VOLUME I PLAIN LANGUAGE SUMMARY

WHITES POINT QUARRY & MARINE TERMINAL

ENVIRONMENTAL IMPACT STATEMENT





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PLAIN LANGUAGE SUMMARY

1.0 Background

The Proponent, Bilcon of Nova Scotia Corporation (Bilcon), is proposing to construct and operate a basalt quarry, a crushing operation, and a ship loading terminal at Whites Point on Digby Neck (Map 1). Bilcon has leased 150 hectares of land and, at a production rate of 2 million tonnes per year, anticipates a quarry life of 50 years. Shipment of crushed product is anticipated to be approximately 40,000 tonnes per week, though this will vary with ship availability and weather conditions.

The quarry is anticipated to be operating at full capacity for 44 weeks of the year with a scheduled shut-down for maintenance and bad weather during the winter months. The quarry will directly employ 34 people working two shifts and Bilcon is committed to hiring and training local people. The quarry is expected to expand its operational footprint by 2.5 hectares during each year of operation and reclamation will be carried out on an incremental basis, rather than at the end of quarrying operations,

Land-based structures include rock crushers, screens, closed circuit wash plant, conveyors, environmental control structures and a load-out tunnel. Marine-based facilities will include berthing dolphins and mooring buoys and a quadrant loader capable of loading 5,000 tonnes per hour. The berthing dolphins and the quadrant loader will be supported on pipe piles anchored to the sea floor.

Bilcon will ship by common carrier the crushed rock and grits to New Jersey for use by its parent company, Clayton Concrete Block and Sand, in the manufacture of concrete and concrete block. Testing of the Whites Cove rock indicates that it will produce a high-quality crushed product meeting the standards required in New Jersey and New York.

All projects of this magnitude are required to undergo an environmental assessment to determine how the project could affect people, the environment, and the economy. The Environmental Impact Statement (EIS), of which this plain language summary is a part, is in itself a part of the environmental impact assessment which is a planning tool to identify and mitigate any significant environmental effects.

The EIS is a large, technical document which can be viewed at the places listed in Section 11.0 of this summary. This plain language summary is intended to give an overview to provide an understanding of the issues surrounding this project.





2.0 The Proponent

The Proponent for this project is Bilcon of Nova Scotia Corporation, a Nova Scotia registered corporation. Bilcon is a subsidiary of Bilcon of Delaware which is owned by the principals of Clayton Concrete Block and Sand of New Jersey. Bilcon of Delaware is a non-operating holding company for the Clayton quarrying interests.

The Clayton group of companies has been operating in New Jersey for over fifty years and has been widely recognized for the excellence of its products and its outstanding community contributions. Clayton has received over two hundred citations for excellence of design and manufacturing and has made literally thousands of contributions to health, education, and other community causes. Clayton has been recognized in both Houses of the New Jersey Legislature as an outstanding corporate citizen and in 2004, was recognized by both Houses as the outstanding corporate citizen of the year in New Jersey.

Clayton employs over 850 staff at its various operations in New Jersey and has an enviable record with respect to employee relations, benefits, and occupational health and safety.

Clayton has the internal financial resources to construct and operate the Whites Point facility without government assistance for any aspect of the project and has not and will not make application for government assistance.

3.0 The Project Setting

The Whites Point Quarry and Marine Terminal is located on Digby Neck, Digby County, Nova Scotia. Digby Neck is a narrow, 30 km long peninsula extending between the Bay of Fundy and St. Mary's Bay and leads to two Islands - Long Island and Brier Island. The 2001 population of Digby Neck and Islands was 1,890. Land use on Digby Neck is primarily rural residential with the majority of the land forested. Small fishing villages exist on both the St. Mary's Bay and Bay of Fundy shores.

The proposed site for the quarry comprises approximately 380 acres with 2.6 kms of coastline along the Bay of Fundy. The land is in private ownership, forested, with no land or coastline developments. Soils are thin overlying the North Mountain Basalt. Existing topography slopes toward the Bay of Fundy with several intermittent water courses. The physical oceanography in this area of the outer Bay of Fundy is typical with basalt bedrock extending into the near shore waters. Lobster is fished seasonally in the near shore and is the most lucrative species landed on Digby Neck and Islands. Marine mammals, including the endangered North Atlantic right whale, frequent these outer Bay waters and whale watching is a seasonal tourism attraction.

Map 1 shows the general setting of the quarry on Digby Neck and the artist's rendering shows what the quarry might look like in its operational phase.



2.0 The Proponent & 3.0 The Project Setting Plain Language Summary - Page 6



Artist's Rendering of the Whites Point Quarry and Marine Terminal by Mark Pease

4.0 The Environmental Assessment Process for Whites Point Quarry and Marine Terminal

In early 2002, Nova Stone Exporters Inc. (Nova Stone), a Nova Scotia company, applied for and was granted a Permit for the operation of a less than 4 hectare quarry at Whites Point on Digby Neck. Subsequent to the granting of this Permit, Nova Stone joined with Bilcon of Nova Scotia, to form Global Quarry Products, with the purpose of expanding the Whites Point operation to increase production and add a marine terminal to ship the product.

To this end, Global Quarry Products made application for the installation of a marine terminal serving ships in excess of 25,000 Dead Weight Tonnes. This application under the Navigable Waters Protection Act triggered an assessment under the Canadian Environmental Assessment Act (CEAA). A meeting was held with Federal and Provincial regulators in January 2003, and it was determined that the Department of Fisheries and Oceans Canada was the Responsible Authority and that a Comprehensive Study would be required to assess the project. Global Quarry Products submitted a Project Description and commenced the preparation of a Comprehensive Study.

