



**BLACK MOUNTAIN WEST
ENVIRONMENTAL PROTECTION PLAN
(EPP)**

Submitted by:

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Submitted to:

Government of Newfoundland and Labrador
Department of Environment and Conservation
Environmental Assessment Division

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1.1 INTRODUCTION

This Environmental Protection Plan (EPP) was prepared by **Newcrete Investments Limited Partnership** for the **Black Mountain West** Project. The undertaking was registered with the Department of Environment and Conservation in June 30, 2015 and a decision rendered by the Minister on November 26, 2015 releasing the project from the Environmental Assessment process, pending successful completion of an Environmental Protection Plan. This document is submitted in response to this requirement.

Newcrete Investments Limited Partnership (Newcrete) is currently operating an approximately 90 hectare quarry in the area of Black Mountain and is proposing to develop an additional 25.6 hectares, Black Mountain West, immediately adjacent to existing operations. Like the current operations, Black Mountain West will be a quarry operation for the mining and processing of sand and gravel aggregate for use in Newcrete's concrete batching plant operations.

1.2 Purpose

This EPP aims to address known and potential environmental issues associated with quarry operations, and was developed in compliance with environmental legislation and regulatory requirements, as well as Newcrete's Environmental Policy.

This EPP demonstrates Newcrete's commitment to environmental protection, prevention of pollution, and mitigation of potential adverse environmental effects. Newcrete has prepared this EPP to communicate this commitment to staff, contractors, regulatory agencies, and the public. This plan is intended for use during the development and operation of the Black Mountain West Quarry.

An EPP is a living document and may not address all of the environmental situations that arise on an individual project. Revisions and upgrades may be made during the course of the Project to reflect unforeseen circumstances or improvements as the result of a process review.

1.3 Objectives

The main objectives of this EPP are to 1) Identify proposed activities associated with the Project that could adversely affect the environment, and 2) Outline measures Newcrete intends to implement to prevent and/or minimize environmental impacts.

In addition, this EPP will:

- Clearly state Newcrete's Environmental Policy;

- Ensure environmental considerations are part of the decision making process; and
- Ensure compliance with applicable regulatory requirements, guidelines, and contractual conditions.

1.4 Roles and Responsibilities

Capital Ready Mix Limited's General Manager will be the primary person responsible for all aspects of the Project, including environmental issues. Specific environmental responsibilities of the Project Manager include:

- ensuring adequate plans and resources are in place to achieve EPP commitments to minimize environmental impacts;
- ensuring compliance with relevant regulations, authorizations, permits and protocols; and
- reviewing incident reports as they are submitted and ensuring the proper course of action is taken to manage unexpected environmental conditions or events.

Primary responsibility for the implementation of this EPP rests with Newcrete's Aggregate and Mineral Resources Manager, who will:

- review the EPP as required;
- ensure revisions are appropriately distributed;
- ensure EPP holders and their staff are familiar with the EPP and its procedures;
- meet with the Project Manager and site crew to assess the adequacy of the EPP and its implementation, as well as to identify opportunities for improvement;
- provide orientation sessions for project personnel and staff as needed;
- ensure the reporting to all appropriate agencies incidents of non-compliance.
- ensure ongoing communication with appropriate regulatory agencies and other interested parties on behalf of Newcrete.

The Black Mountain West Operations Manager will be primarily responsible for site environmental issues during Project operations, including:

- monitoring project work to ensure that all provisions of the EPP and government approvals/authorizations are adhered to;
- determining drainage discharge locations, as required;
- verification of buffer zone maintenance; and
- responsibility for determining the requirements of erosion control measures.

2.0 ENVIRONMENTAL POLICY

It is the primary and continuing policy of Newcrete that, in the conduct of its activities it will endeavor to minimize, and where practical, eliminate adverse effects on the physical environment in which its activities are carried out, and endeavor to protect the health and safety of its employees, and others who may be affected by these activities.

To minimize environmental impacts concerning our activities, products and services, Newcrete shall:

- Commit to a strong environmental management system that protects and preserves the physical environment in which its activities are carried out.
- Minimize the consumption of resources, prevent pollution, and reduce waste, wherever practicable.
- Comply with applicable legal and other requirements to which Newcrete subscribes which relate to its environmental aspects.
- Educate, train and motivate employees to carry out tasks in an environmentally responsible manner.
- Encourage and help steward a proactive environmental culture for all Newcrete personnel including suppliers and subcontractors.
- Commit to continual improvement of its environmental management system and environmental performance, and
- Communicate this Policy to all Newcrete's employees, suppliers and subcontractors.

Employees at every level, including management, are responsible and accountable for the company's overall environmental management system. Complete and active participation by everyone, every day, in every job is necessary for the environmental excellence of the company expectations. Management supports coordination of environmental initiatives and addresses environmental issues among all workers on the jobsite.

3.0 DESCRIPTION OF THE UNDERTAKING

3.1 Project overview

Newcrete is proposing to develop a sand and gravel pit immediately adjacent to an existing development in the Black Mountain Pond area of Newfoundland to supply aggregate for concrete batch plant operations. The proposed site is 25.6 Ha in size and is located approximately 1.8 km southwest of Incinerator Road off the Foxtrap Access Road (see Figure 1). The proposed development is situated immediately adjacent to the western boundary of existing Quarry Lease 114308. If approved, quarrying will continue from within Lease 114308 into the proposed area.

There aren't any ponds or streams within the proposed Black Mountain West project area and there are no predominant natural drainage features defined within the site; runoff is generally from the west, which is upslope, to the east and south, which are downslope.

3.2 Quarry Development

The proposed lease will be mined in four phases and on a series of approximately 5 m benches to correspond to the projected annual production for the site, starting with Phase 1 in year 1 (See Figure 2).

3.3 Mining Method and Production

The operation's yearly production will be mined by run-of-the-pit removal on a series of approximately 5 m benches. Operations at Black Mountain West will take advantage of existing infrastructure and facilities at the adjacent development (Quarry Lease #114308); aggregate will be trucked to Newcrete's current processing area immediately adjacent to the newly developed site (see Figure 3: Proposed and existing quarry lease locations, Existing Wash Plant Site) and grubbing and topsoil will be primarily stockpiled and windrowed in the existing location (see Figure 3: Proposed and existing quarry lease locations, Existing Grubbing and Topsoil Stockpile). Additionally, the existing product-laydown area, as well as the wash plant, including the cyclone, settling tank, and settling ponds, will remain in the current location for use. The crusher will be moved as required and will be located near the quarry face.

