	Recreation, Tourism & Viewscape
Hydrology	Recreational, Commercial & Mi'kmaq Fishing
Water Quality	Archaeological, Cultural and Historical
Freshwater Aquatic Environments	Economy, Land Use and Value
Terrestrial Environments	Transportation
Fish & Fish Habitat	Residential Use
Flora & Fauna & Habitat	Commercial /Industrial Use
Species at Risk	Water Supplies & Residential Wells
Natural Areas & Wilderness	Parks & Protected Areas
	Forestry, Hunting & Trapping

7.3 Impacts on Human Uses

7.3.1 Mi'kmaq

The Mi'kmaq maintain a general interest in all lands in Nova Scotia and claim they have never surrendered, ceded, or sold the Aboriginal title, and that they claim all of Nova Scotia. As co-owners of the land and its resources, they expect that any potential impacts to rights and title be addressed (T. Gaudet, KMKNO, personal communication 2014). Mi'kmaq occupied much of Nova Scotia prior to European contact, and lands were used to varying degrees for habitation, hunting and fishing, as noted in Section 6.1.1. In more recent times, treaties made with the British and continued through Canadian law have maintained their rights. The Bay St. Lawrence Valley adjacent to which the quarry is located, may have been used as a transportation route as Mi'kmaq migrated between areas; however there is low potential for occurrence of Mi'kmaq archaeological resources at the quarry site (CRM 2016).

Operation of the Money Point Quarry will use land that would otherwise be occupied by terrestrial ecosystems and would not likely used for Mi'kmaq activities or by other residents for activities such as nature-walks, and hunting or fishing (either recreationally or for subsistence). Best management practices used at the site will reduce any potential impacts quarry activities may have on water quality and quantity. The land area affected is small in relation to the available wildlife habitat in the area, and would not likely affect moose populations, which are particularly important for Mi'kmaq hunting in the Bay St. Lawrence & Cape Breton Highlands area, and there are no likely cumulative effects of other activities in the area; consequently none of these effects are considered significant.

7.3.2 Recreational Activities

Recreational use and nature appreciation of the environment in the vicinity of the site consists principally of walking/hiking, camping, hunting, fishing, and general enjoyment of home-based recreation (e.g. gardening). Only hiking and nature appreciation, which takes place in the summer, would be affected by quarry activities—principally by vehicle traffic—and then principally when the quarry is operating. Operations at the quarry would be cyclic, likely occupying several weeks during the construction season during the years in which the site is active, and the facilities are well maintained. Although quarry operations could likely be heard and residents would experience truck traffic and other effects of quarry operations, the frequency and scope of the quarry is not

expected to increase from past use, and any impact on normal activities of residents as a result of the proposed quarry expansion are expected to be negligible.

7.3.3 Tourism and Viewscape

The Money Point quarry would have little influence on tourism and viewscape. The quarry is located approximately one kilometer from the Bay St. Lawrence Road, and is not currently visible from the highway. Truck and equipment traffic accessing and exiting the 6014 Road onto the Bay St. Lawrence Road is expected to be the main interaction with tourists. This traffic is expected to be occasional, will be similar now as in the future, and would likely be only a minor impediment to tourist vehicle traffic in the area. The intersection has good sightlines and is well maintained, and is not a particular safety concern; however use of signage (e.g. “Trucks Turning”) during periods of onsite activity, would improve safety by alerting travelers. Lights and dust, if present, at the site can be seen from Bay St. Lawrence, but would be controlled by proper environmental management practices at the site. Overall the impacts on viewscape and tourism are expected to be negligible.

7.3.4 Recreational, Commercial and Mi’kmaq Fishing

There are no significant watercourses supporting fish in the immediate vicinity of the quarry, and the presence of the quarry will not result in significant changes in flow regime or water quality in waterways downstream of the site. Water quality of the runoff from the quarry is likely to be good for salmonids, including low turbidity and neutral pH, which would lead to good quality of waters downstream for fish. Overall a negligible impact of the quarry on fishing is expected.

7.3.5 Economy, Land Use and Value

Hunting and trapping, marine fisheries, tourism, as well as rural-residential activities, are the major economic activities in the vicinity of the site and the study area as a whole. The land on the site is not suitable for agriculture or subsurface mining, and aggregate production is among the only potential commercial uses of the area. Land in the area is, however, also designated for conservation and wildlife management (i.e. Polletts Cove – Aspy Fault Wilderness Area; Cape Breton Highlands National Park) and as well contains habitat for valued species such as moose, which support hunting—an important activity for locals, visitors and Mi’kmaq alike. The expanded quarry will remove only a small fraction of available land for these purposes in the area, and therefore won’t have a significant impact on these uses. Areas not required for the quarry will be preserved if possible to assist in maintaining forest ecosystems for wildlife, and to buffer adjacent areas from quarry activities. Quarry activities are also not expected to impact existing residential, industrial or conservation and scientific use of nearby areas. As the quarry has been in operation for approximately 20 years, and the scope and frequency of activities are not expected to change from past use, residential property values in the area are not expected to change significantly. The existing quarry has been operating at the site with little to no impact, while providing economic development and a source of aggregate for local construction projects.