In June of 2003, Global Quarry Products was advised that the project had been referred to a Review Panel. A letter dated June 26, 2003, from the Honourable Robert Thibault, Minister of Fishers and Oceans Canada, to the Honourable David Anderson, Minister of Environment Canada, set out the reasons for the referral.

Due to the additional cost and extended time frame required for a review panel, Nova Stone withdrew from the Global Quarry Products partnership which was dissolved, leaving Bilcon of Nova Scotia Corporation as the sole Proponent.

Draft Guidelines for the Preparation of the Environmental Impact Statement for the Whites Point Quarry and Marine Terminal Project were distributed to the Proponent, the community, and stakeholders in November, 2004, and the Panel Members were announced in Nov 2004. The Panel conducted a series of Public Hearings on the Draft Guidelines in January, 2005, in Sandy Cove, Digby, Meteghan, and Wolfville. Following these hearings and consideration of the verbal and written presentations, the Panel issued the final Environmental Impact Statement Guidelines for the Whites Point Quarry and Marine Terminal project on March 31st, 2005.

Bilcon of Nova Scotia Corporation, as the sole Proponent, has prepared an EIS which was submitted to the panel in the spring of 2006. The preparation of the EIS involved extensive public consultation over a three and a half year period including a Community Liaison Committee, more than 107 different stakeholder consultations, open houses, an attitude survey, a quality of life survey, exit surveys and a store front operation. The EIS starts the process of assessment which will culminate with recommendations by the panel to the joint ministers, and a decision by the joint ministers. The process will involve public hearings and a review by the panel of the finding.



4.0 Environmental Assessment

5.0 The Environmental Impact Statement

The EIS is an environmental assessment which determines the effect of the project on people, the environment, and the economy. It is a planning tool which assists the Proponent, regulators, and the community at large, understand the issues and the effects on the environment.

The preparation of the EIS commences with a consultation process with the community to collect information, to identify potential issues, and to identify community concerns. The community information collected, together with community traditional knowledge, is used by the Proponent in the design stages of the project.

All potential effects identified are assessed and mitigation plans are developed to lessen potential negative effects. In addition, monitoring plans are developed to ensure that the mitigation measures will have the desired effect. If changes are required to mitigation measures adaptive management measures are undertaken following consultation with the community and regulatory authorities.

Effects are assessed by determining whether the effect is negative, neutral or positive, the significance of the effect, the geographic reach of the effect, and the duration of the effect.

6.0 The Preparation of the EIS

Typically the preparation of an EIS is conducted by a major firm of scientists and engineers or a joint venture between two or more major firms. Bilcon adopted a somewhat different approach by engaging the leading scientists, engineers and firms specializing in the specific fields under study to provide the research necessary to conduct the analysis of each of the elements examined. Bilcon is of the opinion that the extensive research conducted for the EIS is of the highest quality.

In addition, Bilcon and its team of scientists and engineers made full use of the knowledge available in the regulatory agencies and, in particular, from DFO. Many meetings were held with DFO and other agencies to gather information and to ensure that the particular concerns of the regulators were addressed.

Based on the information collected from the community, traditional knowledge, scientific and engineering input, and the meetings with regulators, an extensive list of Valued Environmental Components (VECs) was established, and are set out in **Table 2** - Valued Environmental Components Impact Summary.

Each of these VECs was examined in detail to establish the effect in terms of size, geographic extent and duration, and methods of mitigation and monitoring were established.

In addition, the effect of the environment on the project such as weather extreme loading, and the potential effects of climate change and increased sea levels were examined.



5.0 The EIS and 6.0 Preparation of the EIS

7.0 Findings

For each of the Valued Environmental Components, the EIS examined the existing conditions, what effects the project would have, and the methods to reduce these effects if negative.

A review of the impacts, Table 2, shows that there are no significant negative effects provided that the mitigation measures are followed as set out for each of the environmental components. To the contrary, there are several important significant positive impacts.

There are, as expected, a number of neutral or insignificant negative environmental effects, even after mitigation, as there will always be whenever man imposes his will on nature. These insignificant negative effects will, however, not impact the health of the community nor the environment nor the economy.

The results of the analysis of the most important Valued Environmental Components, from the perspective of the community and regulators, are set out below:



Valued Environmental Compo	ued Environmental Component							Table 2, Part 1									
Impact Summary	4				Tin	ne	Type/Significance of Effect					Scale					
Whites Point Quarry and Marine Termina Environmental Impact Statement	u //	Shor	Term	Tern	dicant P	anificant Neur	Positive Insign	Signi	Negatin Heant	e reine	D D	ncial Meremational					
Physical Environment																	
Climate - Greenhouse Gas		0				0			R								
Geology - Basalt rock		9				0		Ŀ									
Hydrogeology - Residential Well Water Yield		9			0			L									
Hydrogeology - Residential Well Water Quality		9			\bigcirc			Ŀ									
Surficial Geology and Soils		9		0				₪									
Little River Watershed		•			\bigcirc				R								
On-site Surface Water Drainage - Wetlands		9			0			₪									
On-site Surface Water Drainage - Quality		•			0			₪									
Physical Oceanography - Turbidity	O					0		€									
Physical Oceanography - Tides and Currents		•				0		1									
Air Quality - Particulate Emmissions		•			0			Ŀ									
Noise and Vibration - Blasting		9			0			L									
Noise and Vibration - Processing Plant		9						Ŀ									
Noise and Vibration - Shiploading		9			\bigcirc			₪									
Light - Night		9				0		Ŀ									