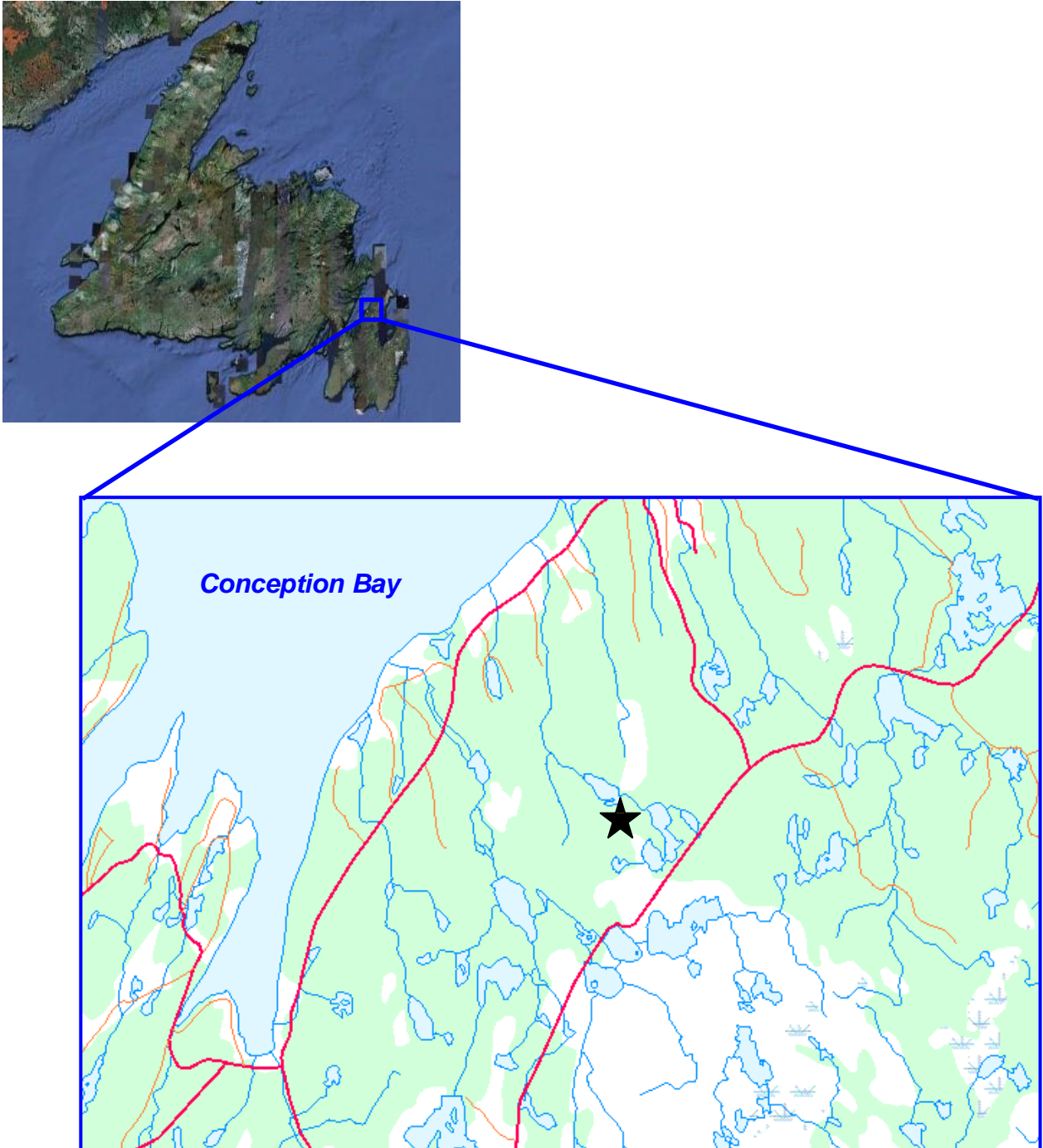
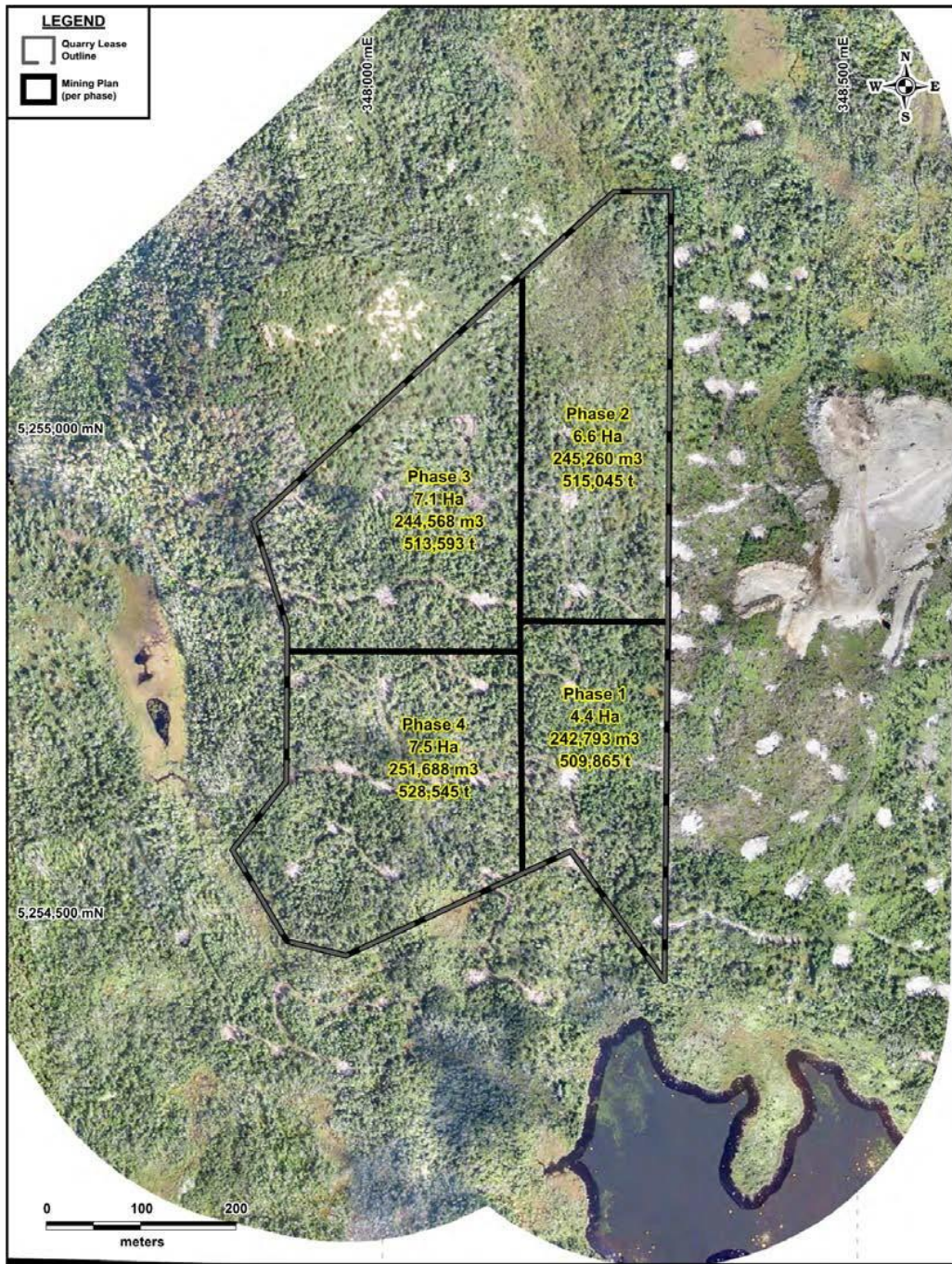


Figure 1. Approximate location of the proposed quarry.