7.3.6 Transportation

The quarry generates a low level of truck traffic on highways in the area, but activity levels are not expected to increase significantly, and consequently the quarry is not expected to change the existing traffic volumes significantly. Suitable signage for truck and equipment operators, as well as the surrounding communities, would help avoid dangerous situations at the intersection of Bay St. Lawrence Road and 6014 Road. Parts of the 6014 Road to the quarry are steep and circuitous,

and the road is used by both quarry operators and locals, as well as tourists, who operate vehicles ranging from ATVs to SUVs and heavy trucks. Safe use of the road and avoidance of accidents is essential, both for human impacts and the potential impacts of vehicle accidents and spills on the local watercourses and environments. Warning signs and speed limits can be placed in areas leading to the quarry, in particular when the quarry is operating, to improve safety. Equipment and truck operators for the quarry can be given instruction on safe and environmentally acceptable procedures. With suitable foresight and care, overall the impact of the project on transportation and safety is expected to be minimal.

7.3.7 Residential Use

Quarry activities can potentially interfere with normal use and enjoyment of nearby residential properties by creating background noise, and through truck and equipment traffic, which some residents may find objectionable. The property is located approximately one kilometer from the Bay St. Lawrence Road, and is not visible. Noise from routine operations in the quarry would not normally disturb residents living nearby; truck movements along the 6014 Road and Bay St. Lawrence Road are responsible, however, for periodic elevated noise and dust levels. Control of vehicle speed, engine braking, securing equipment to prevent banging (e.g. doors and chains), covering loads, etc. would normally mitigate such effects. Normal traffic noise on Bay St. Lawrence Road would likely exceed any noise coming from the quarry for homes located nearby. Residents of homes along Bay St. Lawrence Road in the vicinity of the quarry when interviewed, have pointed out some of these issues associated with quarry operations. Activities at the quarry would be limited in time seasonally (approximately March to November) and during the day, although nighttime operations, but not blasting, will be required under some circumstances. Traffic volumes from the site would be moderate, and a high frequency of truck traffic would be an irregular occurrence, depending on the supply requirements for particular projects. Dust from operations is unlikely to reach residential areas. Dust generation could be moderate due to exceptionally high winds and the exposed high elevation of the site, but measures to control dust will be implemented and the adjoining forest areas would act as a buffer between the quarry and offsite receptors. Quarry activities such as blasting, are not expected to impact residential water supplies, as homes are located at a significant distance from the site, but a monitoring program for water supplies could be implemented to ensure changes, if any, suspected to be due to the quarry, are detected. Most operations at the site occur during daylight hours. On rare circumstances when they are undertaken at night, activities will involve minimal additional lighting and noise, and is unlikely to be a serious disturbance to local residents. The quarry will include signage with phone numbers and contact persons should any members of the community wish to register complaints or concerns. A complaint resolution procedure will be put in place by Dexter Construction Company Limited to address complaints and concerns.

7.3.8 Commercial/Industrial Use

With the exception of the CBC FM transmitter located adjacent the site, there are no commercial operations near the quarry which could be affected, and only a shop and garage associated with a telephone company on the Bay St. Lawrence Road. Businesses in St. Margaret Village and Bay St. Lawrence would be unlikely to see any effects. The transmission tower has been functioning through development of the quarry. The quarry is expanding away from the antenna, leading to less potential for effects. The quarry contributes to net economic benefit in the community through supporting local trucking operations and providing access to aggregate and other quarry products.

7.3.9 Water Supplies and Residential Wells

Nearby residents use spring fed water sources and dug surface wells for potable water supply, and a candidate water supply well, drilled recently by Victoria County, is also located near the base of the mountain along 6014 Road. Dexter will implement a groundwater monitoring program and will respond as necessary to input from local residents and the Municipality to ensure water quality and supply is maintained. Groundwater recharge generated by the quarry is likely to be of high quality (low conductivity and dissolved solids and neutral in pH). Additionally, best management practices for operations will be implemented to mitigate potential impact of aquifers at the site.

