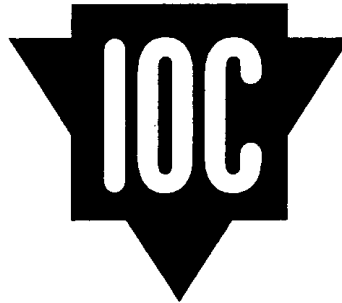




# **Plateau Dolomite Quarry**



# **Environmental Protection Plan**

**Iron Ore Company of Canada  
2 Avalon Drive  
Labrador City, NL  
A2V 2Y6**

**December 6, 2005**



## **ENVIRONMENT, SAFETY AND HEALTH POLICY STATEMENT**

The Iron Ore Company of Canada recognizes the importance of protecting employees, contractors, communities and the environment from detrimental effects that may result from the Company's business activities. Minimizing the risk to all stakeholders will be given top priority in Company plans, procedures, programs and training activities.

To achieve and maintain high environment, safety and health management standards, the Iron Ore Company of Canada and employees will specifically:

- Comply with applicable laws and regulations relating to safety, health and the environment.
- Cooperate with authorities and stakeholders in the development of standards aimed at further improving the protection of its employees, contractors, communities and the environment.
- Work to prevent all injuries, occupational illnesses and harmful environmental emissions by a process of continual improvement involving consultation and cooperation with all employees.
- Implement methods and strategies for preventing pollution, reducing wastes and conserving natural resources.
- Ensure that it has systems in place to identify, control and monitor environment, safety and health (ESH) risks arising from its operations
- Ensure that all company employees and contractors are trained and competent in the use of the ESH management system and that they are aware of their responsibilities.
- Ensure contractors ESH systems comply with our standards and that procedures exist for managing the environment, safety and health performance of contractors.
- Work to foster cooperation and trust through open and proactive communications with employees, contractors, the community and regulating authorities.



## TABLE OF CONTENTS

	<b>Page</b>
<b>1.0 Introduction.....</b>	<b>1</b>
1.1 Purpose of the Environmental Protection Plan .....	1
1.2 Environmental Protection Plan Organization .....	2
1.3 Roles and Responsibilities .....	2
1.4 Environmental Orientation.....	4
1.5 Quarry Location and Plan .....	4
<b>2.0 Project Overview.....</b>	<b>6</b>
2.1 Quarry Development.....	6
2.2 Operations .....	8
2.3 Decommissioning .....	9
<b>3.0 Regulatory Requirements and Commitments.....</b>	<b>11</b>
3.1 Approvals, Authorizations and Permits .....	11
3.2 Compliance Monitoring.....	12
3.3 Reporting.....	15
3.3.1 Internal Communication .....	15
3.3.2 External Communication .....	15
<b>4.0 Environmental Protection Procedures.....</b>	<b>16</b>
4.1 Surveying .....	17
4.2 Marshalling and Storage Areas .....	19
4.3 Clearing Vegetation .....	20
4.4 Grubbing and Disposal of Related Debris .....	22
4.5 Erosion Prevention.....	24
4.6 Buffer Zones .....	26
4.7 Blasting.....	27
4.8 Dewatering Work Areas and Site Drainage.....	29



4.9	Equipment Use and Maintenance .....	30
4.10	Storage, Handling and Transfer of Fuel and Other Hazardous Material .....	31
4.11	Solid Waste Disposal .....	35
4.12	Hazardous Waste Disposal .....	36
4.13	Mineral Waste Rock and Overburden.....	38
4.14	Vehicle Traffic .....	39
4.15	Dust Control.....	40
4.16	Public Traffic and Activity .....	41
<b>5.0</b>	<b>Contingency Plans.....</b>	<b>42</b>
5.1	Fuel and Hazardous Material Spills.....	42
5.2	Wildlife Encounters .....	43
5.3	Forest Fires.....	45
5.4	Discovery of Historic Resources .....	46
<b>6.0</b>	<b>Environmental Protection Plan Control Revisions.....</b>	<b>47</b>
<b>7.0</b>	<b>Contact List .....</b>	<b>48</b>
<b>8.0</b>	<b>Reference Material.....</b>	<b>50</b>



### **LIST OF FIGURES**

Figure 1	Location of Plateau Dolomite Quarry.....	5
Figure 2	Air Photo Showing Outline of Proposed Quarry .....	7

### **LIST OF TABLES**

Table 1	Permits Issued for Activities at the Plateau Dolomite Quarry .....	11
Table 2	Permits and Approvals that May Be Required for Plateau Dolomite Quarry.....	11
Table 3	Compliance Standards .....	12

### **LIST OF APPENDICES**

<b>Appendix A</b>	List of Abbreviations and Acronyms
<b>Appendix B</b>	Controlled Copy Distribution List
<b>Appendix C</b>	Revision Request Form
<b>Appendix D</b>	Revision History Log



## **1.0 INTRODUCTION**

The Iron Ore Company of Canada (IOC<sup>1</sup>) is Canada's leading producer of iron ore. IOC has operated an open pit mine and associated processing facilities at the Carol Project property near Labrador City, Newfoundland and Labrador, since 1962. As part of on-going operations, IOC is developing a new dolomite quarry called the Plateau Dolomite Quarry.