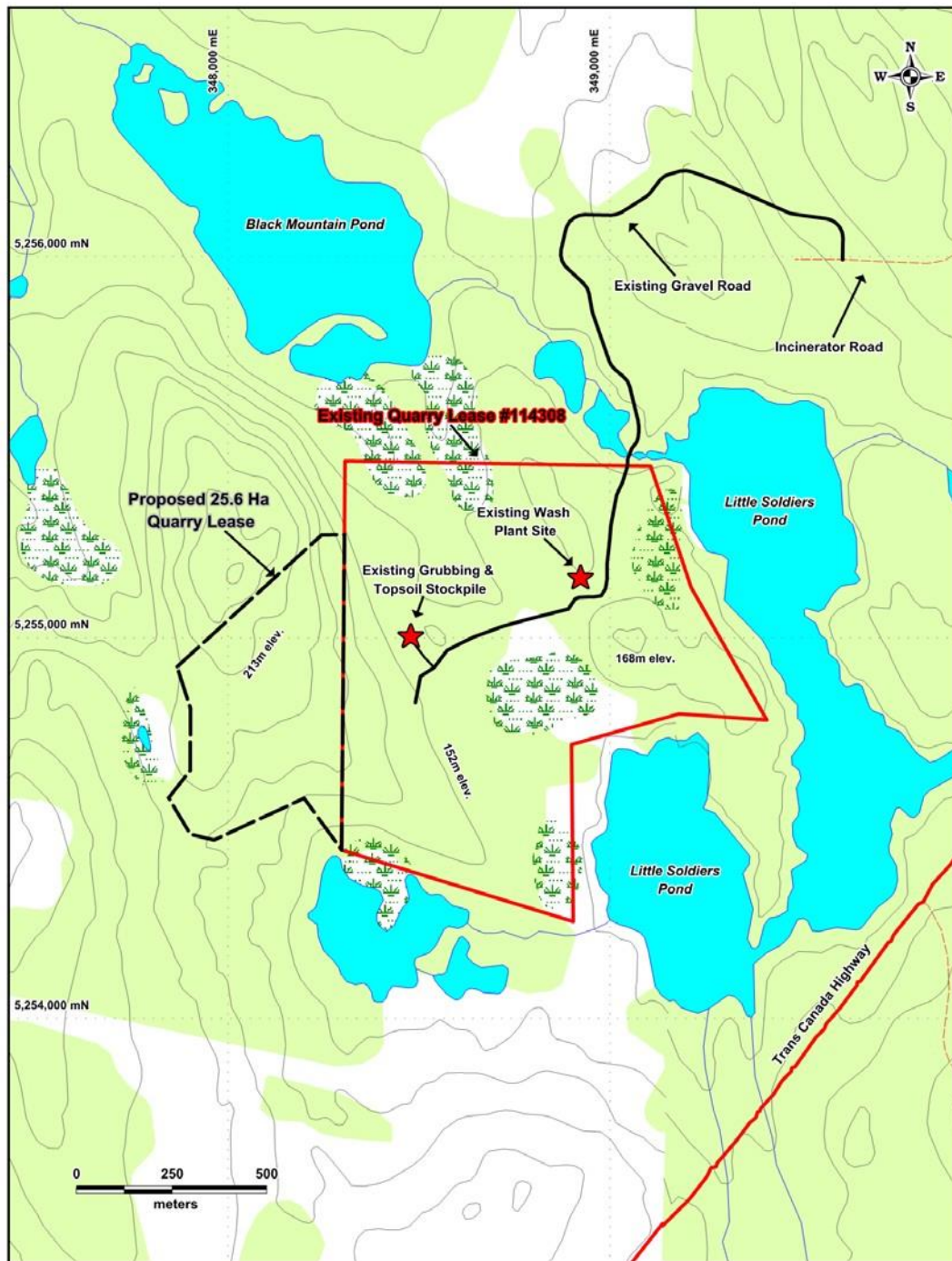


Figure 3. Proposed and existing quarry lease locations.

3.4 Reclamation and Closure Plan

Progressive reclamation is part of the standard conditions of the quarry lease. These terms require that lease holders slope mined-out areas, and preserve and re-spread the original organic material from the site.

As a result of the design of this site (*i.e.* progressive development over a series of mining phases), reclamation will also be completed in a progressive manner. Once Phase 1 of the quarry is exhausted and Phase 2 is in use, reclamation will begin on Phase 1. Successive reclamation of each exhausted phase will continue throughout the life of the Project, leaving only the area required for safe and acceptable access to the next phase for reclamation until the end of the quarry life. Initial reclamation efforts for Phase 1 are anticipated to occur in year 2 and cover approximately 2.1 Ha in the southeast corner, while 3.2 Ha of Phase 2, and 5.8 Ha of Phase 3 will be reclaimed in years 3 and 4, respectively. Once all of the aggregate is extracted from Phase 4, the remaining 14.5 Ha throughout the quarry lease will be reclaimed.

Newcrete's plan for reclamation exceeds the requirements of the lease. Surficial soils, subsoil, and grubbing will be stripped to prepare each excavation phase. These materials will be stockpiled until needed for cover in reclaimed areas. The sloping requirement will be achieved by leaving a buffer of aggregate in place along the lease boundary containing a sufficient volume that, when re-contoured with a dozer, the pit-face of the mined out area can be sloped to the required 30 degree angle. Following final sloping, the stockpiled material and subsoil will be spread, hydro-seeded with grass seed, and finally, planted with tree seedlings. It is important to note that Newcrete has completed a forest density study within the proposed lease area and has determined that the existing forest cover is composed primarily of balsam fir intermixed with minor tamarack and minor white birch, making up ~71% of the forest. The remainder of the lease area contains coniferous scrub, white birch, deciduous scrub and barren rock making up the remaining ~19%, ~8%, ~2% and <1%, respectively. This study provides an adequate baseline for determining replanting efforts, with a goal of reforestation back to current conditions.

Newcrete's reclamation plan as described above will result in a gently sloping, vegetated area that is a safe, environmentally stable, visually-pleasing area that will blend with the surrounding ecosystem.

4.0 PERMITS AND APPROVALS

The conduct of the work is subject to various regulatory controls. Listed below are the applicable legislation and regulations potentially related to the project.