7.3.10 Parks and Protected Areas

The Money Point quarry site is not expected to be visible by tourists traveling from the main National (Cape Breton Highlands) and Provincial Parks (Cabot's Landing Provincial Park), and road traffic activity due to the quarry is not expected to be high enough in volume to disrupt tourist traffic. Occasional blasting may be heard in Cabot's Landing Provincial Park, but occurrences are likely to be brief, and distant, and not likely to be a significant concern to visitors/users of those areas. The quarry is adjacent to a Canada Lynx management area, and the species may from time to time visit the site, although the area of land occupied by the quarry represents only a small proportion of land in the area available to Lynx. The quarry will be restored at the end of its useful life. The Money Point quarry is not located in the Pollets Brook – Aspy Fault Wilderness area located west of the site, and expansion of the quarry will not affect its integrity. The quarry is, however, inside the Cape North – Money Point Important Bird Area, which contains habitat for several species of conservation concern, including Bicknell's Thrush and Boreal Owl. Noise levels, and the potential effect of noise on birds, will not be increasing over that which has occurred in past. Expansion of the quarry will result in only a small change in the amount of softwood and mixed forest at the site, and therefore is likely to have a negligible potential impact on Boreal Owl. A small area identified as having stunted forest, on the northwest side of the quarry, is ideal nesting habitat for Bicknell's Thrush. In developing the site to include this area, a breeding bird survey, focused on Bicknell's Thrush, should be conducted in advance to ensure nesting habitat is not disturbed.

7.3.11 Resource Use—Forestry, Hunting & Trapping

Use of the land for a quarry will remove the potential for logging the site, at least until after the quarry is closed and rehabilitated in future; however the area occupied by the quarry is relatively small in relation to the available forest resources in the area, timber harvesting is not a big industry in the area, and the overall impact on economic return is expected to be small. The quarry will occupy a relatively small area of habitat for furbearing and game species, and will not have a significant impact on hunting and trapping, and in particular on Moose populations, in the Bay St. Lawrence area.

7.4 Biophysical Impacts—Impacts of the Project on the Environment

7.4.1 Air Quality, Noise and Light

Quarry activities are not expected to change from the previous scope of operations, however various project activities have the potential to generate dust, combustion emissions, noise, and light. In particular, operation of heavy equipment (e.g. earth movers, crushers), rock drilling and blasting, operation of an asphalt plant, as well as onsite routine operations contribute to increased

dust and particulate levels. Noise levels can impact human use and enjoyment of the environment. Dust emissions during the construction phase will be localized and short term, and are expected to be minimal from routine operations. Dust management will be undertaken, including use of water spray and covering working and laydown areas with blasted rock. Monitoring of airborne particulate emissions will be conducted at the request of NSE and in accordance with the Pit and Quarry Guidelines and the Nova Scotia Air Quality Regulations. Industry standards and best practices will be followed during all phases of operations.

Exhaust emissions will be generated by the operation of vehicles and equipment. An asphalt plant may generate air-borne odours that can be detected at a distance from the site; however prevailing winds are generally from the southwest to northwest and the general direction of travel of such emissions would be into unpopulated areas and offshore. Given the scope of the planned operations, these emissions will be minimal (i.e. restricted to several pieces of heavy equipment, earth movers, trucks etc. as well as operation of crushers and asphalt plant), and will be localized and similar in type and amount to those produced during previous operations. Ambient air quality monitoring may be conducted at the request of NSE.

Noise levels from the expanded quarry are expected to be similar to those already produced at the site, since the operations are expected to be similar in size at a given time. The operator should ensure that they do not exceed those specified in the Nova Scotia Pit and Quarry Guidelines. Blasting is expected to occur infrequently (1-2 times per year).

Light during nighttime operations—particularly during times of low-hanging cloud and fog—can attract migrating birds traveling over water towards the rest of the mainland of Nova Scotia. Measures can be taken to ensure use of directional lighting, which minimizes emanation of light upward and laterally over the horizon.

7.4.2 Groundwater

Activities associated with the project including forest clearing, grubbing and removal of overburden, and blasting, influence groundwater flow locally in the vicinity of the quarry, but are not expected to influence groundwater aquifers in adjacent areas (i.e. on adjacent mountains or ridges). The amount of recharge area involved in project activities is moderate in relation to the overall size of the aquifers in the general vicinity; however the quarry floor will continue to add recharge in approximately the same amount as at present, although the response time in influencing groundwater flow would be shorter and the flows would be more sudden; overall, the effect on overall groundwater flow patterns will be negligible.