### **1.1 Purpose of the Environmental Protection Plan**

This Environmental Protection Plan (EPP) outlines practical procedures required for all project personnel (i.e., IOC employees, contractors and suppliers) to reduce or eliminate the potential environmental effects associated with the development and operations phases of the Plateau Dolomite Quarry. This EPP also:

- ensures that commitments to reduce environmental effects are met;
- documents environmental concerns and appropriate protection measures;
- provides a reference document for personnel when planning and/or conducting specific activities;
- provides direction for developing contingency plans for accidental events;
- communicates changes in the program through the revision process;
- provides a reference to and instructions for IOC to understand applicable legal and other requirements;
- includes a quick reference for both project personnel and regulators to monitor compliance and recommend improvements; and
- provides direction at the corporate level for ensuring commitments made in policy statements are implemented and monitored.

Any deviation from the procedures and commitments outlined in the EPP must first be discussed with, and approved by, the IOC Environment Department.

In addition to outlining required environmental protection procedures for development of the Plateau Dolomite Quarry, this EPP was a condition of release of the project from assessment requirements under the *Newfoundland Environmental Protection Act*, Section X.

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<sup>1</sup> Refer to Appendix A for a list of all abbreviations and acronyms used in this Environmental Protection Plan.



## **1.2 Environmental Protection Plan Organization**

This EPP is a “Level 2 document” within the comprehensive EPP for the Carol Mining Project and has been developed for specific activities to be conducted in support of development of the Plateau Dolomite Quarry. It provides instructions for addressing both planned and unplanned activities/events associated with the project. This EPP contains the following sections:

- **Section 1.0** provides an introduction to the EPP. It outlines the EPP purpose and organization, roles and responsibilities and environmental orientation.
- **Section 2.0** provides an overview of the undertaking.
- **Section 3.0** lists the permits, approvals and authorizations required for the undertaking, and provides an overview of compliance monitoring.
- **Section 4.0** describes environmental concerns and environmental protection procedures for planned project activities.
- **Section 5.0** outlines the contingency plans for potential unplanned and accidental events.
- **Section 6.0** describes procedures for making revisions to the EPP.
- **Section 7.0** contains a list of key project and regulatory contacts.
- **Section 8.0** lists references cited in the EPP, as well as a number of sources of further information.

## **1.3 Roles and Responsibilities**

The Iron Ore Company of Canada will:

- provide final approval for the EPP and any subsequent revisions;
- monitor and inspect the work being carried out; and
- liaise with relevant government agencies and community interest groups as required.



The designated Manager of Environment will:

- ensure the implementation of the EPP;
- be IOC's representative on-site;
- review revision requests;
- conduct a review of the EPP on an as-needed basis;
- ensure revisions are distributed to EPP holders;
- maintain document control;
- hold an environmental orientation session for the contractor and its personnel, and any other personnel to be involved in the project on an as-needed basis;
- ensure EPP holders and their staff are familiar with the EPP and its procedures;
- ensure that all applicable approvals, authorisations and permits are obtained;
- monitor or designate a representative to monitor project work to ensure compliance with the EPP, and all regulatory requirements and commitments; and
- ensure reporting to all appropriate agencies all incidents of non-compliance.

The contractor and site personnel will:

- familiarize themselves with the EPP;
- implement the EPP commitments;
- ensure all personnel and subcontractors comply with the EPP, all requirements of the contract and with all applicable laws and regulations;
- maintain a training record;
- maintain regular contact with the IOC Environment Department, including, but not limited to:
  - immediately reporting concerns to the IOC Environment Department over any aspect of the EPP, and
  - immediately reporting any spills or other event that may have an effect on human or environmental health and/or safety;
- obtain all applicable approvals, authorizations and permits in co-ordination with the Manager of Environment;
- ensure the implementation of any conditions outlined in approvals, authorizations and permits; and





- carry out clean-up, reclamation or restorative measures as directed by the IOC Environment Department and/or appropriate government agency.

All EPP Holders will:

- keep their copy of the EPP current and ensure all revisions are entered on the revision control record;
- familiarize themselves and their personnel with the EPP and any revisions; and
- initiate changes to improve the quality of the plan.