Table 1 Permits potentially required for the Black Mountain West Quarry

Department/Agency	Applicable Legislation	Authorization	Project Element
Provincial Government Requirements			
Mines and Energy Division, Department of Natural Resources	<i>Quarry Materials Act, 1998</i> and Regulations	Quarry Lease	Pit construction and operation
Department of Environment and Conservation	<i>Environmental Protection Act, 2002</i>	Release from the EA process	Quarry project
Forestry Division, Department of Natural Resources	<i>Forestry Act and Timber Cutting Regulations</i>	Commercial Cutting Permit	Land clearing
Service NL, Government Services Centre	Used Oil Control Regulations	Certificate of Approval	Storage of used oil
Service NL, Government Services Centre	<i>Environmental Protection Act, Fire Prevention Act and Storage and Handling of Gasoline and Associated Products Regulations, 2003</i>	Registration of tanks under Storage and Handling Gasoline and Associated Products Regulations	Storage, handling and transportation of fuel products
Water Resources Division, Department of Environment and Conservation	<i>Water Resources Act of Newfoundland and Labrador, Section 48</i>	Permit to extract water from a water body	Water Use
Government Services Centre	<i>Protected Road Zoning Regulations, 1996 and Butterpot-Witless Bay Line Environs Development Regulations</i>	Preliminary Application to Develop Land and Permit to Develop	Quarry Project
Federal Government Requirements			
Transport Canada	<i>Transportation of Dangerous Goods Act, 1992</i>	Permit to store, handle and transport dangerous goods	Storage, handling and transportation of fuel and chemicals

5.1 ENVIRONMENTAL PROTECTION MEASURES

An environmental impact is a change to the environment, positive or negative. For the purposes of this EPP, negative impacts resulting from Newcrete's activities are the primary concern.

Newcrete site staff and crew possess an understanding of the sensitive site components that could be impacted as a result of development and operations activities, including, but not limited to:

- Fish and fish habitat;
- Vegetation; and
- Wildlife and wildlife habitat, including migratory and breeding birds.

The environmental protection procedures outlined in the following subsections shall be followed, together with those detailed in the terms, conditions, provisions or reservations of all permits, approvals, licences, authorizations or other instrument issued under NL or federal legislation. In the case of a conflict between these, the order of priority shall be: 1) permit/approval/licence/authorization or other instrument's terms and conditions, provisions or reservations; followed by 2) conditions, provision or statement outlined in the current version of the EPP.

5.1 Noise Generation

Project activities have the potential to generate noise from the use of heavy equipment and the handling of various construction materials. Noise generation has the potential to cause negative effects on wildlife in the area.

Mitigation Measures:

- Newcrete will adhere to all permits and approvals, and comply with the relevant legislation with respect to noise;
- All equipment will be fitted with standard and well-maintained noise suppression devices;
- All vehicles and generators will have exhaust systems and noise abatement equipment regularly inspected and operating properly;
- All materials handling will be carried out in such a way as to avoid unnecessary generation of noise; and
- Idling of construction vehicles will be kept to a minimum.

5.2 Dust Generation

Dust generation related to construction activities may result in human health effects, as well as negative impacts on freshwater ecosystems and vegetation.

Mitigation Measures:

- Equipment will have the required dust and emission control filters;
- Dust from road and in-pit travel shall be controlled using frequent applications of water. A Water Use License under the *Water Resources Act* will be obtained for water withdrawal.

5.3 Fuel and Hazardous Material Storage and Transfer

A variety of potentially hazardous materials will be used during project activities, e.g. fuel, hydraulics, etc. The primary concern regarding the use and storage of fuel or other hazardous materials is the uncontrolled or accidental release into the environment. Newcrete recognizes the potential for negative impacts as a result of accidental releases to the environment, including adverse effects on terrestrial and aquatic habitat and species, soil, surface and groundwater quality, and human health and safety.

Mitigation Measures: The transportation, use and storage of fuel and other hazardous materials is regulated by The Storage and Handling of Gasoline and Associated Products (GAP) Regulations and Amendments, Transportation of Dangerous Goods Act (1992) and Dangerous Goods Transportation Act (2006).

In addition to those conditions set forth by the above regulations, Newcrete will ensure the following:

- Any soil contaminated by small leaks of fuel, oil or grease from equipment will be cleaned up and disposed of in accordance with the applicable regulations, under the provincial Environmental Protection Act (2006) and Used Oil Control Regulation (82/02). The Used Oil Control Regulation (82/02) will be used as a guideline to the DOEC requirements for such disposal. Guidance is also available through the “Guidance Document for the Management of Impacted Sites”;
- Smoking will be permitted in designated areas only and not within 10 m of fuel or hazardous material storage areas;
- A complete inventory of the hazardous materials on the job site will be maintained according to the Workplace Hazardous Materials Information System (WHMIS) Regulations and will be made available to regulatory agencies upon request or in case of any emergency;
- All sub-contractors will be required to observe strict compliance with the requirements of WHMIS regarding employee training, use, handling, storage, and

disposal of hazardous materials and regarding labeling and provision of Material Safety Data Sheets, as required by WHMIS legislation;

- All persons handling dangerous goods will show proof of certification of training in the transportation of dangerous goods as required under the Transportation of Dangerous Goods Act (1992) and Dangerous Goods Transportation Act (2006). Contractor staff will be trained in the requirements of the Acts;
- Tanks will be located in areas where spills, should they occur, are not likely to flow directly to watercourses, water bodies, ditches or the ocean;
- Oils, grease, gasoline, diesel or other fuels or any material deemed to be hazardous will be stored at least 100 m from any watercourse or the ocean;
- Temporary fueling or servicing of mobile equipment will not be allowed within 100 m of watercourses, water bodies, drainage systems or ecologically sensitive areas. For equipment of limited mobility where the 100 m buffer zone cannot be practically achieved, adequate drip and spill containment will be provided during the refueling operation;
- Fuel and other hazardous materials storage areas and non-portable transfer lines will be clearly marked or barricaded to protect against damage by moving vehicles. The markers will be visible under all weather conditions. Barriers will be constructed in compliance with the provincial Storage and Handling of Gasoline and Associated Product Regulations (58/03);
- All petroleum storage tanks shall be registered with Service NL and all leaks/spills must be reported to the Department. Any spill (greater than 70 L) or leakage of gasoline or associated product shall be reported immediately through the Spill Line at Canadian Coast Guard, as per Section 7.1;
- Storage areas will be equipped with appropriate firefighting equipment;
- Waste oils, lubricants and other used oil shall be retained in a tank or closed container and will be disposed of regularly under contract with a licensed used oil collector in accordance with the Used Oil Control Regulations (82/02);
- Greasy or oily rags or other materials at risk of spontaneous combustion will be deposited and stored in an appropriate receptacle. This material will be removed from the work site on a regular basis and shall be disposed of in an approved existing waste disposal facility. Removal of these materials from the job site is regulated under the Transportation of Dangerous Goods Act;
- All hazardous materials will be handled according to the provincial Environmental Protection Act (2006) and disposed of in accordance with government laws and regulations at an approved off-site hazardous waste disposal facility;
- Regular inspections of hydraulic and fuel systems on machinery will be done, and leaks shall be repaired immediately upon detection. Worn or damaged hoses, seals and fittings will be promptly repaired or replaced.
- Fueling, routine maintenance activities, and lubrication of vehicles and mobile equipment will occur in designated and approved locations. Fueling and

lubrication of equipment will occur in such a manner as to minimize the possibility of contamination to soil or water;