7.4.3 Hydrology

Expansion of the quarry will result in an artificial and managed regime of surface water movement and runoff at the site, but mainly precipitation will enter the water table through the quarry floor, and therefore not have a substantial impact on local springs and groundwater. Runoff from the quarry will be managed to ensure that it meets acceptable environmental standards. Exposed surfaces on the quarry and on the access road (6014 Road) lead to more sudden, 'flashy' runoff patterns during rainfall events; this has resulted in deepened ditches along the road, and deep-cutting of ravines, as well as increasing temporary flows in watercourses, downslope from the road. The steep slopes along the 6014 Road will not likely allow room for more flow management; however additional culverts and water diversions off the road surfaces would help reduce erosion. Dexter will maintain the flow management system in place and continue to manage the flow in a natural way and minimize damage to the local landscape.

7.4.4 Water Quality

Water quality downslope of the site is important for fish habitat in the unnamed stream that runs along Bay St. Lawrence Road and for spring-fed water supplies for residents in the area. Quality of water leaving the site and entering groundwater is high, due both to the onsite management and the low-contaminant characteristics of the bedrock. Quarry rock is within acceptable limits for sulphur and acid-generating potential. Blasting is not expected to result in groundwater quality changes, particularly with efforts to reduce releases of other chemicals such as nitrates used in blasting. Forest clearing and grubbing activities can lead to releases of fines from the soil, resulting locally in elevated suspended sediment levels but no flow is expected off the site and sediments may settle out before the water enters groundwater. Release of other contaminants such as oils and lubricants from operating equipment, as well as contaminants which may be found in material, such as recycled asphalt, which may be stored at the site, is expected to be mitigated by normal precautions on equipment operations and fuelling locations. Contaminants arising from operations of the quarry are expected to be exceedingly low. All activities will conform to the Nova Scotia Erosion and Sedimentation Control Handbook (NSE 1988) and the Nova Scotia Pit & Quarry Guidelines (NSE 1999). Runoff from road surfaces potentially can lead to elevated suspended sediment levels in flows running down ravines to streams such as the unnamed stream along Bay St. Lawrence Road, although effects would be short term, and the stream would naturally be exposed to short term episodes of suspended sediment. Impact of the quarry on water quality in adjacent streams and other waters is expected to be negligible.

7.4.5 Freshwater Aquatic Environments

The only permanent streams at the site are located outside of the study area to the west along Bay St. Lawrence Road, and several steeply sloping watercourses on the east and south flowing to the ocean. There are no ponds or wetlands at the site. Presently some runoff from the quarry flows along road ditches and surfaces near the quarry entrance, but otherwise is managed on site. Quantities of runoff arising from the site in future will be approximately the same as at present, and will remain in the same watershed. The quarry is unlikely to generate significant quantities of contaminants or suspended sediments that could impact any freshwater habitat.

7.4.6 Terrestrial Environments

Proposed expansion will utilize areas which are mainly medium-aged softwood and mixed forest—types which are common in the general vicinity, and in particular locally at the site—and the quarry will not remove a large proportion of either type. Land at the quarry will be reclaimed and revegetated, will eventually return to a functioning ecosystem, possibly similar to that which occurs at the site at present.

7.4.7 Fish and Fish Habitat

None of the proposed project activities will physically impact potentially fish bearing streams. Blasting occurs infrequently at the site and is sufficiently separated in distance from the unnamed stream along Bay St. Lawrence Road, to eliminate any harm to fish. Water quality typically found in runoff from the quarry will be monitored and is expected to meet guidelines for maintenance of Freshwater Aquatic Life. All guidelines for activities and timing of blasting in the quarry will be followed. Overall the effects of the quarry construction and operations are expected to be negligible.

7.4.8 Flora and Fauna and Habitat

The existing terrestrial ecosystem (plants and animals) will be removed in areas covered by the footprint of the quarry. With time, areas no longer suitable for quarry operations will be remediated, according to agreements made with the Nova Scotia government as a condition of quarry approval. Plant and animal communities that arise in remediated areas will likely differ to some degree from those at present; however a goal of remediation will be to ensure that conditions (e.g. soil types and topography) are reasonably restored to pre-existing conditions. During recovery and revegetation of abandoned areas, the forest succession will provide habitat for a moderate diversity of species. Removal of forest cover is a feature that quarry development shares with logging activities, which affects local ecosystems to a moderate degree, and is allowed in Nova Scotia. Areas of the site confirmed via survey to support Bicknell's Thrush (the area of stunted forest on the slope on the northwest side of the quarry site) will be avoided. No other species of conservation concern were highlighted which were in the proposed expansion area or areas immediately adjacent. Normal management practices regarding forest clearing, such as avoidance of critical breeding periods from mid- April to September, will reduce loss of nesting birds in forest areas. Several species of migratory birds are in decline in Nova Scotia, in particular interior forest birds, which rely on large expanses and continuity of intact forest. Other wildlife species need large areas of undisturbed forest to live and reproduce naturally. Expansion of the Money Point Quarry will result in only a comparatively small change in the coverage of natural and mature forest stands in the area and is expected to have comparatively small impact on interior forest birds and wildlife. During operations, modified areas of the quarry offer potential nesting sites for certain species of birds and other wildlife, including hunting spaces for species such as owls and nesting for ground nesting birds such as nighthawks, for example in currently existing revegetated areas (Appendix D, Figure 16); quarry employees should be educated on the need to check areas for activity and nests before undertaking activities which would disturb established surfaces. Night operations and use of lights have various effects, including attracting insects which otherwise would need darkness to mate and reproduce; light pollution is considered to be an important factor globally in decline of songbird populations, through declines in populations of some insects. Night operation lighting during migration periods (August-September) would attract migrating birds. Lighting used at the site should focus downward and below the normal horizon, to limit visibility by birds and insects from a distance.

