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11.0 ENVIRONMENTAL MANAGEMENT

Corporate Philosophy

The Proponent commits to the highest of standards in all aspects of its operations, including environmental protection, health, and safety. The company undertakes to act responsibly as a steward of the resources and work for the wellbeing of its employees and the community in which it operates.

The Proponent will:

- Carry out training programs for all its employees to ensure that they have the skills to maintain an environmentally safe and a healthy and injury-free workplace;
- Implement site-specific health, hygiene, safety, environment and emergency response policies, management programs, and practices;
- In all quarry and marine terminal activities, minimize risks to the environment, health, and safety and ensure compliance with the requirements of all regulatory authorities;
- Require all contractors and subcontractors to adhere to practices consistent with Bilcon's environmental, health, and safety programs;
- Maintain a monitoring program to ensure compliance with this policy and laws and regulations; and
- Communicate regularly with the public, employees, and other stakeholders on activities involving the environment, health, and safety.

11.0.1 The Approach to Environmental Management and Strategies for Implementation

General Strategy

The Proponent will follow the principles of its parent company and involve all employees in Environmental Management. Training programs will be carried out and sound work procedures will be established and enforced for all work stations.

A specific Environmental Management team under the overall direction of the Operations Manager will be established prior to the commencement of construction and will operate throughout the life of the quarry. This team will be responsible for ensuring that all mitigation measures and monitoring programs described in this document are followed and monthly meetings of the team will review each of the mitigation and monitoring elements to ensure compliance with the corporate commitment and with all thresholds established by regulatory agencies.

A senior health, safety, security, and environment (HSSE) supervisor will be engaged and provided with the appropriate staff work space and equipment to carry out the various health, safety, and monitoring programs and to ensure that mitigation procedures are being followed. Weekly reports will be provided to the Operations Manager and these reports will be reviewed by the Environmental Management team at its monthly meetings. The effectiveness of mitigation measures will be reviewed each month and, if necessary, adaptive management techniques (developing improved techniques while conducting management activities) will be employed in consultation with the appropriate regulatory authority. Action, where necessary, will be the responsibility of the Operations Manager.

Monitoring reports, where required by regulatory agencies, will be forwarded at the time intervals required by the agencies.

The Operations Manager will be responsible for follow up on any issues identified in the weekly meetings of the Environmental Management team and to ensure the accuracy of impact predictions.

Specific Procedures and Programs

An operations manual will be prepared which will set out for each of the valued environmental components, the conditions of approval, the commitments of the company, the mitigation measures, and the monitoring program.

At each monthly meeting of the Environmental Management team, each of the elements of each of the valued environmental components will be reviewed using the weekly reports submitted by the senior HSSE supervisor. An assessment will be made and recorded for each of the components so that conditions can be tracked for specific time periods and over the life of the project.

Each of the valued environmental components will be reviewed to verify the impact predictions and to determine the effectiveness of the mitigation measures being carried out. Where necessary, consultants will be engaged to verify the effectiveness of mitigation measures; for example, for the protection of the *Prenanthes racemosa* (Glaucous Rattlesnake-root) identified in the Plant Survey of Whites Cove Property prepared by Ruth Newell. Consultants' reports will be filed with the appropriate regulatory authority.

Regulatory Authorities

As noted above, regulatory authorities will be furnished with monitoring reports at the intervals stipulated by the authorities and the consultant reports for specific valued environmental components. In addition, the appropriate regulatory authorities will be updated on a regular basis on the success or otherwise of mitigation measures and, where necessary, asked to become involved in adaptive management.

Records

Records of all monitoring, assessments of mitigation measures, consultants' reports, and assessments carried out by the Environmental Management team will be maintained on site for inspection by regulatory authorities throughout the life of the project. Those monitoring reports required to be submitted on a periodic basis will be submitted by the Quarry Manager at the required time intervals.

Public Involvement

It is the intent of the company to establish a new Community Liaison Committee to ensure that the community is made aware of the effectiveness of the mitigation measures and to discuss any ongoing concerns raised by the community. It is proposed that this committee meet on a quarterly basis at the on-site quarry offices, and that a tour of the operation be given so that members can observe first-hand the measures being undertaken.

The committee would be made aware of monitoring results on an ongoing basis and an annual review of monitoring results would be prepared by the company for review by the committee and for distribution to the residents of the local community.

It would also be the intent to hold an open house for the general public at the quarry site once the construction process is complete and the quarry operational. This event would provide an opportunity to anyone interested to ask questions of the quarry staff and to see first-hand the work of a quarry and the environmental management plan in operation.

Compensation

The Environmental Management team will also deal with the issue of compensation. A compensation plan has been discussed with lobster fishers who traditionally fish in Whites Cove and it is acknowledged that some lobster traps may be lost as a result of ships entering and leaving the marine terminal, even with the ship maintaining a pre-designated route and notification of ships movements to the lobster fishers. It is agreed that the lobster fishers will form a committee which will assess damage and that a compensatory sum will be provided by the company to be administered by the committee.

The Environmental Management team will meet with the committee on an annual basis to review the results and to make any adjustments where necessary.

The company has also made the specific commitment that it will compensate any drilled- well owner whose well has failed due to quarry activities (Appendix 47) The Environment Management team will review such claims and, where appropriate, ensure that new wells are drilled.

A compensation plan has been approved with the Department of Fisheries and Oceans with respect to destruction of fish habitat. Part of the monitoring program which will be developed in consultation with the Department will be to assess the level of success for the compensation plan.

Partnerships

Bilcon would welcome the opportunity to participate in partnerships with academe or others to further practical research and the Clayton companies have a history of such participation (See Appendix 13, Rutgers University). Bilcon sees such opportunities arising, particularly in the reclamation process which, after the first five years of operation, will be carried out on a continuous basis.

Adaptive Management

As noted in 3.5 in this document, Bilcon will apply the precautionary principle to all phases of the project through its approach to environmental risk management. Where there is uncertainty with respect to the effectiveness of measures that are used to prevent serious or irreversible environmental effects, Bilcon will take an adaptive management approach. Adaptive management uses monitoring results to accommodate uncertainty. This will permit early intervention through the use of additional mitigation or avoidance to control potential environmental damage.

The use of an adaptive management approach, based on scientifically defensible performance-based standards, will be Bilcon's strategy throughout the life of the project.

Quality Assurance and Quality Control Measures

a) Environmental Quality Assurance Plan

As noted under the section Environmental Criteria 11.1, the Proponent is committed to developing and implementing an environmental quality assurance plan to the ISO 14001, or similar standard, to ensure compliance with corporate philosophy and Federal and Provincial Regulations and Guidelines.

b) Product Quality Control

The sole produce from the quarry operation will be crushed rock of various sizes which will be wholly used for the Clayton concrete and block operation. The quality of the product produced at Whites Point will, therefore, directly impact the quality of Clayton's finished product. Quality control is, therefore, imperative at the crushing, screening, and washing operation, and the various stockpiles will be continuously monitored for quality. All products, as noted, will be exported and will meet the requirements of the finishing process (concrete or block) in the markets in which they are distributed. No regulatory approval of the product is required prior to its shipment.

11.1 Management Criteria

The philosophy and approach to Environmental Management is set out in 11.0. The criteria for Environmental Management is set out for each VEC in the EIS and tabulated in the Mitigation Table, the Monitoring Table, and the Commitment Table, set out in 11.4, 11.5, and the Executive Summary. Specific VECs are dealt with under 11.8, Compensation.