- When fueling equipment, operators will:
 - Be in attendance for the duration of the operation;
 - Use leak-free containers and reinforced rip and puncture-proof hoses and nozzles;
 - Use hoses that have a design pressure rating of at least 150% of the maximum head of the system;
 - Lock out all tank nozzle valves except the valve currently in use;
 - Seal all storage container outlets except the outlet currently in use;
 - Ensure drip pans, and other precautionary measures as required, are in place prior to the start of refueling activities;
- Fuel unloading facilities will be equipped with drip pans to collect hose drainage and drips. Hoses or pipes used for fuel transfer will be equipped with properly functioning and approved check valves, spaced to prevent backflow of fuel in the case of failures;
- All necessary precautions will be implemented to prevent the spillage, misplacement, and loss of fuels and other hazardous materials used during the construction phase;
- A fuel and other hazardous materials spill contingency plan, and appropriate emergency spill equipment, will be in place on site (Section 7.1);
- All spills of fuel and hazardous materials will be reported immediately to the HSE Advisor. Any spill to the marine environment or spills of 70 L or more on land will be reported immediately in accordance with provincial regulation. The Fisheries Act (Section 38(2)) requires reporting without delay, any spill that may enter a waterbody frequented by fish to Canadian Coast Guard: (709) 772-2083 or 1-800-563-9089. In addition, any environmental emergency in respect of a substance listed under the Canadian Environmental Protection Act (CEPA) (Section 201) must be reported to an enforcement officer (Environment and Climate Change Canada) as soon as possible in the circumstances. All such spills will also be reported immediately to the HSE Advisor;
- Small quantities of hazardous material (drums, cans and other containers under 20 L) will be stored in a secure location protected from weather and freezing, as well as vehicle traffic. Where hazardous materials are to be stored outdoors, a designated area will be established and fitted with appropriate secondary containment. If required, a hazardous waste storage area will be constructed in compliance with all applicable federal and provincial legislation;
- Concrete additives and form release agents will be stored in approved containers and transferred and used in a manner that avoids loss of material to the environment;

- Before installing fuel storage tanks, the necessary approvals and permits under The Storage and Handling of Gasoline and Associated Products Regulations (58/03) will be obtained;
- All bulk storage of fuel products and other hazardous materials on site will be stored in aboveground, self-dyked tanks in compliance with The Storage and Handling of Gasoline and Associated Products Regulations (58/03);
- Tanks for fuels and other hazardous materials will be self-dyked or will be positioned over an impervious mat, surrounded by an impervious dyke of sufficient height to contain:
 - Where a dyked area contains only one storage tank, the dyked area will retain not less than 110% of the capacity of the tank; and
 - Where a dyked area contains more than one storage tank, the dyked area will retain not less than 110% of the capacity of the largest tank or 100% of the capacity of the largest tank plus 10% of the aggregate capacity of all the other tanks, whichever is greater.
- All storage facilities will be located away from construction activity, with secondary containment, and inspected on a regular basis in compliance with government laws and regulations; and
- While there is no expectation that hazardous substances used throughout the duration of this project will be in quantities or volumes that will trigger action under the Environmental Emergency Regulations under Section 200 of CEPA, it is important to note that certain substances (eg. propane, gasoline, etc) are listed in Schedule 1 of these Regulations and, therefore, should be consulted prior to bringing these substances to site.

5.4 Disposal of Solid Waste and Sewage

Potential Impact: solid waste (e.g. domestic waste), as well as sewage must be properly disposed of, or risk becoming a hazard to human health and safety. Improperly disposed of waste may also attract wildlife and result in human-wildlife conflicts.

Mitigation Measures:

- All activities associated with the current contract are subject to the Environmental Protection Act, Part IV – Waste Disposal and Litter;
- Waste receptacles shall be installed at all active areas for use by workers. Waste receptacles will be secured to prevent movement under severe weather conditions;
- Upon completion of operations, the site should be left clean and clear of all litter and debris;
- All waste material shall be considered, prior to disposal, for reuse, resale or recycling.
- Waste accumulated on site prior to disposal will be confined so that it does not pose an environmental or health hazard;

- Work areas will be kept clear of debris, waste and litter to reduce the potential for attracting wildlife and reducing potential interactions with wildlife;
- Construction and demolition debris are to be covered to prevent blowing dust and debris;
- No waste material will be deposited in or within 100 m of a watercourse;
- Burning of waste will not be permitted;
- Any vehicles carrying waste offsite will be secured to prevent windblow or other loss of load during transportation;
- Regular inspections of the work site will be undertaken to confirm it is left rubbish free at all times;
- Sewage will be handled by temporary portable toilets or washcars located around the construction site and will comply with all health and safety regulations, the Department of Health guidelines, the Environmental Protection Act (2006), and Environmental Control Water and Sewage Regulations, 2003 (65/03); and
- Sewage waste will be trucked off-site by a licensed waste management firm for treatment and disposal.

5.5 Equipment Use and Maintenance

Potential Impact: environmental concerns associated with the operation and use of construction equipment, including atmospheric emissions, noise, accidental spills and chronic leaks, etc. Emissions, spills and direct physical disturbances as a result of equipment can adversely affect surrounding resources.

Mitigation Measures:

- Equipment delivered to the worksite will be in good operating condition and kept in proper operating condition;
- Equipment will be routinely inspected for leaks and mechanical conditions that have the potential to result in spills of fuel, lubricating oils, or hazardous materials;
- Fueling and routine maintenance operations will be conducted in accordance with appropriate standards and guidelines;
- Equipment maintenance and fueling activities will be performed by a qualified person at a designated site located away from any water body or wetland;
- Equipment use will be limited to approved locations;
- Fuel will not be stored near generators or located adjacent to water bodies and drip pans will be placed under equipment located near water bodies;
- Spill kits will be maintained on site. Each piece of equipment will have a portable spill kit on board. In addition, drum spill kits will be strategically located near working areas; and
- Maintenance and inspections will be documented and records stored on site.

5.6 Pumps and Generators

Potential Impact: accidental spills of fuel or lubricating oil, as well as chronic leaks, may contaminate water bodies or surface soils.

Mitigation Measures:

- Fuel will not be stored near generators or adjacent to water bodies;
- Drip pans will be placed under all generators, light plants, etc;
- Hoses and connections on all equipment will be inspected daily for leaks and drips; and
- All leaks and spills will be reported immediately to the HSE Advisor.

5.7 Erosion Prevention

Potential Impact: Construction activity near shorelines, as well as equipment/vehicle traffic, have the potential to cause surface soil erosion and result in the deposition of fines into the marine/aquatic environment, leading to negative effects on fish and fish habitats.