#### **1.4 Environmental Orientation**

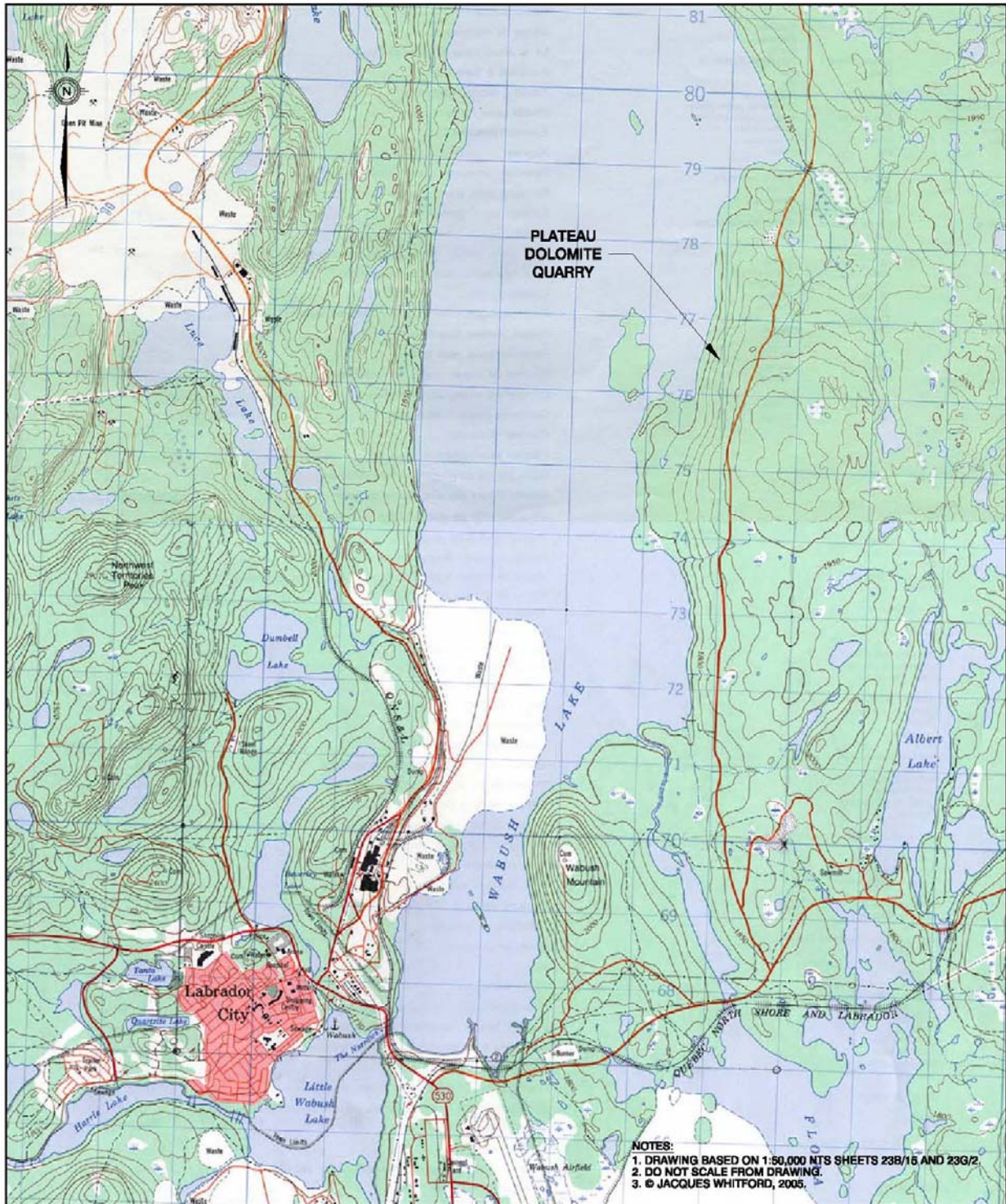
Through orientation and ongoing awareness training throughout the undertaking, IOC will ensure that all project personnel are competent to do their jobs properly. Employees will understand their roles and responsibilities, as well as the potential environmental effects of the overall project and their specific work activities. All workers will receive an orientation prior to the start of any new activity and thereafter on an as-needed basis. All new personnel arriving at the site during the field season will also receive an orientation.

#### **1.5 Quarry Location and Plan**

The location of the Plateau Dolomite Quarry is illustrated on Figure 1.



Figure 1 Location of Plateau Dolomite Quarry





## **2.0 PROJECT OVERVIEW**

A large portion of the iron ore pellets produced at IOC's Carol Project are produced as fluxed pellets by the addition of dolomite. Dolomite neutralizes the natural acid content of the processed iron ore. Dolomite ( $\text{CaMg}(\text{CO}_3)_2$ ) is a form of limestone that is not easily erodible and is not a known contaminant.

The proposed Plateau Dolomite Quarry will be located on land currently under IOC map-staked license (claim). The dolomite will be quarried using standard methods, and will be truck-hauled to the pellet plant via Javelin Road, which is currently used to truck dolomite from the existing Leila Wynne Quarry.

The proposed dolomite quarry is located on the east side of Wabush Lake. An aerial photo of the site is presented in Figure 2. The site is accessible by Javelin Road, which is maintained by contractors during the dolomite haulage season (fall and winter). It is approximately 200 m away from the nearest stream (Javelin Creek).

The primary physical project feature will be the quarry. A new access road is not required. A short access (less than 50 m) will be required to link the quarry to the Javelin Road. The quarry road will be gated for security and safety. Transmission lines are not required. The average depth of overburden is 2.5 m and it tends to be organic in nature.