As noted under 11.0, an Operations Manual will be prepared which will set out for each of the VECs, the conditions of approval, the commitments of the Company, the mitigation measures and the monitoring program. All Environmental Management will be carried out under an environmental quality assurance plan to the ISO 14001, or similar standard.

11.2 Accidents and Malfunctions

The concept of accidents and malfunctions must be considered in terms of both likelihood of an event and the exposure time over which that event could occur. To that extent, exposure to accident risks during a relatively brief construction activity must be considered separately and differently from a longer-term exposure for example, from routine production operations over a 50-year term. Similarly, the effect of an accident on the ecology will differ with each eco-receptor. As a consequence, the proponents approach to the potential accident will differ for each case.

The Proponent's safety culture, approach to site operation and management is critical to avoidance and mitigation of adverse effects due to accidents and malfunctions. Bilcon of Nova Scotia and parent Company Clayton corporate philosophy in this matter is clear, and is characterized in the statement “ *Clayton Companies has had longstanding corporate policies of providing a safe and healthful work place, protecting the environment, and conserving energy and natural resources. Clayton companies are committed to environmental compliance and stewardship in all of its business activities.*”

Accidental events can lead to injury to the biophysical environment as well as effects on human health and safety. The severity of effects from accidental events is dependent upon the magnitude of the event, location of the event, and the time of year.

Accidental events can be generally categorized as either spills or releases to the environment of such materials as fuel, hazardous materials and wastewater, or the failure of engineered designs that may result in material spills or releases to the environment, vehicular accidents and fire. Although this section of the EIS will identify potential accidents and malfunctions that could occur at the Whites Point Quarry and Marine Terminal project site, such accidents and malfunctions are notably rare occurrences.

The reader must bear in mind that all aspects of the Whites Point Quarry and Marine Terminal project, from construction activities to full quarry and ship loading operations and cargo vessel transits are already in progress at numerous locations in Nova Scotia, elsewhere in Atlantic Canada, along the Eastern Seaboard and throughout the world. Many similar operations can be viewed operating within environmental compliance and safety on a routine daily basis. As examples, a few similar operations located within the Atlantic area are identified below for the convenience of the reader.

Water Side Quarry and Ship Loading

Martin Marietta	Aulds Cove, NS
Little Narrows Gypsum	Little Narrows, NS
Atlantic Minerals	Port au Port Peninsula, NL

Ship Loading Terminals

Fundy Gypsum	Hantsport, NS
National Gypsum	Dartmouth, NS
Georgia Pacific	Point Tupper, NS
Savage CANAC Corp.	Point Tupper, NS
Sydney Coal Pier	Sydney, NS

Large Scale Quarry Operations

Fundy Gypsum	Wentworth Creek, Miller Creek, NS
National Gypsum	Milford, NS
Georgia Pacific	Kingsville, NS
Conrad Bros.	Dartmouth, NS
Municipal	Waverley, NS

The Bilcon approach to management of potential accidental events that could cause adverse environmental effects is imbedded within corporate culture. The key elements include:

- Effective design of the workplace facilities and equipment.
- Hazards controlled to prevent unsafe and unhealthful exposures.
- Monitoring of hazard condition
- Elimination or control accomplished in a timely manner.
- Application of Corporate resources
- Provide adequate surety to fund cleanup

The following text of this section addresses some key background project information; Valued Environmental Components (VEC) definition, and the proponents approach to each perceived risk relating to potential accidents and malfunctions.

11.2.1 Project Background

The Proponent

Bilcon has described the Whites Point Quarry and Marine Terminal (WPQMT) project elsewhere in this document; however, it is outlined here within the context of accidents and malfunctions and project phases.

Construction Phase

Duration 12 to 18 months

Activities

- Site infrastructure development and construction of site access and service roads, electrical power distribution, fuel storage, water supply, site water management and drainage structures, sediment retention ponds.
- Quarry and terminal site clearing - 27 acres
- Construction of site offices, stores warehouses and mechanical maintenance shops.
- Installation of crushing, screening and wash plant facilities.
- Construction of product lay down, reclaim and materials handling and transfer facilities.
- Construction of the marine shipping terminal including mooring dolphins and related mooring buoys, pile support structures, installation of aggregate handling conveyors and ship loader.

Operational Phase

Duration 50 Years

Activities

- Routine basalt aggregate production operations:

Quarry

- Clearing and quarry face development

Drill and blast

- Aggregate production

Erosion and siltation control

- Processing
- Crushing, screening and wash plant operations
- Aggregate stockpiling

Shipping

- Aggregate reclaim and ship loading operations
- Vessel size 50,000 tons
- Vessel transit to international waterway

Quarry Reclamation

- Slope reduction, erosion stabilization, revegetation
- Completion of 25 acre segments each 5 years

Shutdown and Reclamation

Duration 2 Years

Activities

Removal of all:

- Quarry plant and buildings
- Site infrastructure
- Reclamation of site to render it stable to erosion and of safe access

11.2.2 Valued Environmental Components

Bilcon has identified the site VEC's any of which could be adversely affected by accidental or malfunction occurrences. Listed below are those components of the VEC that could most likely be adversely impacted in the event of an accident.

Physical Resource Components

Ground Water

- Water Quantity
- Water Quality

Surficial Geology

- Soils

Surface Water

- Chemical Water Quality

Biological Resource Components

Terrestrial Ecology

- Habitat Alteration
- Habitat Diversity
- Floral Species at Risk
- Faunal Species at Risk
- Odonata and Lepidoptera Species at Risk
- Wetlands
- Migratory Land Birds

Aquatic Ecology

- Little River Watershed
- Freshwater Fish Habitat

Marine Intertidal Zone

Coastal – Nearshore Marine Habitat

- Migratory Waterfowl
- Fish Habitat
- Marine Mammals
- Marine Reptiles
- Marine Species at Risk
- North Atlantic right whale – Noise and Vessel Interaction

Human Resource Components

Water Use

- Intertidal Fishery
- Tourism
- Recreation

Human Health

- Air Quality
- Drinking Water Quality
- Noise and Vibration

11.2.3 Employee and Community Safety

Employee and community safety ranks very high on Bilcon and parent company Clayton, management priority. Corporate governance, policies and practices place high emphasis on these matters.

Clayton Companies have longstanding corporate policies of providing a safe and healthful work place, protecting the environment, and conserving energy and natural resources. Clayton companies are committed to environmental compliance and stewardship in all of its business activities.

A selection of portions of Clayton Corporate Policies is attached as an addendum as a sample of the corporate environment and culture under which Bilcon will operate. The attachments include documents relative to Corporate Policy; Health, Safety, and Environment, Facility Security Plan, Spill Prevention Control and Countermeasure (SPCC) Plan, and a Shipboard Oil Pollution Emergency Plan for a supplier under contract. Full documents can be made available for viewing at the request of the panel to the extent that requirements of corporate and regulatory confidentiality will permit. These documents are provided as indication that such provisions are familiar to Bilcon and are in the norm of everyday business. Documents and plans similar to the above mentioned plans specifically tailored to the WPQMT project will be prepared as required by the relevant legislation as the project advances.

Management commitment and employee involvement is complementary. Management commitment provides the motivating force and the resources for organizing and controlling safe work activities within the Clayton organization.

Ongoing work site analysis is done through a visual inspection process to identify not only existing hazards but also conditions and operations in which changes might occur that would create hazards. Industrial hygiene surveys are conducted as warranted. Employees are encouraged to take part in the inspection and/or work site improvement process. All injuries and incidents are investigated; causes and means for their prevention are identified.