Mitigation Measures:

- Primary means for controlling erosion will be to avoid activity that contributes to erosion; the disturbance of new areas will be minimized;
- All areas of exposed erodible soil will be stabilized by back-blading, grading and/or compacting to meet engineered slope requirements;
- All work areas will be monitored for erosion and appropriate repair action taken as necessary;
- Siltation control structures (i.e., hay bales and sediment fences) will be constructed prior to beginning any activities involving work near areas of high runoff potential. The necessary and appropriate measures will be determined on site.
- Erosion control structures will be monitored for excessive accumulation of sediment; accumulated sediment will be removed from control structures to ensure the effectiveness of the systems.
- If an environmental inspection reveals that sediment is entering nearby waterbodies, further mitigative measures (eg. temporary drainage ditches, settling ponds, ditch blocks/check dams or sediment dam traps) will be implemented to intercept run-off. The necessary or appropriate measures will be field-determined to ensure appropriateness and effectiveness.
- Inspections and maintenance of erosion and sediment controls will be undertaken on a regular basis and following significant rain events;

- Soil disturbance will be reduced by limiting the area exposed at any one time, stabilizing exposed soil with anti-erosion devices (i.e. rip rap, filter fabrics, gravel or wood chips), and progressive reclamation/re-vegetation of disturbed areas.
- Stormwater will be directed to sedimentation ponds or vegetated areas as appropriate within the project boundaries, which will filter any potential suspended solids;
- Black Mountain West operations will utilize infrastructure already in place at the existing quarry, including industry approved settling ponds for the collection of wash water to allow suspended solids to precipitate out. Wash water will be recycled from these existing settling ponds back into the operations for reuse in aggregate washing and dust suppression. The wash plant and associated infrastructure will remain at its current location.

5.8 Dewatering Work Areas and Site Drainage

The primary concern with site dewatering and drainage is the potential for sedimentation and the potential associated effects on water quality, aquatic ecosystems and sensitive habitats.

Environmental Protection Procedures

- Seasonal surface water accumulation will be managed using standard erosion and sediment control measures, including filter fabric fences and/or hay bales, as required.
- Monitoring site run-off at the quarry will be conducted as per provincial requirements to ensure effluent quality standards

5.9 Buffer Zones

Potential Impact: erosion as a result of construction activities resulting in damage to water quality, fish, and fish habitat.

Mitigation Measures:

- A 100 m buffer zone of undisturbed natural vegetation shall be maintained between excavation areas and all waterbodies, watercourses, and ecologically sensitive areas;
- Maintenance of buffer zones will be verified by the Operations Manager.
- Erosion control measures will be constructed “upstream” of the buffer zone when required to control runoff from areas of exposed soils towards the buffer zone.
- The Operations Manager and the HSE Advisor will inspect silt fences and buffer zones on a regular basis to ensure sediment is not migrating into or through the buffer zone.

5.10 Vehicle and Heavy Equipment Traffic

Potential Impact: proposed construction activities will be supported by vehicles ranging in size from light trucks to heavy equipment, all of which can result in direct physical disturbances that can impact air quality and terrestrial and aquatic environments.

Mitigation Measures:

- Appropriate speed limits and road signage will be established and enforced to minimize environmental disturbance and accidents;
- Equipment and vehicles will yield the right of way to wildlife;
- All project vehicles will be properly inspected and maintained in good working order, including all exhaust systems, mufflers and any other pollution control devices;
- Travel in areas outside designated work areas will not be permitted;
- Dust control will be undertaken in accordance with Section 5.2; and
- Site roads will be maintained as appropriate and monitored for signs of erosion; appropriate action will be taken to repair roads as necessary.

5.11 Clearing of Vegetation

Potential Impact: Vegetation clearing (eg. trees and shrubs) will be required for quarry site development, access road construction, site preparation activities for work areas and lay down areas. Potential environmental concerns include the loss of habitat, as there aren't any watercourses within the proposed lease development. .

Mitigation Measures:

- Clearing activities will be limited to required areas and will comply with applicable permits, including the Cutting Permit from the Department of Natural Resources, Forestry Services Branch, as required;
- Where possible, clearing activities will be completed outside of the nesting, breeding, and brood rearing period (April 15 – August 15). Where vegetation clearing is not avoidable and a nest is found:
 - the nest and neighboring vegetation should be left undisturbed until nesting is completed; and
 - Construction activities will be minimized in the immediate area until nesting is complete.
- Clearing will consist of cutting as close to the ground as possible, with stump heights not exceeding 15cm, and disposing of all standing trees, as well as removing all shrubs, debris and other perishable materials from the area;

- An excavator equipped with a mulcher, chain saws or other hand-held equipment will be used in clearing vegetation except where alternative methods or equipment are approved. The use of mechanical clearing methods, such as bulldozers, will not occur. All chainsaw operators will be equipped with an adequate fire extinguisher during the fire season, as well as shovels and axes;
- Merchantable or usable timber will be removed by a local contractor;
- Slash and any other construction material or debris will not be permitted to enter any watercourse, and will be piled above spring flood levels for later disposal;
- Cleared vegetation will be used to restore habitat where practical;
- Where possible, timber will be felled inward toward the work area to avoid damaging any standing trees; and
- A 100 m buffer zone of undisturbed vegetation will be maintained between operational areas and all water bodies, watercourses, and ecologically sensitive areas. This buffer zone will ensure water bodies and all potential fish habitat are left undisturbed. Maintenance of buffer zones will be verified by the Operations Manager.

5.12 Grubbing and Disposal of Related Debris

Potential Impact: The principal concerns associated with grubbing and disposal of related debris are the potential adverse effects on terrestrial ecosystems and water quality, including destruction of terrestrial habitat and potential for siltation, erosion and run-off.

Mitigation Measures:

- Grubbing of the organic vegetation mat and/or the upper soil horizons will be restricted to the minimum area required;
- The organic vegetation mat and upper soil horizon material that has been grubbed will be spread in a manner so as to cover inactive exposed areas;
- Any surplus of such material will be stored or stockpiled for site rehabilitation and revegetation purposes. The location of the stockpiles will be recorded and accessible for future rehabilitation purposes;
- Measures will be implemented to reduce and control runoff of sediment-laden water during grubbing, and the re-spreading and stockpiling of grubbed materials. Where grubbed materials are re-spread or stockpiled, as many stumps and roots as possible will be left on the ground surface to maintain soil cohesion, dissipate the energy of runoff and promote natural revegetation. Erosion control measures will be implemented in areas prone to soil loss;
- Grubbing activities will adhere to buffer zone requirements; and
- During grubbing, care will be taken to ensure that grubbed material will not be pushed into areas that are to be left undisturbed.

5.13 Linear Developments

Linear developments include a range of construction related activities that are standard operations for most project types. Construction of access roads, ditching, right-of way clearing and grubbing are examples.

Potential Impact: environmental concerns associated with linear developments include potential sedimentation/erosion, the loss of vegetation and fish/wildlife habitat and potential impacts to historic resources.