Valued Environmental Compo		Table 2, Part 2										
Impact Summary					Tin	ne	Type/Significance of Effect					Scale
Whites Point Quarry and Marine Termina Environmental Impact Statement		Shor	Term	Tern	dicant P	sufficant Neu	Positive tral	aiticant	Negativ licant P	e cestive	onal Prov	neial NationalInternational
Biological Environment												
Terrestrial Ecology - Habitat Alteration		9				0		Ŀ				
Terrestrial Ecology - Habitat Diversity		9		0				©				
Terrestrial Floral Species at Risk		9								®		
Terrestrial Vertebrate Species at Risk		9				0		0				
Terrestrial Odonata Species at Risk		9		\bigcirc				Ŀ				
Terrestrial Lepidoptera Species at Risk		9				0		₪				
Terrestrial Wetlands		9		\circ				₪				
Migratory Land Birds		9				0		Ŀ				
Aquatic Ecology - Freshwater Fish Habitat		9			\bigcirc			(L)				
Aquatic Ecology - Marine Intertidal Habitat	O					0		Ŀ				
Aquatic Ecology - Marine Intertidal Habitat		9			\bigcirc			Ľ				
Aquatic Ecology - Marine Nearshore Habitat	O					0		₪				
Aquatic Ecology - Marine Nearshore Habitat		0			\bigcirc			1				
Marine Mammals and Waterbirds - Nearshore		9				0		€				
Fish - Endangered (Inner Bay of Fundy Salmon)		0			\bigcirc						\odot	

Valued Environmental Compo	Table 2, Part 3											
Impact Summary				Tir	ne	Type/Significance of Effect					Scale	
Whites Point Quarry and Marine Termin Environmental Impact Statement	al		Tern Ter	a life and h	milicant	Positive tral ion	ificant	Negativ	e egaine dion	al	ial ional Anematica	jul /
		Sho	Louis 3	St Inst	Her	Inste	Sig	Lor (Per P	200	Har	
Fish - Threatened and Special Concern		•		0						\odot		
Waterfowl - Special Concern		•		0						\odot		
Marine Reptiles - Endangered		9		\bigcirc					3	\otimes		
Blasting - Fish Habitat		•			0		D					
Blasting - American Lobster		9			0		Ŀ					
Blasting - Marine Mammals		•			0		ſ					
Blasting - Marine Mammals - Species at Risk		9			0					\otimes		
Blasting - Waterbirds		9			0		L					
Ship Interactions - North Atlantic Right Whale Conservation Area		9		0						\otimes		
Ship Interactions - North Atlantic Right Whale Nearshore		9			0					\odot		
Ballast Water		•		0				®				
Noise and Vibration Marine		9			0		₪					
Human Environment												
Heritage Resources - Marine Archaeology	0			0			₪					
Heritage Resources - Land Archaeology		9		\bigcirc			©					

alued Environmental Component						Table 2, Part 4								
Impact Summary					Tin	ne	Type/Significance of Effect					Scale		
Whites Point Quarry and Marine Terminal Environmental Impact Statement	A	Shor	Tern	Tern	dicant P	anificant Neur	Positive rel	nificant Signi	Negativ Negativ	e estive	onal Prov	ncial mainmaillineernational		
Heritage Resources - History	Ĩ	0				0		Ū						
Heritage Resources - Heritage Properties		9			0				®					
Aesthetics - Highway #217		9			0				®					
Aesthetics - Bay of Fundy		0				0			®					
Economy - Quarry Construction Employment	0		•						R					
Economy - Quarry Construction GDP	0			0						P				
Economy - Quarry Operation Employment		9							®					
Economy - Quarry Operation GDP		0		0						P				
Economy - Quarry Operation Tax Revenue		0		0						P	\odot			
Economy - Quarry Operation Mun. Tax Revenue		0	0						®					
Economy - Fishery - Aquaculture		0			0				®					
Economy - Fishery - Intertidal		0			0				®					
Economy - Fishery - Nearshore		0				0		1						
Economy - Tourism		0				0			®					
Economy - Land Value		0				0		D						
Recreation		0			0			©						

Valued Environmental Compo	ued Environmental Component							Table 2, Part 5								
Impact Summary					Tin	ne	Type/	Signi	ficance	e of Effe	ct	Scale				
Environmental Impact Statement		chor	Term	Tern	dicant P	ositive milicant	Positive	dicant	Negative Negative	Regional	provincia	ationalAntern	ational			
Serie Cultural Quality of Life Seriel Palations								/				/				
Socio-Cultural - Quality of Life - Social Relations	0	•				0			R							
Socio-Cultural - Social Capital - Life of Project		0		0					®							
Socio-Cultural - Commercial Patterns		9				0			®							
Socio-Cultural - Quality of Life - Environmental		9				0		©								
Community Infrastructure		9			0				®							
Community Institutional Capacity		9			0				®							
Education Training and Skills		9		\bigcirc					R							
Transportation - Land - Construction	O					0			®							
Transportation - Land - Operation		9			\bigcirc				R							
Transportation - Marine - Construction and Operation	0	9				0		Ŀ								
Human Health - Offsite Drinking Water Quality		9			\odot			ſ								
Human Health - Onsite Drinking Water Quality		9				0		D								
Human Health - Marine Contaminates		9			\bigcirc			0								
Human Health - Land Contaminates		0			0			C								
Human Health - Country Foods		0			0			C								

7.1 Groundwater Quantity and Quality

Background

The local community depends upon an adequate supply of clean groundwater for household use and for use in the local fish plants. Groundwater can also be an important supply mechanism to surface water streams and ponds. Both quantity and quality are important, and groundwater is protected by laws and regulations.