### **2.1 Quarry Development**

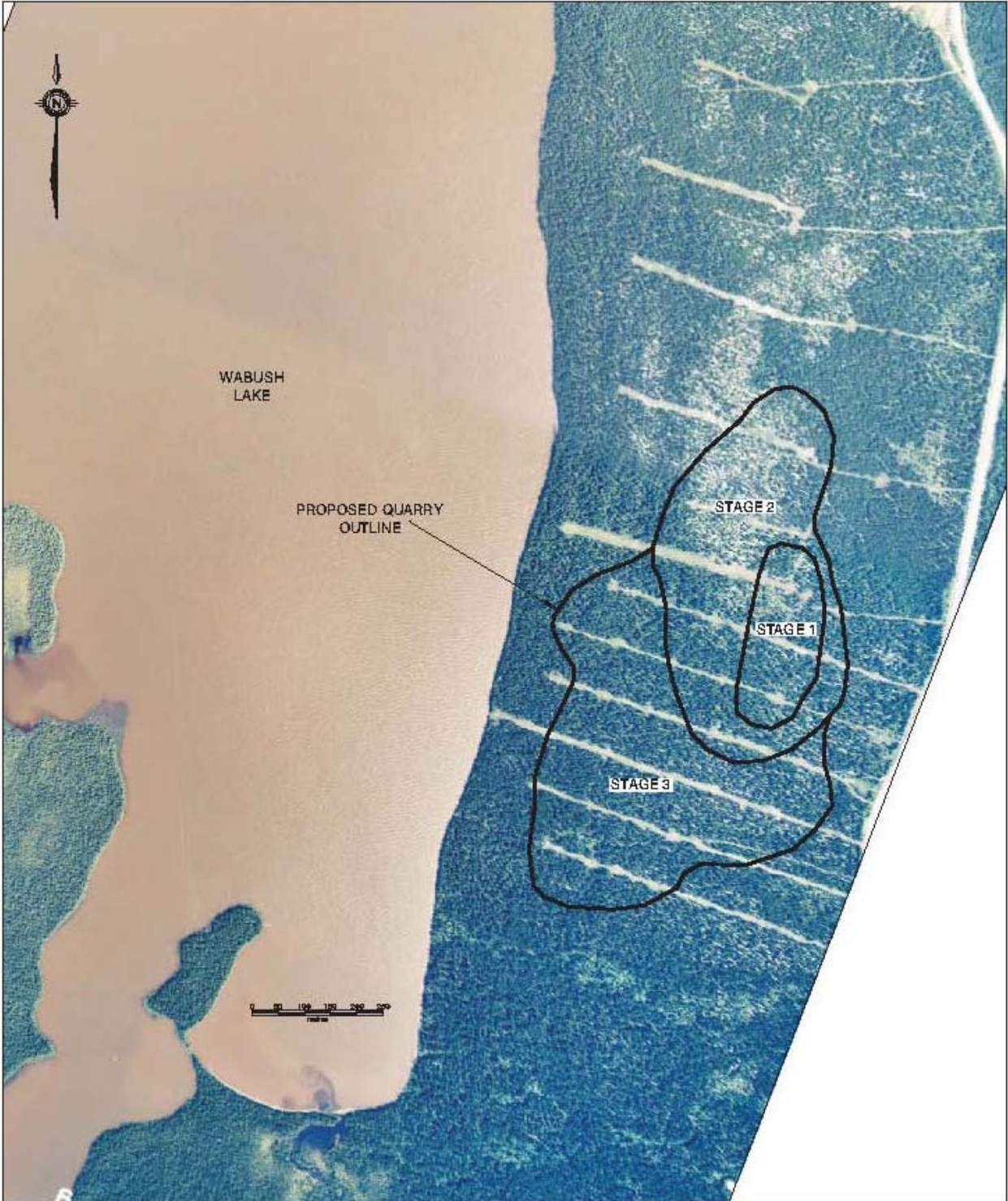
Development of the quarry is scheduled to begin in Q3 2005 and will consist of:

- develop access;
- salvage timber; and
- strip overburden.





**Figure 2 Air Photo Showing Outline of Proposed Quarry**





An existing cut line will be upgraded to provide access to the site from Javelin Road. No culverts or bridges will be required.

Merchantable timber (greater than 10 cm dbh) will be salvaged by local contractors.

Overburden will be removed to uncover the bedrock during the development phase. The overburden thickness varies over the projected extent of the quarry. The starting pit will target an area of minimal overburden cover, to minimize the volume to be removed and stored. The volume of overburden that will be removed will be confirmed once the in-fill drilling program and final detailed designs are completed. Overburden will be stockpiled outside of planned quarry limit in close proximity to waste rock dumps. Overburden and waste rock will be used for future rehabilitation of the quarry site.

## **2.2 Operations**

Typical quarrying methods to extract the dolomite will be used. Operation will include drilling and blasting, loading and hauling from the quarry to the stockyard adjacent to the pellet plant at IOC where the dolomite will be crushed. Waste rock generated during quarrying will be stored adjacent to overburden stockpiles and will be used for future rehabilitation of the quarry site.

The project will require administration and employee facilities (offices, lunch trailer, restrooms) and power facilities. The quarry will use diesel generators for power supply with a diesel fuel storage tank on site. No water is required during quarry operations.

All operating equipment will be supplied by the contractor and will include drills, loaders or excavators, haulage trucks, and de-watering equipment. Primary pit equipment will include a 988 loader, 50-R drill, D9 tractor, portable power generator, and a fleet of 25 tonne trucks. Submersible pumps will also be used as required. Blasting will be required and bulk explosives (ANFO) will be delivered to the blast sites as required from the Orica facility located on the Carol Project site.