Mitigation Measures:

- Sedimentation control measures shall be installed as required. Accumulated sediments shall be removed on a regular basis to ensure such systems remain effective;
- Work shall not be undertaken on easily erodible materials during or immediately following heavy rainfalls without protection measures in place;
- Buffer zones shall be flagged prior to any disturbance activities;
- Natural vegetation shall be left in place where possible. Rights-of-way, particularly in areas of dense vegetation, shall be as narrow as practicable; loss of ground vegetation shall be kept to a minimum;
- Roads shall be adequately ditched so as to allow for good drainage. Where possible, ditches shall be kept at the same gradient as the road;
- Drainage from areas of exposed fill shall be controlled by grade or ditching and directed to vegetated areas away from all watercourses and at least 100 m from a waterbody. Surface water shall be directed away from work areas by ditching. Runoff from these areas shall have sediment removed by filtration or other suitable methods;
- In areas where natural vegetation must be removed, the topsoil layer shall be separately stored from grubbed material for rehabilitation;
- Temporary erosion control shall be applied on exposed slopes in sensitive areas immediately following exposure of a slope.

5.14 Surveying

Surveying activity may include the following activities: tree clearing, traversing, and establishing targets, permanent benchmarks, and transponder stations. Surveying activities may disturb vegetation, wildlife, etc.

Environmental Protection Procedures

Vegetation Removal

- Width of survey lines will be limited to that which is absolutely necessary for line of sight and unobstructed passage;
- Whenever possible, cutting lines to the edge of open areas will be avoided;
- Wherever possible, trees and shrubs will be cut flush with the ground; stumps will not exceed 15 cm;
- Cutting of survey lines will be kept to a minimum;
- No attempt to harass or disturb wildlife will be made by any person;
- Vehicles will yield the right-of-way to wildlife;

Traversing

- All-terrain vehicles will not be allowed off the right-of-way;
- Wildlife will not be disturbed or harassed by any personnel;
- Motorized vehicles will not be permitted to enter sensitive areas without notification and approval of the Environmental Manager;
- The extent of activities in sensitive areas will be minimized;

Establishing Targets, Permanent Benchmarks and Transponder Locations

- A driven T-bar will be used to readily identify each benchmark location;
- Wildlife will not be disturbed or harassed by any personnel;
- Access to sensitive areas is to be approved by the HSE Advisor;
- Standard iron bars and sledge hammers are to be used to establish benchmarks;
- Heavy equipment will not be used to access sensitive areas.

5.15 Blasting

Potential Impact: destruction of vegetation, noise disturbances to wildlife, and the potential effects on fish, aquatic animals, and historic resources. Blasting is not an anticipated requirement for this development however, if that requirement changes the following mitigation measures will be implemented.

Mitigation Measures:

- All blasting work will be conducted in compliance with the appropriate permits and/or approvals and authorizations;
- The handling, transportation, storage and use of explosives will be conducted in compliance with all applicable laws, regulations, orders of the Newfoundland and Labrador Department of Government Services (NLDGS) and Newfoundland and Labrador Department of Natural Resources (NLDNR), and the Dangerous Goods Transportation Act (2006);
- All personnel will comply with site-approved safe blasting procedures;

- Blasting activities will be coordinated and scheduled to minimize the number of blasts required. In order to minimize the seismic effect, blasting patterns and procedures will be used to reduce the shock wave and noise;
- Blasting will not occur in the vicinity of fuel storage facilities;
- Use of explosives will be restricted to authorized personnel who have been trained in their use;
- Explosives and auxiliary materials will be stored as stipulated in relevant legislation, in compliance with all permits. Licensed blasters will undertake blasting;
- Explosives will be used in a manner that will minimize damage or defacement of landscape features, trees and other surrounding objects by controlling, through the best methods possible (including time-delay blast cycles), the scatter of blasted material beyond the limits of activity; and
- Where blasting activities will take place near a water body, all blasting activities shall follow the “Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters” (Wright and Hopky, 1999).

Environmental Protection Procedures

- Equipment and vehicles shall only operate on the access road and areas designated for construction activities.
- Erosion control measures shall be implemented as required and monitored during development and operations. Repairs shall be completed as required.

6.0 COMPLIANCE MONITORING

Newcrete will be responsible for environmental compliance monitoring on-site and will instruct staff and contractors on project-associated environmental issues and expectations. Routine inspections and monitoring will ensure implementation of environmental protection measures specified in this document and applicable contracts, permits, approvals and authorizations.

Compliance monitoring will include, but will not be limited to, the condition and stability of the access road used for the existing development, buffer zone maintenance, erosion and sediment control measures, fuel storage facilities, etc, as well as the presence and/or mortality of migratory birds, wildlife, etc.

In addition, an ongoing water quality sampling program will be continued to verify water bodies outside the 100 m buffer zone are not affected by Newcrete activities. Sampling will be conducted at a minimum of twice annually during operational months; analyses will include general chemistry, metals, TSS and TPH/PAH. Sampling locations will include settling ponds and associated discharges. Results will be submitted within 30 days of testing to the Director of the Pollution Prevention Division, Department of Environment, for review.

7.1 CONTINGENCY PLANS

Contingency plans have been developed to address accidents and unplanned incidents. These contingency plans will be modified as required throughout the life of the project.

The following contingency plans have been developed for this project:

- Fuel and Hazardous Materials Spills
- Migratory Bird and Wildlife Encounters
- Forest Fires
- Discovery of a Species At Risk

Newcrete supports preventative measures as the first line of defense against the possibility of accidents.

7.1 *Fuel and Hazardous Material Spills*

Spills or leaks of fuel and other hazardous materials have the potential to be damaging to vegetation, soil, surface water, groundwater, wildlife, marine organisms, historic resources and human health and safety.

Newcrete shall take all necessary precautions to prevent the spill of fuel or other hazardous materials at the site including, but not limited to, the following:

- Implementing the WHMIS program throughout the site in accordance with the Newfoundland Occupational Health and Safety Act and regulations governed by the Workplace Health, Safety and Compensation Commission of Newfoundland;
- Ensuring all employees involved with hazardous materials are appropriately trained; and
- Ensuring fuel storage at the site is undertaken in compliance with applicable provincial and federal regulations, codes and guidelines.

Newcrete will lead and coordinate any field response to environmental incidents related to their activities. It is anticipated that spilled material will be primarily fuel, lube, and hydraulic fluid originating from equipment wear and tear and/or malfunction. Therefore, in the event of a spill, procedures for responding to hydrocarbon spills outlined herein, shall apply:

- Assess the situation (**Safety First**). Personnel shall not approach the spill area without appropriate Personal Protective Equipment;
- Identify priorities while considering the threat to people, property, and the environment;

- Initiate the appropriate response actions:
 - The individual who discovers the leak or spill shall make a reasonable attempt to immediately stop the leakage and contain the flow, where safe to do so;
 - Contact emergency personnel and request additional support if necessary;
 - Reporting: spill location, type of product, estimated volume and terrain condition at the spill site will be determined and reported immediately to Newcrete's HSE Advisor for further reporting to authorities, as appropriate;
 - Initiate the containment and recovery of any free product and/or contaminated material;
- Dispose of all waste material in the appropriate manner;
- Restore the site to the satisfaction of the Project representative or governing regulatory body;
- Document and investigate as required.