Concern has been expressed that quarrying activities could affect the quality and quantity of water in wells on properties adjacent to the quarry. In order to allay those concerns Bilcon conducted extensive on-site geological and hydrogeological research to identify the current location of the water table and the possible effects of quarrying.

In consultation with the adjacent property owners, twenty four wells were identified on properties adjacent to the project – seventeen drilled and seven dug.

Potential Effects

The lowering of the water table to the extent that well yields in drilled wells are seriously compromised would be a serious adverse effect as would the contamination of well water.

The research showed that the quarrying operations will not adversely affect the quantity or quality of the groundwater supply or the local wells for the following reasons:

- All the neighboring drilled wells were completed in the middle or lower basalt flow unit or in the deeper Blomidon Formation whereas the quarrying will only take place in the upper basalt flow unit. The dug wells are all in the surface till soils.
- The neighbouring wells are located hydraulically downgrade of the quarry and/ or on opposite sides of the groundwater divide that is near the crest of the North Mountain.
- The recharge and discharge areas for the quarry and the neighboring wells are located in different watersheds on opposite side of the groundwater divide.
- Quarrying will be carried out above the normal water table. Consequently mine dewatering and pumping will not be needed and there will be no groundwater withdrawal or drawdown.
- Studies by the U.S. Bureau of Mines, the Montana Bureau of Mines and Geology among others have shown that blasting does not affect groundwater quality or quantity in comparable mines.



7.1 Groundwater Quantity and Quality

- Construction aggregate operations have been used to enhance recharge via artificial surface recharge. Quarrying at Whites Point may enhance the local groundwater regime by increasing storm water retention and aquifer recharge.
- The quarry will not cause saltwater intrusion since quarrying will occur well above sea level and the freshwater/saltwater interface and no pumping will take place. In fact the quarry could be part of a long term, comprehensive strategy to protect the local water supply from salt water intrusion that could result from the unregulated pumping from the deep industrial wells in the area.

Figures 6A and 6B are cross sections showing the relationships between the existing wells, sea level, the water table and the ground surface. Map 12 identifies the location of the cross sections.

Managing Potential Effects

- Bilcon will carry out a pre-blast survey on the neighboring wells in accordance with the Nova Scotia Department of Environment and Labour guidelines to establish baseline data.
- Bilcon will monitor the groundwater level in the six new monitoring wells to determine whether quarry operations are affecting the groundwater table.
- Bilcon will invite two of the adjacent property owners with wells to sit on the reestablished Community Liaison Committee. Results of the monitoring will be provided to the Committee on a regular basis.
- If a drilled well is proven to be affected by quarry operations Bilcon will drill a new well for the property owner at its own expense.









7.2 Air Quality

Background

Concerns have been raised over the effect of quarrying and processing operations on the quality of the air. Air quality is a very important aspect of the environment and Bilcon has incorporated significant design elements to ensure that air quality is not compromised.

Potential Effects

Dust can be generated on quarry haul roads and in the rock crushing operation. In addition the quarrying operation will require heavy mobile equipment, primarily diesel powered, for land operations and the arrival and departure of the bulk carrier once a week will briefly involve diesel powered emissions. Some increase in vehicular traffic, primarily private vehicles, will be generated by the quarry workforce and commercial vehicles delivering equipment and materials during quarry operations.

Managing Potential Effects

- Bilcon will control dust so that the standards set out in the Nova Scotia Department of Environment and Labour Pit and Quarry guidelines are met.
- Since all quarry products will be shipped by water no heavy trucks hauling rock will generate dust or diesel emissions in adjacent residential areas.
- The access road to the quarry from Highway #217 will be paved virtually eliminating dust from employee and delivery vehicles.
- The physical plant where crushing will take place has been located approximately 1000 metres from the nearest residence.
- Bilcon will enclose processing equipment wherever practical and use water sprays to eliminate dust from the conveyor belts.
- Bilcon will maintain forest cover in the preservation zones and in the buffer areas.
- Quarry haul roads will be sprayed as required with a dedicated vehicle.
- Heavy operational mobile equipment will be equipped with diesel engines meeting the U.S. Environmental Protection Agency Tier 3 emission standards and maintained on a regular basis.
- No brush from the clearing operation will be burnt thus eliminating emissions from open fires.
- Monitoring will be carried out as requested by the regulatory agencies.

Figure 7 shows the quarry in relation to land levels, the preservation zone and residences along Highway #217.



7.2 Air Quality



7.3 Noise

Background

Excessive noise, particularly in rural areas, can have a negative effect on the residents' quality of life.

Concerns have been raised over the level of noise which will generated by the quarry construction and operation, by the blasting which will occur every two weeks during regular operation and by the shiploading operation which will occur once a week.

The Nova Scotia Department of Environment and Labour sets out limits in the Pit and Quarry Guidelines for noise levels at the quarry property line for daytime (65 dBA), evening (60 dBA) and night time (55dBA). Limits are also set out for air concussion at 128 dBA within 7 m of the nearest structure not located on site. These are the levels which Bilcon must not exceed.

Potential Effects

Excessive noise particularly in rural areas can have a negative effect on the residents' quality of life. The noise limits at the quarry property line are set to minimize these effects. For example the maximum noise at the property line of the quarry for night time operation is 55 dBA which is the equivalent of quiet conversation.