The number of trucks to be used during operation will be determined by the contractors based on the requirement of up to 400 Kt per year. Fuel for quarrying equipment will be delivered by a local fuel supplier to a 2200 litre above ground tank at the quarry site.



Dewatering of the quarry, if required, will be through pumping of pit water via a fit-for-purpose sump to ensure fines are not captured in the effluent. Water will then be pumped to a location determined by surrounding topography where it will be released to flow overland to ensure appropriate filtration prior to entering any waterbody. Monitoring of site run-off at the quarry will be conducted as per provincial requirements to ensure effluent quality standards. If monitoring indicates exceedance of regulated water quality standards, IOC will develop new protocols in consultation with the Newfoundland and Labrador Department of Environment and Conservation (NLDEC).

The current volume of stockpiled dolomite (approximately 60 Kt) and its storage location within the IOC loadout facility will remain the same when the new quarry becomes operational.

### **2.3 Decommissioning**

IOC will notify, in writing, the Newfoundland and Labrador Department of Natural Resources (NLDNR) of the intention to complete mining activity at least 30 days prior to the intended completion date. IOC will also notify the Department of the proposed date for completion of rehabilitation of areas affected by quarrying activity. Rehabilitation of the site will follow an approved rehabilitation plan that will be prepared by IOC within three years of commencement of quarry operation. The plan will be developed in consultation with the NLDEC and the Mines Division of the NLDNR.

IOC will implement progressive reclamation where possible; otherwise the overall rehabilitation process will include the following:

- terrain, soil and vegetation disturbances will be limited to that which is absolutely necessary to complete the work within the defined project boundaries;
- where possible, overburden and excavated rock will be stockpiled separately and reserved for later rehabilitation work;
- surface disturbances will be stabilized on an ongoing basis if applicable to limit erosion and promote natural revegetation;
- natural revegetation of surface disturbances will be encouraged and active revegetation will be pursued where this is deemed critical and where terrain and soil conditions permit, and
- IOC will incorporate environmental measures in the contract documents.



Rehabilitation subsequent to quarry closure will involve the following activities:

- dismantling and removal of all surface infrastructure;
- contouring to establish permanent drainage patterns, minimize erosion, and ensure safety of the public;
- replacement (where appropriate) of stockpiled till, peat, or other suitable materials to encourage natural revegetation; and
- revegetation, where natural revegetation does not occur, or if site conditions such as erosion necessitates such an action.

The short access and site road bases will be contoured to blend with the natural terrain and will be scarified to promote natural vegetation.

Till, soil, and excavated wasterock stockpiles will be accessed and distributed over the contoured road and quarry site to provide suitable substrata for natural re-vegetation. Based on an assessment of soil fertility, erosion potential and other site characteristics, and where natural re-vegetation is not expected to occur in a reasonable period of time, or where site conditions indicate a requirement for speedy re-vegetation, an active re-vegetation program will be undertaken. These areas will be scarified, limed (if required), fertilized and planted with a grass seed mix or other vegetation that is appropriate for the site.

The success of erosion control, re-vegetation, and other rehabilitation measures will be inspected periodically subsequent to abandonment.

The waste rock area will be shaped if required to maintain a stable slope and the top will be covered with topsoil. Natural re-vegetation will be promoted and if required, an active re-vegetation program will be implemented as noted above.

The edges of the open pit will be graded to a stable slope if required based on stability analyses. A barrier will be constructed around the circumference of the pit. The open pit will be allowed to flood and will create an open water body after the closure of the quarry.

Closure requirements for the Leila Wynne Dolomite Quarry are captured under its EPP (1989) and Certificate of Approval (1989). By December 31, 2005, IOC will submit to the Department of Natural Resources, under separate cover, any proposed modifications to the commitments made in those two documents.



### 3.0 REGULATORY REQUIREMENTS AND COMMITMENTS

#### 3.1 Approvals, Authorizations and Permits

The approvals, authorizations and permits required for activities associated with the Plateau Dolomite Quarry are listed in Table 1 and those that may be required are listed in Table 2.

**Table 1 Permits Issued for Activities at the Plateau Dolomite Quarry**

Potential Authorization Required	Applicable Legislation	Relevant Activity	Responsible Agency
Exploration Approvals (dated 7 Jan 2005 and 10 Jan 2005)	<i>Quarry Materials Act</i> and Regulations	Exploration Activities	Mines Branch, Department of Natural Resources
Commercial Cutting Permit (dated 26 Jan 2005)	<i>Forestry Act</i> and Cutting of Timber Regulations	Clearing land	Forestry Branch, Department of Natural Resources
Water Use Licence (WUL-05-005 dated 19 Jan 2005)	<i>Water Resources Act</i>	Water withdrawal for use during quarry development	Water Resources Division, Department of Environment and Conservation
Authorization to Proceed to Permitting (EA Release) (received by IOC June 8, 2005)	<i>Environmental Protection Act – Environmental Assessment Regulations</i>	Proceed to permitting	Minister of Environment and Conservation