Where feasible, hazards are prevented by effective design of the workplace facilities and equipment. Where it is not feasible to eliminate hazards, they are controlled to prevent unsafe and unhealthful exposures. Where a determination of a hazard condition is made, elimination or control is accomplished in a timely manner. Personal protective equipment is provided for by the Clayton organization. Medical monitoring is conducted in compliance with Federal Standards. A drug-free workplace policy is in effect in all areas of employment.

An introduction to safety and health programs is given at the time of hire. Training is conducted on a regular basis encompassing safety and health practices relative to the specific work site. Training in safe work habits encompassing programs mandated by various governmental agencies

Where necessary, correction of unsafe personal practices is enforced and clearly communicated through a disciplinary system.

A workers' compensation medical program, which includes available first aid measures and emergency medical care, is clearly established to minimize any injury or illness that does occur.

The Whites Point Quarry and Marine Terminal site will necessarily operate in accordance with provincial labour, health and safety and environmental legislation. The operating site will have controlled access to limit the possibility of access by unauthorized personnel. Standardized procedures and warning signals will sound in advance of blasting operations. Fire watches and alarms and suppression system will be employed where appropriate. The operating site will be equipped with adequate first aid personnel, in the event of accident involving injury to personnel. The site will have necessary equipment; trained personnel and a ready supply of early action environmental cleanup materials such as silt fencing and absorbents available for rapid use.

In the case of an accident, internal corporate resources will provide first order mitigation to reduce any adverse impacts. Arrangements will be made with external agencies to call up additional emergency resources when necessary to attend to on site conditions that exceed the capacity of site personnel and supplies. In addition, sufficient surety arrangements will be made to provide for cleanup financial resources to backstop corporate sources.

11.2.4 Hazardous Materials

Bilcon has identified a number of consumable materials to be used in relation to the WPQMT project that could if spilled, cause adverse environmental impact. Such materials include:

- Diesel fuel
- Gasoline
- Motor oil
- Lube oil
- Engine coolant
- Hydraulic fluid
- De-icing compound (glycol based)
- Explosives: ANFO, emulsions, primers
- Flocculent
- Cleaning solvents and paints
- Propane
- Acetylene
- Cement and concrete additives

All petroleum storage facilities will conform to the requirements of the Nova Scotia Standards for Construction and Installation for Petroleum Storage Tank Systems as issued under the Nova Scotia Petroleum Management Regulations.

Explosives will be stored offsite and delivered to the site in day use quantities. In summary, the procedures and requirements of the WHMIS program and other applicable government regulations will be enforced. If a spill does occur, the severity of the environmental consequences depends on the location of the spill, the volume of the spill, and the time of year. The volume of a hazardous material is dependent on the size and number of containers.

Accidental spillage of fuels or hazardous materials probably represents the highest probability of occurrence during both the construction and operating phase of the WPQMT project. Uncontained, such spills could impact the near shore environment. Proper design of facilities, careful management of operating procedures and advanced planning and preparedness for such potential events, will mitigate any adverse environmental impacts.

In the event of a liquid the spill will flow with the surface water and be captured within the drainage path or ultimately within surface water and sediment containment pond. At these locations actions can be taken to contain the spill, remove the offending materials and or treat the contaminated water.

Both the ground water and surface water divide is along the crest of the topographic high near the east boundary of the project. Both regimes will flow to the west into the Bay of Fundy. There is little risk of contamination of the ground water flows to the east. See section 9.1.3 on groundwater.

While there is some risk of accidental spillage, both the operations and also the materials are in very common use throughout Nova Scotia on a daily basis. Established sound management, operating and environmental practices will assure environmental compliance.

11.2.5 Accidental or Malfunction Events

Land Site Environment

Blasting

The use of explosives as a part of the quarrying process could be a source of an accidental explosion. The commonly used explosives are known as blasting agents ANFO (Ammonia Nitrate Fuel Oil) prill mixtures used under dry conditions and Emulsions used for wet conditions. This class of explosives is not easily detonated with out a “booster” charge to initiate the charge. As a consequence, the explosives are not considered an explosive risk while in transit or handling. The quantities of explosives handled will depend upon the size of the blast design; however, will be in the order of 0.4 kg per tonne blasted or approximately 7,500 kg for a 20,000-ton blast.

The record for accidental detonation in a Canadian mine / quarry controlled environment is free of incidents. At the WPQMT site all personnel will be removed from close proximity to the blast and blast warning and access restrictions will be strictly enforced. Fly rock from blasting operations can be problematic but in this case, a risk only to site property. From an accident point of view the village of Little River is not at risk for a blast accident.

Due to their physical nature spills of both the explosive prills and emulsions do not represent significant environmental hazards. Spills of both materials can be easily contained and readily cleaned up. Arrangements are normally made with commercial spill recovery firms to attend to large spills.

Vehicle Accident and Fuel Spill

Vehicular movements will be one of the most common activities on site in relation to personnel movements, aggregate excavation, loading, hauling, service activities etc. Vehicular accidents on site roads and in the quarry could result in spill of pit run aggregate, spill of fuel, or spill of hazardous materials depending on the service of the vehicle. The severity of the consequences would depend on the location (e.g. spill into a watercourse) and the time of year (e.g., spawning of fish, fishing seasons, seasonal occupations).

Spillage of pit run aggregate would not create a serious environmental hazard and can be readily contained and cleaned up. However; fuel spillage from large off road haulage units could cause environmental damage. Containment and recovery of fuel and hazardous materials will be a concern. The volume of any spill of oil or hazardous materials will be dependent on the size of the trucks and containers.

Fuel tanks on large off highway haulage units, excavators and dozers contain 500 L to 1200 L of diesel fuel. Other vehicles will have fuel tanks similar to commercially available industrial equipment less than 500 L capacity. Should the accident involve a fuel transfer vehicle, the quantity could be larger – in the order of 6000L.

In the case of spillage of gasoline and diesel fuels, lubricants and other equipment fluids; these materials in these quantities can easily be captured and retained by site facilities. Absorption materials will be readily available for clean up.

Oil Spill at Fuel Storage Facilities

Above surface fuel storage for project vehicle and equipment use is planned, situated between the proposed office and shop locations. There will be no fuel for bulk carrying ships stored on site. Storage for heating fuels for the offices, warehouse, shops and the enclosed sectors of the aggregate wash plant will be located at the respective facilities. All of these locations are within the permanent site drainage collection system that will direct drainage to the site water and sediment retention pond.

Oil spills can occur at the fuel storage facilities or during the delivery of oil to the storage facilities at the project site. The oil storage tanks could fail as a result of spontaneous rupture or explosions. Spills could also result from human error during delivery of fuel to the oil storage tanks (e.g., overfilling, leaving valves open). Fuel storage tanks and facilities will be designed to conform to the NSDEL regulations for petroleum storage tank installations. Key design features include the installation of impervious mats, containment dykes, and the installation of sump and collection systems.

Permit applications require submission of information such as:

- Name, address of owner and type of facility.
- Name of operator, if different from storage tank owner.
- Name of landowner, if different from storage tank owner.
- Location of storage tank system, if different from address of owner, unless the system is intended to be in place for less than 60 days, whereupon the system may be registered as having one of multiple temporary unspecified locations.
- Capacity of storage tank, or combined capacity of storage tanks if there is more than one in the storage tank system.
- Type of petroleum product or allied petroleum product.
- Year of installation of each storage tank system.
- Type of storage tank and piping material for each storage tank in the system.
- Corrosion protection provided, if applicable.
- Type of pump or pumps.
- Type of leak detection.
- Internal linings, if any.
- Type of secondary containment.
- Number and locations of monitoring wells.
- Type of overfills protection and volatile organic compound (VOC) emission control.
- Manufacturer of each storage tank in the system.
- Type of storage tank, whether horizontal or vertical and diking (for AST only).