Managing potential effects

The quarry operation will create noise during construction, rock processing, blasting and shiploading. To reduce noise levels and to ensure that the standards set by the Department of Environment and Labour are met Bilcon will carry out the following measures:

- The processing plant has been located approximately 1000 metres from the nearest residence and approximately 60 metres below the crest of the North Mountain.
- Rubber lined truck boxes and screens will be used.
- Socket drilling will be used rather than pile driving in the construction of the marine terminal.
- The crushing plant will be enclosed wherever practical.
- Bilcon will employ alternate back up warning devices.
- The preservation zones will remain in a forested condition to provide greater sound absorption.
- Monitoring for operational noise will be conducted at the locations indicated and approved by the Department of Environment and Labour to ensure that the standards are not exceeded.
- Monitoring of all blasts will be conducted at three monitoring stations for concussion and ground vibration to ensure that the standards are not exceeded.



7.3 Noise

7.4 Land Wildlife and Plants

Background

The construction and operation of the quarry may change the type, quantity or quality of habitat at the Whites Point site. Society is now paying much more attention to the effect of human activities on wildlife and plants and particularly those at risk or endangered.

Potential Effects

The site consists of 380 acres with approximately 1.9 miles of shoreline on the Bay of Fundy. The property is almost entirely forested, dominated by coniferous species, with the exception of two coastal barrens south of Whites Cove and a bog north of the Cove. The majority of the site slopes towards the Bay of Fundy and is exposed to the north-west winds from the Bay.

A significant proportion of the coniferous species and in particular white spruce is diseased, dead or dying and approximately 60 acres on the site was recently clear cut. An area just to the east of the Cove was used as a source of material for the construction of Highway #217 in the early 1950's. No important freshwater wetlands or coastal wildlife habitats are located in or near the Whites Point site.



Glaucous Rattle-snake Root Photo by Ruth Newell

While approximately 80 acres of the site will be established as environmental preservation areas or buffer zones much of the site will be cleared, grubbed and quarried before reclamation. Habitats will therefore be disrupted for a period of time. In addition habitats can be affected by dust and noise.

In order to determine what wildlife and plants currently exist on the site consultants were commissioned to survey the sites' animals, birds, butterflies, dragonflies and plants and their location on the site in the latter case. Special attention was given to those species determined to be endangered, or at risk.



7.4 Land Wildlife and Plants

Managing Potential Effects

The survey noted above verified the existence of three provincially ranked plants at risk on the Whites Point site, the glaucous rattle-snake root, mountain sandwort and hemlock parsley. In order to protect these species the following steps will be taken.

A minimum 100' environmental preservation zone will be established along the coast line to protect the coastal rare plants identified. This zone of approximately 22 acres of general coastline will be expanded an additional 2.9 acres inland at the first headland south of Whites Cove, an additional 1.8 acres inland at the second headland south of Whites Cove and an additional 4.5 acres inland at the bog north of Whites Cove. This amounts to a minimum of 31.2 acres of coastline and associated habitats included in the environmental preservation zone.



Mountain Sandwort - Photo by Ruth Newell

A 100' upland buffer zone including the portion of the upland bog is proposed for the perimeter of the property and an additional 21 acres of the Little River watershed hasbeen set aside for a total upland buffer zone of 47.7 acres. See Map 2 for the proposed preservation zones.

The total environmental preservation areas and buffer zones amount to 78.9 acres or 20% of the site.

The significant population of glaucous rattlesnake-root located on the first headland south of Whites Cove would be included in the preservation zone. Preservation of the bog area will not only include protection of the groups of mountain sandwort on either side of the bog but will also protect potential habitat for the Nelson's sharp-tailed sparrow, designated a species at risk in Nova Scotia.



7.4 Land Wildlife and Plants



- The groups of hemlock parsley and birds-eye primrose would be included in thegeneral preservation zone south of Whites Cove where these plants were found.
- No Federal or Provincial vertebrate species at risk (amphibian, mammal or breeding bird species) were identified on the site.
- No Federal or Provincial invertebrate species at risk (dragonflies, damselflies or butterflies) were identified on site at the time of investigations.
- To minimize the disruption of habitat, areas of the quarry will only be cleared and grubbed immediately ahead of quarrying and incremental reclamation will ensure that the disruption is for a short period of time.
- The clearing operation will be scheduled to minimize direct impacts on all bird species. These activities will take place during late fall through winter to avoid spring and fall migrations on Digby Neck and to avoid the most sensitive spring and summer nesting period for resident species.
- Minimal night lighting is proposed to reduce the collision hazard for night migrating birds.
- The new sediment ponds, comprising approximately 20 acres of surface water will create aquatic/wetland habitat.
- Known nesting areas of birds that are sometimes attracted to quarry areas such asKilldeer, Common Nighthawk or Spotted Sandpiper will be avoided, where possible, if found within active quarry areas until the young have fledged.
- All toxic substances used during operations (diesel fuel, gasoline, hydraulic fluid etc) will be stored appropriately and not be accessible to birds or other wildlife.
- Bilcon will monitor the rare plant populations and monitor for invasive species.Bilcon will conduct faunal surveys and breeding bird surveys every five years to document any change in species composition.
- Bilcon will conduct damselfly, dragonfly and butterfly surveys every five years to document any change in species composition.



7.4 Land Wildlife and Plants

7.5 Fishing



Background

The waters off Digby Neck and the Islands are important fishing grounds particularly for lobster. Fishing has been the most important mainstay of the Neck and Islands economy for the past two centuries. Concern has been expressed that the activities of the quarry and marine terminal could affect the fishery and hence adversely affect the local economy.

Potential Effects

- The construction of the marine terminal will destroy fish habitat.
- There is the potential for sediment to enter the Bay of Fundy from the quarry site.
- Blasting could affect both fish and spawning areas.
- Invasive species could be introduced by shipping activities.