7.4.9 Species at Risk

No species at risk were found at the site, although the stunted forest on the northwest slope of the site has the potential to support a rare Bicknell's Thrush, and Boreal Owl can occur in the area. Common Nighthawk, a ground-nesting endangered bird species, potentially could nest in grubbed and marginal but open areas of the quarry; employees should be made aware of the need to check areas for activity and nests before undertaking activities which would disturb established surfaces. Lights during night operations during migration periods (May-June, August-September) would attract various bird species and insects, which could include species at risk. Lighting used at the site should focus downward and below the normal horizon, to limit visibility from a distance.

7.4.10 Natural Areas & Wilderness

Natural areas at the site are appreciated by locals and tourists alike, and the Bay St. Lawrence area is dominated by natural areas, including some of the most remote and wild areas of Nova Scotia. The pockets of human development along the Bay St. Lawrence Road, around the harbour at Bay. St Lawrence, and along the coast of the Gulf of St. Lawrence to Meat Cove, contrast with

the wilderness areas in the Pollets Cove – Aspy Bay Fault Wilderness area to the west and the Cape Breton Highlands National Park located to the south. The Money Point Quarry is close enough to St. Margaret Village and Bay St. Lawrence to be considered part of the local development core, and is located along a road which leads to other human developments such as telecommunications towers, and hiking trails. The quarry affects a small proportion of the natural landscape at the site, and has a limited effect on visitors to the site who are looking for Nature experiences. Efforts shall be made to minimize the effects of the quarry, in particular to reduce traffic, noise, dust and light from operations. Restoration should also consider values important in conservation of biological communities and ecosystems, as well as changes in physical conditions that could affect those communities. Normal procedures such as dust control and light management will help to minimize impacts on natural and wilderness values at the site.

Table 4. Potential interactions between project activities and operations and Valued Environmental Components (VECs) for Money Point Quarry expansion.

General Category of VEC	Biophysical									Socioeconomic										
	Air Quality, Noise and Light	Groundwater & Hydrology	Water Quality	Freshwater Aquatic Environments	Terrestrial Environments	Natural Areas & Wilderness	Fish and Fish Habitat	Flora & Fauna Species & Habitat	Species at Risk	M'ikmaq	Cultural/Historical	Recreation, Tourism & Viewscape	Residential Use	Recreational, Commercial & Water Supplies/ Residential Wells	Economy, Land Use, and Value	Transportation	Commercial /Industrial Use	Parks & Protected Areas	Forestry Hunting /Trapping	
Project Component (potential interactions shown by ✓)																				
Construction																				
Site Acquisition, Use/Removal of Resources	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓
Site Clearing/Grubbing	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓				✓	✓
Drilling	✓	✓				✓		✓			✓	✓		✓					✓	
Blasting	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓		✓					✓	
Lights & Noise	✓					✓		✓	✓		✓	✓							✓	
Operation																				
Moving/Transporting Rock and Product	✓					✓		✓			✓	✓			✓	✓	✓	✓		
Crushing	✓					✓					✓	✓							✓	
Washing		✓	✓	✓			✓													
Lights & Noise	✓					✓		✓	✓		✓	✓							✓	
Site Runoff Management		✓	✓	✓			✓							✓	✓					
Portable Asphalt Plant	✓					✓		✓			✓	✓							✓	
Onsite Materials Storage			✓	✓										✓						
Accidents (Fires/Oil & Fuel Spills)	✓	✓	✓	✓		✓	✓	✓			✓	✓		✓					✓	✓

Table 5. Summary of impacts and mitigation on Valued Environmental Components, Money Point Quarry Expansion.