**Table 2 Permits and Approvals that May Be Required for Plateau Dolomite Quarry**

Potential Authorization Required	Applicable Legislation	Relevant Activity	Responsible Agency
Quarry Permit	<i>Quarry Materials Act</i> and Regulations	Dolomite extraction	Mines Branch, Department of Natural Resources
Mining Lease and Surface Lease	<i>Mineral Act</i>	Dolomite quarry	Mines Branch, Department of Natural Resources
Certificate of Approval for Construction Site Drainage	<i>Water Resources Act</i>	Run-off from site being discharged into receiving waters	Water Resources Division, Department of Environment and Conservation
Certificate of Approval for Storing and Handling Gasoline and Associated Products	<i>Environmental Protection Act</i> and Storage and Handling of Gasoline and Associated Products Regulations	Storing and handling gasoline-associated products	Government Service Centre
Approval for sewage system	<i>Health and Community Services Act (Sanitation Regulations)</i> , or the <i>Environmental Protection Act</i>	On-site sewage system	Government Service Centre
Blasters Safety Certificate		Blasting	Department of Education, Industrial Training Section
Building Approvals	<i>Building Accessibility Act</i> ; <i>Public Safety Act (Electrical Regulations)</i> ;	Designing and constructing buildings on site.	Government Service Centre





### 3.2 Compliance Monitoring

Inspections and monitoring ensure the implementation of the environmental protection measures that are specified in this document and that will be specified in the applicable contracts and other relevant permits, approvals and authorizations. Monitoring will also ensure that all project activities comply with applicable regulatory requirements and that mitigation measures are being employed effectively.

The IOC Environment Department will:

- be responsible for environmental compliance monitoring on-site; and
- instruct the contractor on the environment-related general, special and technical clauses to be implemented as part of the contract(s).

Compliance monitoring will be required for various activities during the undertaking. Monitoring of site run-off at the quarry will be conducted as per provincial requirements. Other federal and provincial government compliance standards that apply to the project include but are not limited to those listed in Table 3. Project personnel will comply with relevant approvals, authorizations, permits and legislation.

**Table 3 Compliance Standards**

<b>Legislation/ Guidelines</b>	<b>Activity Requiring Compliance</b>	<b>Responsible Agency</b>	<b>Comment</b>
<b>Federal Regulations</b>			
<i>Fisheries Act</i> , Section 36(3), Deleterious Substances	Any run-off from the project site being discharged to receiving waters (freshwater or marine).	Environment Canada	Any deposited substance or discharge must not be deleterious (i.e., must be acutely non-lethal). Liquid effluents that enter freshwater or marine waters must comply with the Act.
<i>Migratory Birds Convention Act</i> and Regulations	Mortality of migratory birds, and any species under federal authority.	Canadian Wildlife Service, Environment Canada	CWS should be notified about the mortality of any migratory bird in the project area, including passerine (songbirds), seabird and waterfowl species. Harmful substances (e.g., oil, wastes, etc.) that are harmful to migratory birds must not be deposited into waters that are frequented by them. Nests, eggs, nest shelters, eider duck shelters or duck boxes of migratory birds must not be disturbed or destroyed.



<b>Legislation/ Guidelines</b>	<b>Activity Requiring Compliance</b>	<b>Responsible Agency</b>	<b>Comment</b>
			Notice should also be given about the mortality of any species known to be endangered or under federal authority, including polar bears, wolverine and marine mammals.
<i>Transportation of Dangerous Goods Act and Regulations</i>	Handling and transporting of dangerous goods.	Transport Canada	If the materials are transported and handled fully in compliance with the regulations, a permit is not required. A Permit of Equivalent Level of Safety is required if a variance from the regulations is necessary.
<i>Canadian Environmental Protection Act</i>	Activities that have the potential to interact with the environment and human health	Environment Canada	CEPA provides framework for setting environmental quality objectives, guidelines and codes of practice, pollution prevention plans, regulation of toxic substances, controlling pollution of other wastes and environmental emergency plans
<i>Species at Risk Act</i>	Mortality of endangered species and any species under federal authority.	Environment Canada	Measures must be taken to avoid or lessen adverse effects on species at risk and that effects are monitored. Mitigation measures must be consistent with recovery strategies and action plans for species.
<b>Provincial Regulations</b>			
<i>Mines Act</i>	Development of quarry	Mines Branch, Department of Natural Resources	A Development Plan, and a Rehabilitation and Closure Plan must be submitted to the Department of Natural Resources. Financial Assurance must also be submitted.
<i>Environmental Protection Act, Part IV</i>	Plateau Dolomite Quarry development and operation.	Pollution Prevention Division, Department of Environment and Conservation	All waste material shall be considered, prior to disposal, for reuse, resale or recycling. All waste materials, associated with the development and operation, shall be disposed at an approved waste disposal site.
<i>Environmental Protection Act, Part VI</i>	Plateau Dolomite Quarry, development and operation	Pollution Prevention Division, Department of Environment and Conservation	All activities associated with the project are subject to the <i>Air Pollution Control Regulations</i> . Materials as stipulated in the Regulations can not be burned in the open
	Site drainage during development and operation	Pollution Prevention Division, Department of Environment and Conservation	All waters discharged from the project site must comply with the <i>Environmental Control Water and Sewage Regulations</i> .