7.5 Fishing

Managing Potential effects

Bilcon has selected a pipe pile construction technique (see Figures 2 and 3) for the marine terminal rather than a rock fill or sheet pile structure. This means that the area of fish habitat destroyed is very small. Bilcon is required under the Fisheries Act to provide compensation for the destroyed habitat to the extent of creating new habitat in the amount of three times the habitat destroyed. Bilcon has received approval in principle for the Fish Habitat Compensation Plan which involves installing fish shelters and creating habitat on the pipe piles themselves.

The Nova Scotia Department of Environment and Labour has guidelines which must not be exceeded for the discharge of sediment into the Bay of Fundy. Bilcon will meet these guidelines by constructing sediment retention ponds and filter dams through which all surface water must flow prior to entering the constructed wetlands and the Bay - see Plan OP-1. Wash water containing sediment from the wash operation will be collected in the high rate thickener from which the sediment will be pumped to the dyked sediment storage area which is located at a considerable distance from the Bay. Sediment from the sediment retention ponds and from the high rate thickener will be mixed with the stored topsoil and used for reclamation.

Bilcon will generally conduct blasting on the site in accordance with the "Guidelines for Blasting in or Near Canadian Fisheries Waters". To provide further protection for the Inner Bay of Fundy Atlantic Salmon, an endangered species, a safety factor of three for separation distance will be used when conducting blasting when this species could be in the area. No blasting will be conducted in the water.

Bilcon will ensure that its shipper complies with the existing guidelines for the exchange of ballast water. Note that regulations with respect to ballast water are imminent.









7.6 Marine Mammals

Background

The Bay of Fundy off shore Digby Neck and the Islands is frequented by sixteen species of marine mammals (whales, dolphins, porpoises and seals). These include the endangered North Atlantic Right Whale and the Blue Whale.

A whale watching industry has grown in the past decade which provides additional income to fishers and entrepreneurs on the Neck and Islands.

Potential Effects

Concern has been expressed over the potential of ship strikes by the bulk carriers and the potential threat from blasting noise, which could affect the whales' hearing or affect behaviour.

Managing Potential Effects

- Ship traffic to the marine terminal at Whites Point will avoid the Bay of Fundy conservation area. (see Map 4).
- North Atlantic right whale sightings in the Whites Cove area will be communicated to the ships captain before the ship exits the inbound shipping lane (see Map 4) or leaves the marine terminal for the outbound shipping lanes.
- Bilcon is committed to cooperating with the North Atlantic Right Whale Recovery Team to improve the right whales' chances for recovery.
- Blasting will not be carried out if seals are present within 170 metres of the point of detonation or if whales, porpoises or dolphins are within 500 metres of detonations. If endangered marine mammal species such as right whales, blue whales or fin whales are sighted in the near-shore area of Whites Point the safety radius will be increased to 2500 metres.
- The speed of the ship between the shipping lane and the marine terminal will not exceed 12 knots and for much of the distance will be below 10 knots.



7.6 Marine Mammals



7.7 Archaeology



Background

Ulu - Photo by Gordon Fader

The assessment of cultural and archaeological resources is an important component of an environmental assessment process.

Concern was expressed that cemeteries or graves could exist on the Whites Point site and it is known that an ulu, a very early tool, was found offshore at Sandy Cove.

Potential Effects

The clearing and grubbing operation on the quarry site could damage or destroy artifacts or disturb grave sites.

The installation of the pipe piles for the marine terminal could damage or destroy artifacts.

Managing Potential Effects

In order to determine what may exist on the quarry site an archaeological assessment was carried out under a permit issued by Nova Scotia Museums. This assessment found no evidence of land use at Whites Cove by aboriginal peoples.

It is known, however, that several houses existed on the site in the late 19th century and the basement of one of these houses can still be observed. If Bilcon carries out work in the area of this basement further archaeological work will be carried out in this area and special precautions will be taken for a distance of 250 metres from the basement.

Bilcon staff will be trained in procedures to be adopted should any artifact or gravesite be observed anywhere on the site. Essentially all work will be stopped in the area until an assessment has taken place.

Special precautions and further investigation of the areas to be impacted by the piling for the marine terminal will be carried out by professional divers with archaeological experience under a permit from Nova Scotia Museums.

Only one shipwreck has been recorded in the Whites Cove area. In 1900 the Canadian government steamer Newfield ran aground in heavy fog. The vessel was later salvaged.



7.7 Archaeology

7.8 Tourism



View of Martin Marietta Quarry from the Nova Scotia Tourism Office - in Cape Breton

Background

Over the past twenty years a small but important tourism industry has grown on the Neck and Islands based on whale and bird watching. This industry contributes over \$3 million dollars to the local economy. Tourism numbers were considerably down in 2004 and 2005 due in part to the high cost of gasoline and the rise in the Canadian dollar.

Potential Effects

Concern has been expressed that visible quarry activities could damage the industry.

Managing Potential Effects

The most important point is that no part of the quarry activity, apart from the access road, will be visible from Highway #217. In addition no trucks will be carrying crushed rock on Highway #217.

There is no evidence that quarry activities affect tourism even when the quarry is highly visible. For example the Auld's Cove quarry and marine terminal can be easily seen by every tourist entering Cape Breton with no recorded effect on the Cape Breton tourist industry. It should also be noted that the recently opened quarry on Long Island at Tiverton is highly visible to all tourists taking the Ferry from East Ferry on Digby Neck to Long Island. The Whites Point quarry is visible from the water but few whale watch boats frequent this area of the Bay. Bilcon has proposed tree plantings in the coastal preservation areas to at least partially obscure the view from the water.