In the case of a tank rupture or leak, emergency response and clean-up procedures will be implemented. The likelihood of any oil escaping to the environment as a result of a tank failure is considered very low. Spills of hazardous substances including fuels are required to be reported to NSDEL when the quantity of the spill exceeds the amounts shown in the following table.

Schedule “A” - Spill Report Requirements

Item No.	TDGA Description of Contaminant Class	Amount Spilled
1.	1 Explosives	any amount
2.	2.1 Compressed gas (flammable)	100 L
3.	2.2 Compressed gas (non-corrosive, non-flammable)	100 L
4.	2.3 Compressed gas (toxic)	any amount
5.	2.4 Compressed gas (corrosive)	any amount
6.	3 Flammable liquids	100 L
7.	4.1 Flammable solids	25 kg
8.	4.2 Spontaneously combustible solids	25 kg
9.	4.3 Water reactant solids	25 kg
10.	5.1 Oxidizing substances	50 L or 50 kg
11.	5.2 Organic peroxides	1 L or 1 kg
12.	6.1 Poisonous substances	5 L or 5 kg
13.	6.2 Infectious substances	any amount
14.	7 Radioactive substances	any amount
15.	8 Corrosive substances	5 L or 5 kg
16.	9.1 Miscellaneous products or substances, excluding (in part) PCB mixtures	50 L or 50 kg
17.	9.1 PCB mixtures of 50 or more parts per million (in part)	0.5 L or 0.5 kg
18.	9.2 Environmentally hazardous substances	1 L or 1 kg
19.	9.3 Dangerous wastes	5 L or 5 kg
20.	none Asbestos waste as defined in the Asbestos Waste Management Regulations	50 kg
21.	none Used oil as defined in the Used Oil Regulations	100 L
22.	none Contaminated used oil as defined in the Used Oil Regulations	5 L
23.	none A pesticide in concentrated form	5 L or 5 kg
24.	none A pesticide [in] diluted form	70 L
25.	none Unauthorized sewage discharge into fresh water or sensitive marine water	100 L
26.	none Ozone depleting substances as defined in the Ozone Layer Protection Regulations	25 kg

Facility Fire

The potential for fire at the WPQMT project could be a concern for project managers. The most obvious locations for fire potential will be; vehicles, fuel storage facilities and buildings, mechanical shops, processing plants, and materials handling facilities particularly conveyor systems. From an environmental impact perspective, the most critical of these is the fuel storage where there may be sufficient fuel to sustain a fire event. Generally, the quantities of combustibles in vehicles, processing plants, and materials handling facilities will not sustain fires for long periods of time.

Fire detection and protection systems will be provided in critical locations such as fuel and lubricant storage tanks. Bilcon employees will be trained for rapid first response to fire events until local fire fighting crews arrive on site. The emergency response procedure will be implemented immediately upon the detection of a fire. Fire fighting equipment will be deployed immediately.

Containment Ponds

Sediment retention ponds are planned on the WPQMT plant site. Competent engineering professionals will design and supervise the construction of these facilities. The dams, containment berms and discharge structures, will be designed and constructed to stringent engineering standards in accordance with probable maximum precipitation events. Routine monitoring and operational inspections will be conducted by Bilcon to assure proper operation and continued stability.

The earthen sediment retention ponds for runoff water and sediment can be subject to failure and have potential to become a source of adverse environmental impact. Failure of the structures can result from design inadequacy, component failure due to accident or act of nature. In any case, the result of the failure can be an unscheduled discharge of the ponds contents into the receiving environment.

The two main accidental events considered are:

1. Dam failure, resulting in the release of settled solids and surface waters covering the sludge that may contain contaminants downstream; and
2. Untreated overflow, as a result of storm events.

A total dam failure scenario is considered as a worst-case event. It should be recognized that perimeter dam failures are avoidable by proper design, routine inspection, and maintenance. Storm events will vary widely in duration and intensity. It is therefore difficult to predict the extent of water quality effects resulting from the release of a worst-case storm event.

Each facility will be designed such that normal discharge is possible at one perimeter dam location only. This location is selected based on environmental criteria and accessibility for maintenance and inspection purposes.

Sediment Storage Area

This area, which is shown on Plan OP - 1, will store sediment from the washing process as well as sediment removed from the sediment retention ponds.

Initially, these sediments will be in an unstable condition and will need to be contained by a berm system to prevent slumping and migration down slope towards the Bay of Fundy. These berms will be engineered to prevent failure and will be inspected on a regular basis. It should be noted that as the sediment drains and dries it becomes stable and the danger of slumping diminishes. With proper design of the berms there is little risk of sediment migrating down slope to the Bay of Fundy.

The sediments stored in the storage area are planned for reclamation use. Sediment will be mixed with the reclaimed topsoil which will also be stored in a bermed area, and used to reclaim areas where quarrying has been completed

Because the solids are planned for reclamation use, all solids will be removed on a five-year cycle and redistributed as vegetation substrate over the reclaimed site. As a result, the WPQMT will produce no accumulated fine wastes.

Marine Terminal and Ship Loader

The marine terminal more fully described elsewhere in this document will have the following key features:

- Concrete and steel pile supported conveyor bridge 200 m long
- Radial motion quadrant ship loader operating at 4,000 tph
- Three berthing dolphins providing 140 m berth at water draft of 16 m
- Two mooring buoys

This structure and materials operation does not present any particular accidental environmental hazard beyond those already discussed for the land based facilities. Potential for accidental events between the marine terminal and the cargo ship is discussed in the next sections.

Marine Environment

Shipping Vessel

Large self-unloading vessels will be used to transport aggregate product from the WPQMT site to markets in the USA. All ships operate under strict TC Regulations and ISM (marine version of ISO) standard practices from which corporate governance protocols, policies and operating manuals are drafted. Similar ships transit NS waterways on a daily basis hauling coal, aggregate, and gypsum.

Navigational assist equipment employing GPS systems, radar surveillance, weather forecasting and a variety of communication devices allows for reliable and safe ship operations under all weather conditions. Only the most severe weather conditions would interfere with ship operations.

Annual design production for the project is 2.0 M tons per annum. With a 40,000 tonne capacity vessel, approximately 50 vessel transits are required per year. Larger vessels will require fewer transits. Shipping schedule at the design rate and transit times to the NY destination may favour a dedicated vessel. In the unlikely event that a ship is damaged, fuel oil or aggregate product may be released into the marine environment.

A typical ship will be a 40,000 ton to 70,000 ton self-unloader. A double hull design of modern carriers offers particular environmental advantages that will not release fuel or product if holed. In addition, most ships are also equipped with bow thrusters to assist in docking. Such ships carry a fuel load of 800 to 1000 tons bunker "C" for ship propulsion fuel and 100 tons Marine Diesel Oil (MDO) which is consumed at 4 tons per day at dock side for ship power service. Modern ships all possess fire detection and fighting equipment to be used by trained crews.

The sailing speed for the vessels in open water is 13.5 knots (nautical miles) per hour slowing to less than 3 knots during transit to berth area and less than 1 knot to approach the dock. The vessels will navigate the Bay of Fundy along established shipping lanes exiting to transit to the Bilcon dock along pre-established routes a distance of 14 km.

For docking purposes, ship operators do not consider this location to be significantly different than other locations such as Atlantic Minerals, Port au Port, NL, and Belledune, NB. Tug assisted docking will not normally be required. If storm conditions are forecast, the master has other options; to stay at sea, go to anchor, to delay docking or departure awaiting more favourable conditions.