For the purposes of this project site, reportable - TO THE HSE ADVISOR - spills include:

- **<2L Spill to Land**
 - Operations Manager to notify HSE Advisor; no spill report is required.
- **>2 and <20L Spill to Land**
 - Operations Manager to notify HSE Advisor.
 - HSE Advisor provides a preliminary incident notification to management.
- **Spill > 20 L on Land or Regulatory Reportable Spills (i.e. >70L to land OR any spill to water OR any spill that could enter a waterbody frequented by fish OR leaks from a fuel or used oil storage tank)**
 - Operations Manager to notify HSE Advisor.
 - HSE Advisor provides a preliminary incident notification to Environmental Manager, followed by a full incident report.
 - Spills meeting the above criteria shall be reported immediately to regulatory authorities via the **Environmental Emergency Report Line at (709) 772-2083 or 1-800-563-9089.**

In reaching decisions on containment and clean-up procedures, the following criteria will be applied:

- Minimize danger to persons;
- Minimize pollution of watercourses;
- Minimize area affected by spill;
- Minimize the degree of disturbance to the area and watercourses during cleanup.

Newcrete will take all necessary precautions to prevent a reoccurrence of the incident and the HSE Advisor shall prepare a written report as required.

All fuel-powered equipment shall contain appropriately-sized spill kits (23 L). In addition, 45 gallon drum spill kits shall be strategically placed throughout the site and moved as required to reflect progress along the access road. The contents of spill kits shall be routinely inspected and supplies replenished as necessary.

7.2 Wildlife Encounters

Wildlife encounters pose a potential risk for stress or injury to both the wildlife and site personnel. To reduce the risk to both wildlife and humans, the following measures will be implemented:

- Hunting, trapping or fishing is not permitted on site;
- Site and working areas will be kept clean of food scraps and garbage;
- Wildlife protected disposal containers will be used and will be regularly emptied and transferred to the local landfill;
- No personal pets, domestic or wild, will be allowed on the site;

In addition to the above protection measures, the following protocol will be followed in the event of a wildlife encounter:

- Workers shall not attempt to chase, catch, divert, follow or otherwise harass wildlife by vehicle or on foot within the project site;
- Equipment and vehicles shall yield the right-of-way to wildlife;
- Wildlife sightings or encounters shall be reported to the HSE Advisor. All actions in response to nuisance animals shall be the responsibility of Newcrete;
- If the nest of any bird is encountered during construction activities, work around the nest will be immediately stopped and the HSE Advisor notified; and
- Any incidents that result in the displacement or killing of wildlife shall be reported to HSE Advisor, complete with details on the incident and the names (and contact information) of the persons involved, for reporting as required.

7.3 Migratory Birds

Migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). Migratory birds protected by the MBCA generally include all seabirds except cormorants and pelicans, all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles).

Under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy or take a nest or egg of a migratory bird or to be in possession of a live migratory

bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the current MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities.

Furthermore, Section 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:

- 5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
- (2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, results in a substance — in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds.

The construction and operation of the project is unlikely to affect Migratory Birds and their habitat, however the following measures will be put into place if required:

- No one shall disturb, move, or destroy migratory bird nests. If a nest or young birds are encountered, work will cease in the immediate area of the nest. Work will not continue in the area until the nest is no longer occupied, otherwise the work plan will be modified to avoid nest sites;
- Buffers will be established around known nests (species-specific, as per last paragraph), however staff and crew shall be made aware of the possibility of undiscovered nests. When one or more of the indicators below are noted, notifications shall be made as appropriate. An active nest can be identified by:
 - the presence of birds or eggs in a nest;
 - adult birds carrying food or nesting materials to a specific location; or
 - adult birds defending territory, through singing, screeching or diving.
- Stockpiles shall be covered where possible, or other deterrents applied, to discourage the nesting of migratory birds in stockpiles left unattended. If migratory birds take up occupancy in stockpiles, industrial activities may cause disturbance to these migratory birds and inadvertently cause the destruction of nests and eggs. Alternate measures will then need to be taken to reduce potential for erosion, and to ensure that nests are protected until chicks have fledged and left the area. Canadian Wildlife Service will be contacted for advice on appropriate measures;
- All precautions shall be taken to prevent fuel leaks from equipment, as described in Section 5.3. Staff and crew are aware that under the MBR, “no person shall

deposit or permit to be deposited oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds”;

- Fueling and servicing of equipment should not take place within 100 meters of environmentally sensitive areas, including wetlands;

7.4 Fire

Activities related to site development have the potential to result in fire, which could spread to the surrounding area.

Environmental Protection Procedures

Newcrete shall take all precautions necessary to prevent fire hazards when working at the site. These include, but are not limited to:

- Proper disposal of all flammable waste on a regular basis.
- Newcrete shall make available, in proper operating condition, sufficient fire fighting equipment to suit its labour force and fire hazards. Such equipment shall comply with and be maintained to the manufacturer's standards. Newcrete shall train its personnel in the use of such equipment as required.
- In the event of a brush fire, staff shall take immediate steps to contain or extinguish the fire.
- Fires shall be reported immediately to the Operations Manager, or other manager as available, who will report the fire as per provincial requirements:

Provincial Forest Fire Communications Centre

Contact Information - Regular Hours

709 637 2328 or 709 637 2653

Fax: 709 637 2403

Contact Information - After Hours

709 637 2328 or 709 632 1154

1-866-709-FIRE(3473)

The following information shall be provided:

- name of the reporter and phone number;
- time of detection of the fire;
- size of the fire; and
- location of the fire.
- The RCMP and closest fire department shall also be notified immediately through the emergency response system (911).

8.0 CONTACT LIST

TITLE	NAME	CONTACT INFORMATION
Newcrete Personnel		
General Manager	Jason Coish	Office: 709 364 5008 Cell: 709 692 4965 jason.coish@newcrete.ca
Operations Manager	Leonard Warfield	Office: 709 365 5008 Cell: 709 687 2263 leonard.warfield@capitalreadymix.ca
Aggregate and Mineral Resources Manger	Roderick Mercer	Office: 709 782 3404 Cell: 709 689 1801 RMercer@newcrete.ca
HSE Advisor	Jackie Jones	Office: : 709 364 5008 Cell: 709 727 8496 jackie.jones@newcrete.ca
Regulators		
NL Department of Environment and Conservation	-	709 729 4211 1 800 563 6181
24 hr Environmental Emergency Line	-	709 772 2083 1 800 563 9089
24 hr Forest Fire Emergency Line	Department of Forest Resources and Agrifoods Fire Patrol	1 800 898 4528
Discovery of Contaminated or Hazardous Material	Government Service Centre	709 729 2550