**Plateau Dolomite Quarry  
Environmental Protection Plan**

**Version:** 01

**Page:** 14 of 50

**Date Issued:** December 6, 2005

<b>Legislation/ Guidelines</b>	<b>Activity Requiring Compliance</b>	<b>Responsible Agency</b>	<b>Comment</b>
	Storage, handling and disposal of gasoline and other fuels.	Pollution Prevention Division, Department of Environment and Conservation	Petroleum storage and handling is subject to the <i>Storage and Handling of Gasoline and Associated Products Regulations</i> . A spill contingency plan should be developed that includes emergency response contacts/support and access to spill response equipment.
	Disposal of used oil.	Pollution Prevention Division, Department of Environment and Conservation	The storage and disposal of used oil is subject to the <i>Used Oil Control Regulations</i> .
<i>Occupational Health and Safety Act and supporting Regulations</i>	Project personnel.	Occupational Health and Safety Division, Department of Government Services	Work activities must be conducted in accordance with the <i>Occupational Health and Safety Act</i> and its regulations. Outlines minimum requirements for workplace health and safety. Workers have the right to refuse dangerous work and must be informed of potential hazards they may be exposed to during work. All workers must be provided with and use appropriate personal protective equipment. All contractors on the project must be in compliance with the <i>OHS Act</i> and its <i>Regulations</i> .
	Handling and storage of hazardous materials.	Occupational Health and Safety Division, Department of Government Services	Activities involving the use of designated hazardous materials are subject to <i>Workplace Hazardous Materials Information System</i> . WHMIS outlines procedures for handling hazardous materials and provides details on various hazardous materials.
<i>Dangerous Goods Transportation Act and Regulations</i>	Transporting fuel to the site.	Department of Works, Services and Transportation	Transporting goods considered dangerous to public safety must comply with regulations.
<i>Historic Resources Act</i>	General project activities.	Cultural Heritage, Archaeology Section, Department of Tourism, Culture and Recreation	All archaeology sites and artifacts are considered to be the property of the Crown and must not be disturbed. Any archaeology materials encountered must be reported to the Provincial Archaeology Office.



### **3.3 Reporting**

#### **3.3.1 Internal Communication**

Environmental performance and issues at the Plateau Quarry will be communicated internally as required. The contractor's on site manager/supervisor is responsible for communicating IOC policies and procedures and legal and other requirements to project personnel. Project personnel will communicate all environmental incidents to the IOC Environment Department as per the IOC Emergency Call Out & Reporting Procedures.

#### **3.3.2 External Communication**

When required, IOC will report on environmental issues relating to the Plateau Quarry to the NLDEC. Issues which may be communicated include but are not necessarily limited to:

- dust;
- erosion;
- historic resources;
- wildlife encounters; and
- permits and authorizations.

Any spills of petroleum products or other hazardous materials will be reported to the **Environmental Emergencies 24 Hour Report Line** (St. John's: 709-772-2083 or Other Areas: 1-800-563-9089).

Other compliance reporting required by permits or through compliance requirements not listed above will also be submitted to the NLDEC.

All accidents that cause, or had the potential to cause, serious injury or death shall be reported immediately to the Department of Government Services through the 24-hour accident reporting line at (709) 729-4444 as per the IOC Emergency Call-Out and Reporting Procedure.



#### **4.0 ENVIRONMENTAL PROTECTION PROCEDURES**

This Section provides a description of environmental protection procedures for the following anticipated project-related activities:

- 4.1 Surveying
- 4.2 Marshalling and Storage Areas
- 4.3 Clearing Vegetation
- 4.4 Grubbing and Disposal of Related Debris
- 4.5 Erosion Prevention and Siltation Controls
- 4.6 Buffer Zones
- 4.7 Blasting
- 4.8 Dewatering Work Areas and Site Drainage
- 4.9 Equipment Use and Maintenance
- 4.10 Storage, Handling and Transfer of Fuel and Other Hazardous Material
- 4.11 Solid Waste Disposal
- 4.12 Hazardous Waste Disposal
- 4.13 Mineral Waste Rock and Overburden
- 4.14 Vehicle Traffic
- 4.15 Dust Control
- 4.16 Public Traffic and Activity

When required, this EPP will be revised to include new or amended environmental protection procedures to ensure that activities conducted at the Plateau Quarry are completed properly and that the site's significant environmental aspects are well managed.



## **4.1 Surveying**

### **Environmental Concerns**

Surveying activities may disturb wildlife species, vegetation and historic resources.

### **Environmental Protection Procedures**

#### Vegetation Removal

- a) Width of survey lines will be limited to that which is necessary for line of sight and unobstructed passage.
- b) Whenever possible, cutting lines to the boundary between treed and open areas will be avoided.
- c) Trees and shrubs will be cut flush with the ground wherever possible.
- d) Cutting of survey lines will be kept to a minimum. Where possible, alternate areas not requiring cut lines will be used.
- e) All trees not exactly on transit lines shall be left standing.
- f) When surveying the quarry limit, areas that will be cleared require a modified adherence to the above, except trees, shrubs and areas to be saved or left natural as noted on the plans or marked in the field.
- g) No attempt to harass or disturb wildlife will be made by any person (refer to Section 5.2).
- h) Vehicles will yield the right-of-way to wildlife.
- i) Any historic resource discoveries will be reported to the Culture and Heritage Division (see Section 3.2).