Vessel Accidental Hazards

Modern vessels operating under strict corporate and regulatory protocols do not present significant environmental hazards. Highly valuable shipping assets, costly cleanup fees and possibly fines for environmental accidents cause ship operators to operate with high levels of care and prudence.

Product Spillage

One of the more common events is the accidental spillage of product during loading operations. In this case the material spilled, non-reactive basalt aggregate, is not considered a great hazard to the environment. Any spills will be within the immediate vicinity of the dock. Large spills can easily be recovered allowing the affected area to return to pre spill conditions.

Oil Spills

No vessel fuelling operations are planned at the WPQMT dock; therefore, there is very little opportunity for fuel oil spill at dockside. A supply of oil absorbent materials will be available on site for immediate deployment in the case of a spill. Spill response teams are available in Digby, Yarmouth, St. John, NB, and Halifax. Arrangements for the provision of emergency response will be made with the closest available service provider. Initial response by Bilcon crews can be immediate followed by off site response in a matter of hours.

Fire on Board

Fire on board these vessels is not a common event and is not considered a major environmental hazard. One commercial shipper recalls two on board fire events in the past 20 years operating a fleet of 40 ships. Those two events both related to on board conveyor belts and were brought under control by ships crew. In the case of a mineral aggregate cargo, the fuel for a conveyor fire would be very limited.

The fuel for these vessels, bunker “C” and MDO require flame source to start and are not easily sustained. All ships are equipped with fire fighting system operated by trained crews.

Vessel Collision with Dock and Grounding

While not rare, these events do not represent a major environmental hazard except in the case of a vessel break-up. With the use of with double-hulled vessel, the exterior hull can be ruptured without jeopardizing the integrity of safe vessel operations.

Vessel fuel tanks are positioned in safe locations within the interior of the ship. In any event, the bunker ‘C’ product requires heating to allow the fuel to be moved. In the worst case event of the vessel sinking, the bunker ‘C’ would stay contained within the fuel tanks. The cool water temperature would not permit the bunker ‘C’ to migrate far if at all.

The MDO would flow in the case of a tank rupture. In the worst-case scenario, 100 tons of the MDO fuel would be discharged to the environment. In calm seas this can be contained by booms and collected by absorbent materials. In the more likely case of rough seas causing the hypothetical accident, dispersal of the MDO would be extensive particularly in the wave zone near the shoreline. The MDO like diesel oils will evaporate quickly.

Ballast Water

The introduction and establishment of “invasive”, “non-indigenous” or “exotic” species may adversely affect marine ecosystems. To combat this potential effect, the International Maritime Organization (IMO) adopted resolution A. 868 (20) on the 27th of November 1997 entitled “Guidelines for the Control and Management of Ships’ Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens”. Subsequently, Transport Canada issued “Guidelines for the Control of Ballast Water Discharge from Ships in Waters Under Canadian Jurisdiction” as amended June 8th, 2001.

Annex V of the Transport Canada Guidelines addressing east coast waters is in draft form and under review. On June 11th, 2005, proposed “Ballast Water Control and Management Regulations” were gazetted and are proposed to come into effect early in 2006 and would be administered by Transport Canada under the *Canada Shipping Act*.

While the responsibility for adhering to the new regulations, when they come into force, lies with the shipping company, Bilcon will contract only reputable shipping companies.

For further details on the Management of Ballast Water, please refer to 9.2.14 in this document.

Fish Gear

There is some risk of vessel collision with and damage to stationary fishing gear. Vessels will transit along pre-established routes that will be made known to the local fishers. In the event that some gear is damaged, Bilcon has committed to a damage fund to be administered by local fishers. Similar arrangements between shippers and fishers elsewhere in the province function quite effectively to compensate fishers for loss of fishing gear in case of accidental damage or loss. It is not expected that the fishers or their communities will sustain any significant economic impact.

Whale Watching operations

Whale watching operations are in progress in this area of the Bay of Fundy from mid spring to mid fall. Ship transit routes will be made known to the whale watching operators. The ship arrival and departure schedules will be fairly regular and communication with the WPQMT will confirm the approximate shipping movement schedule. The ship operating at slow speed equipped with radar can easily see or detect the whale watching vessel and give adequate warning to stand clear even in dense fog conditions. It is not expected that the whale watching operators or their communities will sustain any significant adverse economic impact due to the shipping operations.

Collision with Marine Mammals

The Whites Point Quarry will generate additional ship traffic in the Bay of Fundy consisting of approximately 50 bulk carriers annually or a 6% increase in this category of ship traffic. Marine mammals and specifically the North Atlantic right whale, inhabit the Bay of Fundy and there is consequently the possibility of ship/whale interaction.

To diminish the risk of ship strikes, the shipping lanes were moved toward the Nova Scotia side of the Bay and further, from the right whale conservation area in July 2003. Ships serving the Whites Point Quarry will not pass through the conservation area either inbound or outbound.

While the impact assessment concludes that the risk of a whale/ship encounter between the terminal and the shipping lanes is small, this EIS sets out mitigation measures which will be carried out.

For further details on Collision with Marine Mammals, please refer to 9.2.13 in this document.

Addendum 1

Corporate Policy; Health, Safety, and Environment

Clayton Companies has longstanding corporate policies of providing a safe and healthful work place, protecting the environment, and conserving energy and natural resources. Clayton companies are committed to environmental compliance and stewardship in all of its business activities.

These fundamental business practices provide the foundation for the following corporate policy objectives:

- Provide a safe and healthful workplace and ensure that personnel are properly trained and have appropriate safety and emergency equipment.
- Be an environmentally responsible neighbour in the communities where we operate, act promptly and responsibly to correct incidents or conditions that endanger health, safety, or the environment. Report them to authorities promptly and inform affected parties as appropriate.
- Conserve natural resources by reusing and recycling materials.
- Develop, manufacture, and market products that are safe for their intended use, efficient in their use of energy, protective of the environment, and that can be reused, recycled or disposed of safely.
- Use development and manufacturing processes that do not adversely affect the environment, including developing and improving operations and technologies to minimize waste, prevent air, water, and other pollution, minimize health and safety risks, and dispose of waste safely and responsibly.
- Participate in efforts to improve environmental protection and understanding and share appropriate pollution prevention technology, knowledge and methods.
- Meet or exceed all applicable government requirements and voluntary requirements to which Clayton Companies subscribes.
- Strive to continually improve Clayton Companies environmental management system and performance.
- Conduct audits and self-assessments of Clayton Companies compliance with applicable rules and regulations.

Every employee and every contractor on Clayton Companies premises is expected to follow this policy and to report any environmental, health, or safety concern to Clayton Companies management. Managers are expected to take prompt action.

Clayton Corporation Safety Program

The health of our employees and the safety of our operations and products, from manufacturing through transportation and product use, are the paramount reasons why we conduct and give high priority to numerous training, awareness and other safety-related programs throughout the year. Our commitment to the health and safety of our employees, customers and the communities in which we operate is among the core principles upon which Clayton Corporation bases its business operations.

Our safety culture is characterized by five key principles:

- All injuries are preventable
- Safety is good business
- Management is accountable
- Employees are the key
- Safety must be managed through a structured process

We promote the development and administration of comprehensive health and safety programs to minimize hazards and to prevent injury or loss to our employees.

The Director of Health and Safety is responsible for the development of these safety programs and policies. Each plant supervisor or manager is responsible for the implementation of the programs and policies at their specific facility. Employees are charged with adhering to the safety policies and procedures at all times.