7.8 Tourism

7.9 Employment and the Economy

Background

Due to the recent severe decline in the groundfishery both the population and employment levels have declined on the Neck and Islands. Tourism has taken up a portion of the slack but has not been able to replace the jobs lost. The lobster industry has increased significantly over the past five years both in terms of catch size and value and this industry is now the mainstay of the Neck and Islands economy.

Potential Effects

The 34 staff at the quarry and marine terminal would have a significant positive effect on the local economy and the taxes paid to the Municipality of the District of Digby would also have a significant positive impact on tax revenues in the local area.

There is no evidence that the operation of the quarry will affect either the fishery or the tourism industry.

Concern has been expressed that Bilcon will hire staff already employed by local businesses.

Managing Potential Effects

- Bilcon has not received nor will apply for any government funding for the construction and operation of the project.
- Staff will be hired locally wherever possible and training will be provided by Bilcon at its expense.
- All staff will be paid industry competitive wages.
- Hiring preference will be given to women.
- Great care will be taken to ensure that staffing does not negatively affect local businesses.
- Bilcon will wherever possible procure supplies in the local area and generally support local business both during construction and operation of the facility.



7.10 Land Values

Background

Land values on the Neck and Islands have significantly increased over the past five years as they have Nova Scotia wide. There has been increased interest from foreign and out of province buyers looking for summer homes or retirement homes.

Potential Effects

Concern has been expressed that the construction and operation of the quarry and marine terminal will have a negative effect on land values on Digby Neck.

This understandable concern is not borne out by the recent activity in the real estate market on the Neck over the past three years as both the number of sales has risen significantly and prices have generally risen in line with those in the Digby area. All recent buyers would have been aware of the proposed project but it does not appear to have had a negative impact.

It is, however, possible that property values in the area immediately adjacent to the quarry could be negatively impacted.

Managing Potential Effects

To protect property owners in the area immediately adjacent to the quarry(within 800 metres of the active quarry) Bilcon proposes that an appraisal be carried out by a qualified real estate appraiser on those properties prior to construction and operation of the quarry to be followed up by an appraisal five years later. If property values have declined or not risen in line with the general market over the five year period Bilcon will compensate the property owners accordingly.

Bilcon will strictly adhere to the thresholds set out by the Department of Environment and Labour under the Pit and Quarry Guidelines for elements which could impact property values such as noise and dust.



7.10 Land Values

7.11 Health

Background

The protection of health and community wellness is paramount when considering the effects of any human activity. Regulatory agencies at both the federal and provincial level have established parameters to ensure that the health of the public is not compromised by any of these activities.

The following definitions of health have been adopted in this EIS.

"health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (World Health Organization 1948), and "the extent to which an individual or a group is able to realize aspirations and to satisfy needs to cope with changes or cope with the environment" (World Health Organization 1984).

Three community health components were selected as health determinants:

- 1 Social and economic environmental components, e.g., demographics, population health, employment, income, education, and social status;
- 2 Physical environmental components, e.g., air, water, and soil quality' contaminants; noise vibration and light;
- 3 Individual factors, e.g., personal health and coping skills.

Concerns expressed by the public during scoping sessions or at Community Liaison Committee meetings, comments on the public registry, and on the Draft EIS Guidelines and by regulatory agencies, have been addressed in the EIS document. Physical environmental components have been addressed as VECs – air quality, noise and vibration, light, drinking water quality, marine contaminants, and country foods. Many of the issues concerning community wellness are addressed in the EIS under socio-cultural patterns. Quality of life components are addressed in the EIS and assess determinants such as social relations, social capital, commercial patterns, and environmental quality of life. The reader is encouraged to review these sections.

Potential Effects

The crushing of the basalt rock and general quarry activity produces dust which, if uncontrolled, could create health problems and affect country foods.



Quarrying of the rock and its processing produces noise which, if excessive, could create heath issues.

Potential contaminants, such as diesel fuel, gasoline and hydraulic fluids will be used and stored on site and these, and blasting residue, could potentially contaminate the water supply.

The quality of life could be affected if dust, noise, and contaminant issues are not addressed.

Managing Potential Effects

- Federal and provincial agencies, and sometimes both, have established regulatory thresholds for dust, noise, and contaminants to protect the health of the public and employees. The EIS sets out in detail the mitigation measures which will be adopted to ensure that these thresholds are not exceeded. Further, the EIS sets out the follow-up monitoring and reporting procedures to ensure that the mitigation measures are effective.
- Bilcon will employ a trained staff to carry out the monitoring and the results of the monitoring will be reported on a regular basis to the appropriate regulatory agencies and to the Community Liaison Committee (CLC). The CLC will have as members, people from the community most likely to be affected by dust, noise, and contaminant problems.
- It is recognized that there has been a disruption of the community's social cohesion during the pre-project planning phase of the project and during the environmental assessment / Panel Review phase as individuals with different objectives have interacted and discussed the potential effects of the project. However, since no significant adverse environmental effects were identified by the environmental assessment, the project activities (construction and operation) are not expected to have an adverse effect on social cohesion as it relates to social capital.
- Potential contaminants will be managed in accordance with the regulations. This means that storage will be in double walled tanks with specially designed containment devices.



7.12 Quality of Life



Bilcon supports community quality of life by sponsoring local interest groups

Background

Quality of life involves community health and wellbeing which includes physical, mental and social health not simply the absence of illness. There are many factors relevant to an assessment of the quality of life including: physical environment, social environment, income and social status, employment and working conditions, lifestyle, education, personal health practices, health services etc.

Concern has been expressed that the project could negatively affect the quality of life on Digby Neck.