VEC	Project Component	Nature of Effect	Significance	Nature of Impact	Mitigation	Significance after Mitigation
BIOPHYSICAL COMPONENTS						
Air Quality, Noise & Light	Construction	Noise and dust from heavy equipment during site clearing and grubbing.	Significant	Negative	Take steps to reduce noise sources such as engine braking.	Not significant.
		Drilling and blasting.	Significant	Negative	Monitor noise levels and undertake to avoid exceedances of regulatory levels.	Not significant.
		Light from the quarry can be seen in neighbouring areas.	Significant	Negative	Use directional lighting with downward and lateral focus to minimize light leaving the quarry during night operations.	Not significant.
	Operation	Noise from drilling and blasting; crusher; heavy equipment operation; dust; air-borne emissions from asphalt plant.	Significant	Negative	Monitor noise levels and undertake to avoid exceedances of regulatory levels. Institute measures for dust control. Monitor and maintain asphalt plant to minimize emissions.	Not significant.
		Light from the quarry can be seen in neighbouring areas.	Significant	Negative	Use directional lighting with downward and lateral focus to minimize light leaving the quarry at night.	Not significant.
Groundwater/ Hydrology	Construction	Forest and soil removal changes surface and ground water flow levels and patterns.	Negligible	Negative	Use site runoff management to minimize impacts. Likely changes in groundwater and runoff patterns will be small.	Not significant.
	Operation	Blasting fractures bedrock, disturbs till, and changes	Significant	Negative	Drilled wells in bedrock and surface wells can be disturbed. Monitor groundwater	Not significant.

		groundwater flow patterns.			quality and movement to determine changes.	
	Operation	Quarry and work areas change surface water flows. Increased peak stormwater flows. Washing product creates silt-laden surface flows.	Significant	Negative	Onsite water management to moderate extreme surface water runoff and suspended sediment levels; measures to maintain normal flow regime.	Not significant.
	Operation	Accidental hydrocarbon spills and blasting residues contaminate groundwater.	Significant	Negative	Measures to minimize danger of spills; onsite emergency numbers, spill kits etc. Avoid refueling near watercourses.	Not significant.
Water Quality	Construction	Altered surface water flows and turbidity in watershed flowages from site runoff.	Negligible	Negative	Erosion and sedimentation controls in work areas. Onsite water management to moderate surface water runoff and suspended sediment levels.	Not significant.
	Operation	Dust & suspended sediment from operations potentially enters local watershed. Chemicals (e.g. nitrates) from explosives entering runoff.	Significant	Negative	Onsite dust control and water management to moderate surface water runoff and suspended sediment levels. Erosion & sedimentation controls. Closely monitor chemical residues after blasting.	Not significant.
	Operation	Water chemistry changes in runoff from materials stored on site.	Negligible	Negative	Best management practice allows leaving piles exposed to the environment. Monitor settling ponds; storm-water management.	Not significant.
Natural Areas & Wilderness	Construction & Operation	Presence of quarry, emissions, dust etc, detracts from	Negligible	Negative	Area affected is small in relation to remaining natural areas, and previous development has	Not significant.

		public perception of wild quality of area. Site is technically not far removed from civilization and is not wilderness.			occurred in the area, diminishing value of natural areas and wilderness. Attempt to minimize footprint and avoid damage to areas that contribute most to supporting the natural ecosystem and enhancing values. Manage releases of dust and light, and control noise.	
Freshwater Aquatic Environments	Construction	Potential for local high suspended sediments and nutrient levels from grubblings, road construction, and locally diverted flows.	Negligible	Negative	Preserve wooded buffer areas for quarry. Onsite water management and sedimentation controls to moderate surface water runoff and suspended sediment levels.	Not significant.
	Operation	Surface runoff with dust, nutrients and contaminants. Residues from aggregate washing. Reduced water availability from evaporation from pit floor and exposed surfaces.	Negligible	Negative	Maintain forested buffers. Onsite water management. Sedimentation ponds and storage wash water during off peak season. Minimize unvegetated areas.	Not significant.
	Operation	Higher peak flows and suspended sediment during activities.	Significant	Negative	Onsite water management to store wash water during off peak season. Preserve woodland in buffer areas of quarry.	Not significant.
	Operation	Runoff from 6014 Road.	Significant	Negative	Advise provincial authorities of maintenance needs.	Not significant.
	Operation	Releases of chemicals from blasting and runoff from	Negligible	Negative	Isolate and treat runoff from work areas and stored materials piles.	Not significant.