The Director of Health and Safety makes regular site inspections, conducts compliance audits, and evaluates the safety program annually. He/she also meets with management to plan and implement further improvements in the safety program. Common sense and personal interest in safety are still the greatest guarantees of employee safety at work, on the road, and at home. We take employee safety and health seriously and any wilful or habitual violation of safety rules will be considered cause for dismissal. The cooperation of every employee is necessary to make this company a safe place in which to work.

Employees are encouraged to report safety violations, industrial hygiene concerns and suggestions for improvement to the overall safety and health program to either their direct supervisor and/or directly to the Director of Health and Safety. All suggestions are taken seriously, receive prompt response; results of any actions or industrial hygiene surveys are reported to all concerned.

Addendum 2

FACILITY SECURITY PLAN (Sample selection)

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1.0 Security Administration and Organization of the Facility

1.1 _____, **will assume duties of the Facility Security Officer (FSO),**
08879. He can be contacted at the following numbers:

Cell Phone: ____ hours a day

Beeper:

Fax:

In addition, the onsite shift supervisor can be reached at:

The FSO shall be qualified through experience or training to perform the following;

1. Security administration and organization of the company vessel (s)
2. Vessel, facility and port operations relevant to the passenger vessel industry
3. Vessel and facility security measures, including the meaning and the consequential requirements of the different MARSEC Levels
4. Emergency preparedness and response and contingency planning
5. Security equipment and systems and their operational limitations (as it applies to his/her operation)
6. Methods of conducting audits, inspection and control and monitoring techniques

7. Techniques for security training and education including security measures and procedures
 8. Relevant regulations
 9. Methodology of security assessments, surveys and inspections
 10. Handling of SSI (Security Sensitive Information) and related communications
 11. Knowledge of current security threats and patterns
 12. Recognition and detection of dangerous substances, dangerous devices, and characteristics and behavioural patterns of persons who are likely to threaten security
 13. Techniques used to circumvent security measures
 14. Methods of screening
 15. Security drills and exercises and their assessment
- 1.1.1. FSO shall conduct or ensure that a Facility Security Assessment, an initial comprehensive security survey of the terminal has been conducted.
 - 1.1.2. FSO shall retain all responsibility for full implementation of this FSP although he may delegate certain specific tasks to other individuals.
 - 1.1.3. Have experience or training to carry out the function of FSO as stated in 33 CFR 105.205;
 - 2.1.4. Oversee the development, revision and implementation of the facility security plan and the integration of such with the facility security plan and ship security plan.
 - 1.1.5. Ensure the FSP is submitted to the COTP for approval as well as informing the COTP of any plans to change the facility.
 - 1.1.6. Any proposed amendments to FSP shall be submitted to the COTP for review 30 days before the amendment is to take effect. All relevant documentation to support such amendment shall be included.

- 1.1.7. Ensure that an annual audit is conducted and if necessary update or revise FSA and FSP.
- 1.1.8. The facility security officer must maintain the records required in this section for at least two years unless otherwise noted. These records will be made available to Coast Guard Officers or Petty Officers upon request.
- 1.1.9. Approve modifications to the facility security plan, when necessary, in order to correct any deficiencies and ensure consistency with the ship security plans.
- 1.1.10. Encourage security awareness, through formal as well as informal training sessions, and vigilance; and ensure that adequate training has been provided for personnel.
- 1.1.11. Ensure that facility personnel are briefed of changes in security conditions at the facility. This will be done in person through verbal as well as written communication. Any security changes that will have an immediate effect upon operations shall be made via phone, fax, and/or email by FSO.
- 1.1.12. Ensure that all proper signage regarding security awareness is posted and that visitors are informed of security procedures. In addition signage should read, "Failure to consent to screening or inspection will result in denial or revocation of authorization to enter."
- 1.1.13. Regular inspections of the terminal;
- 1.1.14. Ensure that FSP is exercised per 33 CFR 105.220
- 1.1.15. Propose modifications to the security plan to correct deficiencies and when necessary to satisfy the security requirements as specified in the facility security plan;
- 1.1.16. Ensure that all occurrences that threaten the security of the facility are recorded and reported to the owner or operator. Ensure notification to law enforcement and other emergency service providers to permit timely response to any transportation security incident.
- 1.1.17. Coordinate implementation of facility security functions with ship/vessel security officer;
- 1.1.18. Develop and maintain relationships with appropriate law enforcement, security professionals, and other government officials.
- 1.1.19. Ensure preparation and submission of required reports.

Addendum 3

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN

**CLAYTON BLOCK COMPANY, INCORPORATED
METUCHEN, NEW JERSEY**

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1.0 Introduction

This Spill Prevention, Control and Countermeasure (SPCC) Plan, hereinafter referred to as the “Plan”, is required by Title 40, Code of Federal Regulations Part 112 (40 CFR 112). Facilities covered under the SPCC regulations must establish procedures and methods to minimize the Potential for the discharge of oil into the navigable waters of the United States. The regulations apply to facilities possessing either: (1) total aboveground petroleum storage capacity greater than 1,320 gallons, (2) a single aboveground container having petroleum storage capacity greater than 660 gallons, or (3) total underground petroleum storage capacity greater than 42,000 gallons and, which due to location could reasonably be expected to discharge oil into or upon navigable waters. The Clayton Block, Metuchen, New Jersey facility has an aboveground storage capacity of 24,425 gallons. No petroleum products are presently stored underground. Procedures and countermeasures specified in this plan are primarily intended to prevent the discharge of petroleum products into nearby storm sewers.

In preparing the SPCC Plan for the Clayton Block, Metuchen facility, the following reference documents were utilized. These documents are provided in Appendices A and B, respectively.

- Title 40, Code of Federal Regulations Part 112 (40 CFR 112).
- Suggested Procedure for Development of SPCC Plans, American Petroleum Institute, Second Edition, August 1, 1989.

The oil storage facilities covered in this Plan are those that were identified to the preparers of the Plan by Clayton Block personnel during a site inspection on June 19, 1991 and follow-up site inspections conducted on April 21, 1992 and July 2, 1992. Drawings and specifications for oil storage facilities were not available to the inspectors; therefore all information contained in this plan is based on the visual site inspections.

2.0 General Facility Information

Name of Facility: Clayton Block Company
Type of Facility: Cinder building block manufacturer
Name of Facility Operator: Mr. Doug Clayton
Address: 515 Lakewood-New Egypt Road
Lakewood, New Jersey 08701
Telephone: (908) 363-1800
Location of Facility: 1025 Route One South
Metuchen, New Jersey
Date of Initial Operation at this Facility: 1946
USEPA I.D. No.: NJD-982743111
Number of Reported Petroleum Product Spill Events Within Past 12 Months:
None

Designated Person Accountable for Spill Prevention:

Name: Mr. Douglas Clayton
Title: Corporate Operations Manager
Telephone: (908) 363-1800

Petroleum Product Storage Regulated Under 40 CFR 112:

Aboveground: Underground: None

Fuel Oil

(2) 10,000 gallon
(1) 1,000 gallon
(1) 500 gallon

Total Petroleum Product Storage Capacity:
24,425 gallons

Unleaded Gasoline

(1) 1,000 gallon
Motor Oil
(2) 275 gallon

Hydraulic Oil

(2) 275 gallon

Gear Oil

(1) 275 gallon

Waste Oil

(2) 275 gallon

3.0 Designation of Responsibility

The Corporate Operations Manager, Mr. Douglas Clayton, has been designated with the responsibility for spill prevention control and countermeasures recommended in this plan. His responsibilities include:

- Initiate storage facility inspections and proper record keeping as described in this Plan;
- Initiate corrective actions for deficiencies found during inspections.
- Revise and update drawings which show existing equipment and/or structures in place for spill prevention control and countermeasure purposes;
- Update the Plan as necessary to assure that it is current and responsive to the activities and operations performed at the facility;
- Review all plans and drawings related to oil storage, handling or transfer facilities for any new construction, maintenance, or remodelling to determine if amendment of this Plan is required, and all federal, state, and local regulations are being complied with;
- Initiate the personnel training as discussed in this Plan;
- Identify the number and types of personnel needing training. New employees shall be trained within six months from the date of employment;
- Conduct facility surveys at least once every three years to determine if modifications are required to achieve compliance with 40 CFR 112;
- Inspect security systems such as access control, locked storage areas, lighting, fencing, traffic control and others, to minimize the potential of a spill resulting from vandalism or unauthorized entry;
- Visually inspect vehicles that are delivering fuels to the facility for leaks and any obvious mechanical deficiencies which could cause a spill event or accident;

The Operations Manager may delegate some of the above responsibilities to Mr. Dan Clayton, Site Operations Manager, if necessary.

4.0 Certification and Management Approval

Name of Facility: Clayton Block Company

Location of Facility: 1025 Route One South, Metuchen, New Jersey

Name and address of owner or operator:

Name: Mr. Douglas Clayton
Address: 515 Lakewood-New Egypt Road
Lakewood, New Jersey 08701

Designated Person Accountable for Oil Spill Prevention at Facility:

Name: Mr. Douglas Clayton
Title: Corporate Operations Manager

MANAGEMENT APPROVAL

This SPCC Plan will be implemented as described herein.

Signature: _____

Date: _____

Name: Douglas Clayton

Title: Corporate Operations Manager

CERTIFICATION

I hereby certify that I am familiar with the facility and with the provisions of 40 CFR, part 112 and attest that this SPCC Plan has been prepared in accordance with good engineering practices.

Daniel D. Chen

Printed Name of Registered Professional Engineer

(Seal)

Signature of Registered Professional Engineer

Date _____

Registration No. 26059 State: New Jersey

Addendum 4

Extracted from

GREAT LAKES DREDGE & DOCK CO.

* FLEET OF VESSELS *

SHIPBOARD OIL POLLUTION

EMERGENCY PLAN

As defined by

MARPOL 73 / 78

Annex I

Regulation 26

Prepared by:

ECM/HUDSON MARITIME SERVICES, LLC
Connecticut Philadelphia Houston New Orleans Oslo

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FOREWORD

This Shipboard Oil Emergency Pollution Plan is provided to assist shipboard and shore side personnel in dealing with an unexpected discharge of oil. Its primary purpose is to set in motion the necessary actions to stop or minimize the discharge and to mitigate its effects. Effective planning ensures that the necessary actions are taken in a structured, logical and timely manner.

The plan makes use of flowcharts and checklists to guide the Master, Barge Captain or Person in Charge (PIC) through the various actions and decision that will be required in an incident response. The charts and checklists provide a visible form of information, thus reducing the chance of oversight or error during the early stages of dealing with an emergency situation.

With regard to tank plans, pipeline diagrams, capacity plans and general arrangement plans, reference is made in Chapter 6.2.

The plan is designed to link into the Company's corporate plan for dealing with oil pollution emergencies. The Master, Barge Captain or PIC will be backed up on-scene by management-appointed personnel as the circumstances and the position of the vessel at the time of the incident require.

- For any plan to be effective, it has to be:
- Familiar to those with key functions on board the vessel;
- Reviewed and updated regularly; and
- Tested for viability in regular practices.

Training and exercises in implementation of the onboard mitigation procedures must be held at regular intervals. Similarly, exercises in communication procedures are necessary to verify that the Company's corporate plan is also effective.

ENVIRONMENTAL POLICY

Great Lakes Dredge & Dock Company manages business in a socially, environmentally and economically responsible manner. Quality is an integral part of the Company's operating philosophy. Quality is reflected in the approach to all aspects of business policy in vessel owning, management and operations. Focus on Quality in turn fosters safe and ethical behaviour in the use of Company equipment and assets.

It is Great Lakes Dredge & Dock Company's policy, therefore, to avoid all types of pollution and to conduct operations with the utmost regard for the safety of its employees, the public and the environment- in accordance with sound business practice and in compliance with environmental regulations.

- All Great Lakes Dredge & Dock Company personnel will adhere to this policy and will correct or identify to appropriate supervisory levels situations that run counter to this policy. Specific guidelines to the SOPEP are set forth below:
- Vessel-specific Shipboard Oil Emergency Plans have been developed and distributed in accordance with Chapter 1.5 -Distribution.
- Plans will be updated as necessitated by good operating practice, trade modifications and requirements at international, national, state and province levels.
- SOPEPs will be maintained and updated on board and at corporate headquarters. Plans will be reviewed as outlined in Chapter 0.4 -Record of Changes and Chapter 1.4 - Administration and Updating.
- A Pollution Response Officer aboard each vessel will be designated in writing.
- The Pollution Response Officer will maintain an up-to-date library of oil spill prevention and response publications on board.
- An aggressive program of onboard pollution prevention and response to emergencies will be carried out, including training and exercises.
- Notification (alerting) shall be aggressively carried out in accordance with Section 2 - Reporting Requirements, Section 5 National and Local Coordination and Appendices 1 and 2. If doubt exists, the notification procedures shall be carried out.
- Both vessel and shore-based personnel shall extend all reasonable courtesy and cooperation to federal, state and local authorities consistent with the safety of the vessel.
- Public Affairs (meeting with the press) will not normally be undertaken by ship personnel. However, appropriate measures will be undertaken to favourably affect public opinion whenever possible.
- In the event of a discharge, prevention and minimization of the spillage are priority concerns - consistent with the safety of the vessel, crew and shore side personnel.
- Cleanup on board the vessel will proceed without delay. If dispersants or degreasers are utilized on deck care shall be taken that they do not migrate overboard.
- If a spill occurs that discharges, migrates or spreads overboard, the cleanup will be conducted by shore side personnel under a standing engagement, or as otherwise arranged.
- Over – the – side cleanup activities by the ship’s crew shall not normally be undertaken.
- Compliance with the provisions of this Shipboard Oil Pollution Emergency Plan is the responsibility of the Master or Barge Captain/PIC and the Emergency Response Team Leader.

Section 7 of the Canadian -Oil Pollution Prevention Regulations (SOR/93-3) and Regulation 26 of Annex I of MARPOL 73/78 require every oil tanker of 150 gross tons and above, and every vessel other than a tanker of 400 gross tons and above, to have a shipboard emergency plan with four elements;

- 1 procedures for reporting of pollution incidents;
- 2 a listing of authorities to be notified;
- 3 a detailed description of actions to be taken by a vessel's crew to reduce or control an oil discharge and
- 4 Procedures for coordinating on board activities with national and local authorities.

This Shipboard Oil Pollution Emergency plan meets the MARPOL requirements.

The plan required by Regulation 26 of Annex 1 of MARPOL 73/78 will **not** fully meet the US regulations under the Oil Pollution Act of 1990 (OPA 90). However, OPA 90 regulations only pertain to tankers and other-vessels that carry oil either as primary or secondary cargo. They do not apply to dry cargo vessels such as freighters, containerships, RO/ROs, etc. While there is no requirement to do so, operators of these vessels are encouraged to develop Vessel Response Plans in the unlikely event of a pollution incident as the result of bunker transfer operations or other incidents involving fuel. The OPA 90 Vessel Response Plan for these vessels meets the intent of OPA 90 for operations in US navigable waters.