Potential Impacts

Virtually all activities of a quarry and marine terminal could have a negative impact on the quality of life if they were not regulated by federal and provincial regulatory agencies and properly managed by the operator.

The purpose of this environmental impact statement is to identify potential impacts and to design management techniques which will ensure that quality of life and other valued environmental components are not adversely affected.



7.12 Quality of Life Plain Language Summary - Page 41

Managing Potential Effects

- Noise and air quality will be monitored so that regulatory thresholds are not exceeded.
- The public will be involved in the monitoring programs through participation in the Community Liaison Committee.
- The public will be encouraged to learn more about the operation through newsletters, open house and site tours.
- Bilcon will hire and train local people.
- A health and occupational safety plan for all employees will be developed and enforced.
- Bilcon will participate in community affairs and will be a good corporate citizen.
- Bilcon will improve its buffer properties with an ongoing silviculture program.
- Bilcon will compensate adjacent properties owners within 800 m of the quarry for loss of property value.
- Bilcon will compensate property owners for loss of wells due to quarry operations.
- Bilcon will work with the lobster fishers in Whites Cove to ensure that minimal interference with their activities takes place and will compensate for damage to fishing gear caused by ship movements.
- Bilcon will work with beach harvesters to provide good beach access.
- Bilcon will carry out all the commitments set out in the commitments table which is part of the Environmental Impact Statement.



7.13 Reclamation



Colorado Mountain Reclamation Foundation Pikeview Quarry 10th Annual Hike the Habitat

Background

The mining and quarrying industry has had a chequered history with respect to cleaning up mine sites after extraction is complete. In recent years regulatory agencies have demanded that sufficient money to fund the reclamation of a mine or quarry site be paid before the operation commences.

Potential Effects

Concern has been expressed that the quarry site would not be cleaned up and a reclamation program carried out.

Managing Potential Effects

Bilcon will present a reclamation plan to the Nova Scotia Department of Environment and Labour for approval. This plan, when approved, will be costed and Bilcon will pay the cost of the reclamation program to the Department prior to construction. Then, if Bilcon does not carry out the reclamation program the government has the funds in hand to carry it out.

A schematic section of the quarry site after quarrying is shown on Figure 5 and the reclamation plan for year 50 is shown on Plan OP-8.



7.13 Reclamation Plain Language Summary - Page 43





8.0 Assessing Effects

Each Valued Environmental Component has been examined in the Environmental Impact Statement and the residual effect after managing the potential effect has been clearly established.

These effects are set out in Table 2 – Impact Summary.

A review of this table shows that provided all the management initiatives are followed there will be no significant negative effects. There will, however, be several significant positive effects. Readers are encouraged to examine each of the Valued Environmental Components in the Environmental Impact Statement.

9.0 The Continuing Process

The submission of the EIS is a major part of the environmental process. The next step is the distribution of the EIS document so that the public and other stakeholders can examine it and comment on it for a period of not less than 60 days. Comments made by the public or stakeholders are to be made in writing.

Comments received by the Panel will be passed on to Bilcon and the Proponent will provide a response to the Panel not later than 15 days following completion of the comment period.

Should the Panel identify deficiencies after reviewing the EIS and the comments received, the Panel may request further information from the Proponent. Once the Panel is satisfied that sufficient information has been provided, the Panel will arrange for public hearings and will schedule these hearings with a minimum of 30 days notice. These public hearings will be held in locations determined by the Panel within the area likely to be affected by the project or in any area reasonably close to the project.

The Panel will deliver its report to the Minister of Environment Canada, and the Minister of Environment and Labour, Nova Scotia, within 90 days of the close of the public hearings.

10.0 Future Consultation and Communications

Bilcon will re-establish the Community Liaison Committee and ensure that a clear line of communication and consultation is open throughout the life of the project.



8.0 Assessing Effects, 9.0 The Continuing Process & 10.0 Future Consultation

11.0 Location of the EIS

The Panel will make hard copies of the EIS available for viewing at the following five locations:

Annapolis Royal Branch Library Town Hall 285 St. George Street Annapolis Royal, NS (902) 532-2226

Isaiah W. Wilson Memorial Library 84 Warwick Street Digby, NS (902) 245-2163

Nova Scotia Environment and Labour Library 5151 Terminal Road, 5th floor Halifax, NS (902) 424-5300

Nova Scotia Environment and Labour Yarmouth District Office Library 13 First Street Yarmouth, NS (902) 742-8985

Wolfville Memorial Library 21 Elm Avenue Wolfville, NS (902) 542-5760



11.0 Location of the EIS

12.0 Conclusions

As noted earlier, the purpose of the EIS document is to identify the potential effects of the project on people, the environment, and the economy. It further proposes mitigation measures to be taken to diminish or eliminate potential adverse effects and details monitoring procedures to verify the accuracy of the predictions.

The EIS demonstrates to the community that there are no significant harmful environmental effects and the following general conclusions can be drawn from the document:

- The assessment is based on science carried out by highly qualified and experienced scientists and engineers rather than conjecture.
- The exaggerated perceptions of the risk of this project are not supported by the science.
- There are no significant negative environmental effects if the mitigation and compensation measures are followed.
- There are several significant positive effects of the project.
- The project will be undertaken by a Proponent who is well financed, experienced, and with an excellent safety, environmental, and community record.
- The project will be reclaimed incrementally, leaving a site landscaped for future development.
- The project will significantly improve the economy and economic diversification in the local area and will significantly contribute to the municipal tax base and to a lesser degree the provincial and federal tax bases.
- No government financial assistance has been sought for this project.