		materials stored on site.				
	Construction & Operation	Routine releases and accidental spills of hydrocarbons on site.	Significant	Negative	Provide pollution prevention and emergency measures.	Not significant.
Terrestrial Environments	Construction	Grubbing, road construction, pit preparation. Potential damage to unique stunted forest ecosystem, and associated species.	Significant	Negative	Maintain property boundary buffers. Conduct species specific breeding bird survey of stunted forest ecosystem northwest part the property prior to excavation. Monitor species-at-risk birds.	Not significant.
	Operation	Dust, nutrient inputs from runoff, changes to environment and functioning of forest communities.	Negligible	Negative	Maintain property boundary buffers. Conduct species specific breeding bird survey of stunted forest ecosystem northwest part the property prior to excavation. Be aware of critical times for rare species which might occur there.	Not significant.
Fish & Fish Habitat	Construction	Change runoff patterns at site in local and adjacent watersheds.	Negligible	Negative	Runoff management from 6014 Road and from quarry entrance, to avoid sudden runoff events.	Not significant.
	Operation	Site runoff management and water use affects hydrological and groundwater regime.	Negligible	Negative	Ensure the runoff from the site is managed to avoid sudden runoff events.	Not significant.
	Construction & Operation	Small releases of oils, hydraulic fluids etc. from operating equipment.	Negligible	Negative	Maintain equipment to minimize loss of lubricants and fuels. Provide pollution	Not significant.

		Accidental spills of hydrocarbons on site.			prevention and emergency measures.	
	Operation	Accidental spills into watercourses due to vehicle accidents on roads in area.	Negligible	Negative	Recommend safe driving practices for truckers and staff and reduce speed in vicinity of quarry and intersection on Bay St. Lawrence Road. Provide pollution prevention and emergency measures.	Not significant.
Terrestrial Flora & Fauna & Habitat	Construction	Removal of Existing Forest Communities	Negligible	Negative	Restore damaged and unused parts of the site (e.g. grubblings and waste rock piles) as soon as possible. Long-term site rehabilitation plan developed with NSE. Cut forest short term only as needed to expand quarry. Conduct species specific breeding bird survey of stunted forest ecosystem northwest part the property prior to excavation.	Not significant.
	Construction & Operation	Accidental contaminant releases, contamination of habitat.	Significant	Negative	Provide pollution prevention and emergency measures & response capability. Remediate areas affected by spills.	Not significant.
		Artificial light from operations influences movements of birds and insects.	Significant	Negative	Use directional lighting with downward focus to minimize light leaving the quarry.	Not significant.
		Removal of potential forest and wildlife resource (i.e. wildlife habitat)	Negligible	Negative	Small area affected relative to total available. Minimize footprint of quarry. Restore and rehabilitate areas not used. Leave	Not significant.

					mature standing trees where possible as nest cavities.	
		Quarry affects wildlife movement patterns and connectivity of habitats.	Significant	Negative.	Restoration should include consideration for wildlife movement through the restored site.	Not significant.
Species at Risk	Construction	Bicknell's Thrush potentially occurring in stunted forest at edge of site. Lynx may visit site.	Significant	Negative	Survey for additional occurrences of species. Develop management plan. Report sightings of Lynx. Minimize footprint and maintain as much natural (uncut) natural vegetation as possible. Avoid stunted forest area.	Not significant.
	Operation	Sound from blasting can harm bats and birds.	Negligible	Negative	Minimize blasting activity and concentrate in spring and fall (outside breeding and migratory periods) when species are absent.	Not significant.
		Light influences movements of species at risk birds migrating overland.	Significant	Negative	Use directional lighting with downward and lateral focus to minimize light leaving the quarry.	Not significant.
		Open and revegetated areas and grubblings piles may be occupied by nesting species such as nighthawks.	Significant	Negative	Educate personnel to look for bird life prior to activities; periodically conduct nesting bird survey at site to identify bird issues.	Not significant.
SOCIOECONOMIC COMPONENTS						
Mi'kmaq	Construction and Operation	Any land use conflicts with Mi'kmaq Right to Use Land	Significant	Neutral	Consult with Mi'kmaq in developing quarry.	Not significant.
		Contamination and alteration of flow regime of streams may affect fish	Negligible	Negative	Employ surface water monitoring program. Use Best Management Practices for	Not significant.

		populations potentially used by Mi'kmaq.			quarries. Avoid accidental releases of contaminants. Avoid vehicle accidents.	
Archaeological, Cultural and Historical Significance	Construction	Expansion may affect undiscovered artifacts.	Not significant	Negligible	Unlikely that artifacts occur at site. Stop work and report discoveries. Minimize project footprint.	Not significant.
Recreation	Construction & Operation	Quarry traffic & activities affects local light recreation (e.g. walking, hiking, ATV use).	Not significant	Negative	Users will be aware of activity at quarry but will not be otherwise impacted by it. Signage of truck use, dangers, and quarry activity.	Not significant.
Tourism and Viewscape	Construction & Operation	Presence of quarry affects public perception of wilderness values.	Negligible	Negative	Quarry cannot be seen from a distance. Dust & noise control. Maintain a clean operation. Rehabilitate areas no longer needed for activity and future development.	Not significant.
Residential Use	Construction & Operation	Noise; light pollution; dust; odours; operation of trucks and transportation of heavy equipment.	Significant	Negative	Use best management practices to reduce disturbance to nearby residents. Inform residents about quarry operations. Provide community with safety information for truck traffic and quarry operations.	Not significant.
Recreational and Mi'kmaq Hunting and Fishing	Construction & Operation	Accidental hydrocarbon spills and blasting residues contaminate surface waters.	Negligible	Negative	Not an important local activity. Provide pollution prevention, emergency measures & response capability. Identify and control contaminant releases.	Not significant.
	Construction	Loss of forested area under quarry footprint.	Not significant	Negative	Rehabilitate areas no longer needed for activity and future development.	Not significant.