Under OPA each state is allowed to develop more stringent regulations for spill prevention and spill response activities. As such some states also require owners and operators of dry bulk vessels to develop and maintain Vessel Response Plans. One state also requires owners and operators of tank and dry cargo vessels to develop and maintain Spill Prevention Plans.

RESPONSE PLAN REQUIREMENTS

This Shipboard Oil Pollution Emergency Plan has been prepared to meet the requirements in MARPOL 73 annex 1, Regulation 26 with later amendments and particular requirements from various countries. This plan contains all information and operational instructions required by the IMO Guidelines (MEPC Circ. 256).

This plan has been examined by the Canadian Board of Steamship Inspection and, except as provided below" no alterations or revisions shall be made to any part of it without prior approval of the Board.

Changes to Section 5 and the Appendices will not be required to be reviewed by the Board. This Section and the Appendices shall be maintained according to the procedures in Section 1.4.

11.3 Environmental Protection

The Environmental Protection Plan encompasses the approach to environmental management and strategies for implementation set out in 11.0.1, management criteria set out in 11.1, and accidents and malfunctions, set out in 11.2.

11.4 Monitoring

Bilcon of Nova Scotia Corporation will develop and conduct monitoring programs for various environmental components. The objective of the monitoring programs will be to determine the accuracy of impact predictions, effectiveness of mitigation measures, and to determine if any adaptive management actions should be taken. The goal would be to ensure that the major phases of the project (construction and operational activities) meet regulatory requirements and environmental management objectives.

Monitoring program outlines have been presented previously in the EIS for valued environmental components. Where quantifiable threshold criteria exists for an identified environmental component or permit requirements indicate thresholds, these thresholds will be used as indicators of compliance. For environmental components without quantifiable threshold criteria, qualitative professional judgement will be used. If monitoring data indicates non-compliance with permit requirements, adaptive management procedures will be discussed with the appropriate regulatory authorities.

Bilcon of Nova Scotia Corporation will be responsible for all monitoring activities including funding of data collection, data analysis including laboratory work, and report preparation. A similar scientific approach as previously conducted for pre-project baseline data collection and analysis will be followed. Scientific methods will be followed. Monitoring results will be made available to interested regulatory agencies. Public access to the results will be made available through the Community Liaison Committee.

Following is **Table ECM - 2** which summarizes the environmental components identified to be monitored, the timing, frequency, and reference to the particular paragraph of the EIS which describes the proposed monitoring program.

11.5 Mitigation Measures

As noted under 4.2 Format, Bilcon has dealt with each physical, biological, or human VEC under the various sections in this EIS and has set out the discussion under Research, Analyses, Mitigation, Monitoring, and Impact Statement. This methodology was felt to provide more continuity to the reader.

However, all mitigation measures have been extracted from each of the VECs and are set out in **Table ECM - 1**.

Bilcon will be responsible for all mitigation measures set out in **Table ECM - 1** and the effectiveness of the mitigation will be checked through the follow-up monitoring program set out under each VEC and in **Table ECM - 2**.

Bilcon's Operations Manager will be specifically responsible to ensure that mitigation programs are established at the appropriate times and to ensure that the monitoring program is carried out and reporting procedures observed.

11.6 Follow-up Program

For each of the VECs identified and examined which, following research and analysis, demonstrated the potential for a negative impact, a strategy for mitigation of the negative effect was established. This mitigation is shown in the section for each VEC and for the project as a whole, the mitigation measures are set out in **Table ECM - 1**

Each of these mitigation measures will be established by Bilcon at the appropriate time. However, it is critical to ensure that mitigation measures are having the desired effect. Accordingly, for each of the VECs where mitigation has been proposed, a program of follow-up monitoring is set out under the various VEC's and tabulated in the follow-up monitoring **Table ECM - 2**.

The procedures for ensuring that the monitoring regime is established and executed is set out under 11.0, Environmental Management, as are the strategies for reporting to both the Regulatory Agencies, where required, and to the community.

The proposed environmental monitoring program is designed to detect potential project impacts measured against an established baseline or threshold as described under each VEC. Exceeding a baseline or a threshold is a trigger for action and requires the Operations Manager to undertake adaptive management (developing improved techniques while conducting management activities) to reduce or eliminate environmental impacts. Adaptive management procedures are set out in para. 3.5 and 10.0.1.

11.7 Residual Impacts

Each identified VEC is examined in the EIS and the same methodology has been employed in each case. The parameters of the VEC are researched; the research is analyzed; where appropriate, mitigation measures are established; a monitoring program is specified to ensure that the mitigation measures are successful and, finally, the residual impact following mitigation is specified.

The impact statement in each case sets out the characteristics of the impact with respect to time, significance of the impact, and the scale of the impact following mitigation. The Impact Summary Table 2 in 9.4, sets out all the VEC's and the residual impacts.

Each VEC was selected as set out in 8.3 Section of the Valued Environmental Components, and Spatial and Temporal Boundaries are defined in 8.4.1 and 8.4.2. Further information on the Impact Assessment Methodology is contained in 8.0, as are definitions of temporal, magnitude, type, scale, significance, and possibility.

11.8 Compensation

Although no significant negative effects of the project were identified, there were several insignificant negative effects in which compensation is proposed as part of the mitigation plan:

- i) A small area of fish habitat will be lost in the footprint of the piles supporting the ship berthing dolphins and a compensation plan has been proposed by the Proponent and accepted in principle by the Department of Fisheries and Oceans Canada.
- ii) The bulk carrier will leave the shipping lanes and travel to Whites Cove through an area where lobster fishing is carried out from December through May. Typically in the early winter months, traps are set some distance from shore but in the spring, lobsters move closer inshore and there will be an issue with respect to damage to lobster gear. Meetings with the fishermen who traditionally fish in Whites Cove have resulted in a basic agreement that the bulk carrier will travel the same route, both inbound and outbound each trip, and advance notice will be given to fishers. The Proponent will additionally give a sum of money to a committee of Whites Cove fishers each season which will be administered by the committee to compensate for damage to traps and other fishing gear.

iii) While it is considered highly unlikely that any domestic water well in the vicinity of the quarry operation will be affected, the Proponent will compensate any property owner whose well does become affected, as a result of quarry operations, by drilling a new well at the Proponent's expense.

iv) There appears to be no general perception among buyers that the quarry and marine terminal is likely to affect property values generally on Digby Neck and Islands. However, there is a possibility that property values may be affected in areas immediately adjacent to the operation. It is proposed that an evaluation by a qualified real estate appraiser take place on residential properties within 800 m of the active quarry prior to construction and a re-evaluation be carried out five years later to determine whether value has been lost. Any loss so determined would be compensated by Bilcon of Nova Scotia Corporation.

There is also no evidence that communities in the area of the quarry operation will suffer damages or losses due to the operation of the project. To the contrary, there is evidence that family sustaining jobs will be gained in local communities which will in part counter recent out-migration. However, it is the Proponent's corporate policy to support local communities and local organizations. This has been demonstrated over the past four years and will continue throughout the life of the project.

The fish habitat compensation plan will be implemented upon the Proponent receiving approval for the project, while other compensation agreements will be honoured on an annual basis in the case of the Whites Cove fishers and on an as-required basis in the case of well problems. The Proponent is the subsidiary of a well established New Jersey family-held company which will provide funding for the construction of the Whites Point project (\$40.6 CAD million) from its own resources. No specific mechanism is proposed to finance the proposed compensation plans, other than from on-hand resources.