					Minimize cutting outside quarry footprint.	
Water Supplies & Residential Wells	Construction and Operation	Blasting potentially impacts local aquifers.	Significant	Negative	Develop groundwater-monitoring plan in consultation with NSE. Monitor local wells.	Not significant.
Economy, Land Use and Value	Construction & Operation	Removal of potential forest and wildlife resource (e.g. forestry & trapping).	Not significant	Negative	Small area affected relative to total land available. Minimize footprint of quarry. Restore and rehabilitate areas not used.	Not significant.
Transportation	Operation	Wear on highway	Negligible	Negative	Current levels low and will not increase.	Not significant.
	Operation	Collisions with trucks and equipment on Bay St. Lawrence Road.	Not significant	No Change	Use good signage, have speed policy in vicinity of quarry. Safety training for truck drivers.	Not significant
Industrial & Commercial Use	Operation	Operations of TV Transmitter	Negligible	Neutral	Quarry helps to maintain access roads to site; cooperate if possible.	Not significant.
Resource Use Forestry, Hunting & Trapping	Construction & Operation	Removes woodland; game habitat.	Not significant	Negative	Relatively small area is used. Minimize footprint.	Not significant.
Parks and Protected areas	Construction & Operation	Noise and blasting can be heard from Cabot's Landing Provincial Park.	Not significant	Neutral	Employ best management practices for all aspects of quarry operation, in particular control of noise, light, & dust.	Not significant.

8.0 IMPACTS OF THE ENVIRONMENT ON THE PROJECT

The operating quarry will not be impacted in general by weather, including high rainfall and precipitation, through its nature and design, which includes site water management. Aggregate and other rock products stored at the site are stable under varying conditions of rainfall and wind. Integrity of any runoff management structures at the site must be maintained and appropriately designed to remove the possibility of catastrophic failure. Changing climate may increase the operating season for transportation projects, and the need for aggregates produced by the quarry.

9.0 CUMULATIVE IMPACTS

All the potential impacts of the quarry operation (dust, noise, lights, blasting, traffic volume) may be compounded by the presence of development in the nearby St. Margaret Village and Bay St. Lawrence communities and use of the 6014 Road for various activities, both recreational and commercial; however since site operations are not expected to increase in frequency or scope from past use, the cumulative effect is not expected to increase from past levels.

10.0 MONITORING

In accordance with Pit and Quarry Guidelines under the NS Environmental Act and the Industrial Approval for the quarry site, Dexter will implement surface and groundwater monitoring programs to monitor hydrological conditions (e.g. runoff patterns and flows) as well as water quality. Routine monitoring of noise levels and particulate levels will be conducted in accordance with the site Industrial Approval.

11.0 PUBLIC CONSULTATION

Informing the public and Mi'kmaq about proposed industrial activities which potentially affect them is an important part of environmental and project management. Potential benefits include exposure to local knowledge, which may improve environmental performance, and overall operations of the project; and public involvement and support in subsequent operations. In addition to contacts already made in developing this assessment and in conducting operations in the Bay St. Lawrence area, Dexter will be undertaking consultations with the local community through public notices in locally and provincially circulated newspapers. Stakeholders are encouraged to forward comments regarding this application to NSE to be considered as part of the regulatory review process.

12.0 PROJECT CLOSURE

Remediation of the affected environment during the closure or decommissioning phase of the quarry will involve the execution of a Rehabilitation Plan developed in consultation with the NSE.

13.0 APPROVAL OF UNDERTAKING

Dexter will comply with all provisions of the Nova Scotia Environment Act and Regulations. Applications for an amendment to the existing Industrial Approval will be submitted to the Amherst District office of Nova Scotia Environment.

14.0 FUNDING

No public or other government funding is involved in the execution of this undertaking. All costs are borne by Dexter.

15.0 SIGNATURE OF CEO AND DATE

Date

David Wood – Vice President & Chief Financial Officer
Dexter Construction Company Limited