### Traversing

- j) All-terrain vehicles (ATVs) will not be allowed off the right-of-way except as approved by the contractor's on site manager/supervisor. The use of ATVs will be restricted to designated trails, thus minimizing ground disturbance. ATV use will comply with the Motorized Snow Mobile and All-Terrain Vehicle Regulations, 1996 under the *Motorized Snow Mobile and All-Terrain Vehicle Act* and the Environmental Guidelines for Stream Crossings by All-Terrain Vehicles issued by the NLDEC.
- k) No attempt to harass or disturb wildlife will be made by any person.
- l) No motorized vehicles will enter the areas designated as sensitive without notification and approval of the Site Manager.

### Establishing Targets, Permanent Benchmarks and Transponder Locations

- m) In normal ground conditions a 15mm x 400mm long rebar is driven approximately 350mm into the surface with an 8-lb sledgehammer. When bedrock or a large boulder is encountered less than 300mm below the ground surface, a 15mm x 150mm long rebar is cemented in a hole drilled in the rock. The rebar will be set into the rock a minimum distance of 80mm.
- n) No attempt to harass or disturb wildlife will be made by any person.
- o) Access to sensitive areas is to be approved by the Site Manager.
- p) Standard iron bars and sledgehammers are to be used to establish benchmarks.
- q) Access by heavy equipment to sensitive areas such as wetlands will only be through established right-of-ways.



## **4.2 Marshalling and Storage Areas**

### **Environmental Concerns**

Areas will be required for storing and maintaining equipment and supplies through the operation phase of Plateau Quarry. Erosion and run-off of sediment into nearby water bodies must be prevented.

### **Environmental Protection Procedures**

- a) Existing marshalling and storage areas will be used outside the Plateau Quarry development area, where feasible.
- b) Any new marshalling, maintenance or storage areas required for the project will only be established within the project property.
- c) Establishing any new marshalling or storage areas will follow the procedures for vegetation clearing (Section 4.3), grubbing and debris disposal (Section 4.4), and erosion prevention (Section 4.5).
- d) External storage areas will be placed on level terrain and kept free of ponding or run-off.
- e) Drainage from areas of exposed fill will be controlled by grade or ditching and directing run-off away from water bodies.
- f) Marshalling and storage areas not required during operations will be rehabilitated.





### **4.3 Clearing Vegetation**

#### **Environmental Concerns**

Vegetation clearing (e.g., trees, shrubs, etc.) will be required in advance of quarrying. Concerns include uncontrolled burning of slash, and stockpiling vegetation in or near watercourses.

#### **Environmental Protection Procedures**

- a) Clearing activities will comply with the requirements of all applicable permits, including the Permit to Burn.
- b) Clearing or removal of trees will be restricted to only those areas designated by IOC.
- c) Clearing will consist of cutting to within 15 cm of the ground and disposing of all standing trees, as well as removing all shrubs, debris and other perishable materials from the area indicated on the engineering/survey drawings. The *Environmental Protection Guidelines for Ecologically Based Forest Resource Management* (DFRA 1998) will be adhered to.
- d) Merchantable or usable timber will be removed by a local contractor.
- e) Disposing of cleared unmerchantable timber, slash and cuttings by burning will comply with the *Forest Fire Regulations*, Environmental Code of Practice for Open Burning, Global Certificate of Approval issued by NLDEC and Permit to Burn. At no time will a fire be left unattended.
- f) Cleared vegetation will be used to restore habitat or chipped on-site as mulch where practical. If a wood chipper is used during operations, a safe work procedure will be put in place prior to operation of the unit.
- g) Slash and any other construction material or debris will not be permitted to enter any watercourse, and will be piled above spring flood levels.



- h) Chain saws or other hand-held equipment will be used in clearing vegetation except where alternative methods or equipment are approved by IOC. The use of mechanical clearing methods, such as bulldozers, will not occur except where it can be demonstrated that there is no merchantable timber, and where the resulting terrain disturbance and erosion will not result in the loss of topsoil or the sedimentation of nearby waterbodies including Wabush Lake.
- i) A minimum 100 m buffer zone of undisturbed vegetation will be maintained between the development area and Wabush Lake (Section 4.6). In areas where the slope is greater than 30%, buffer zone widths will be determined as outlined in Gosse *et al.* (1998). The minimum width of the buffer zone will be calculated by the following formula: Buffer Width (m) = 20 m + 1.5 slope (%). The 100 m buffer will take precedent over a calculated buffer of less than 100 m.
- j) Timber shall be felled inward toward the work area to avoid damaging any standing trees within the immediate work area.
- k) Workers will not destroy or disturb any features indicative of a cultural or archaeological site. Such features should be avoided until a report has been made to the Provincial Archaeology Office and clearance to proceed has been received.
- l) Where feasible, vegetation clearing will be scheduled to avoid disturbance during the critical nesting period, from May to mid-July.
- m) IOC is aware of the value of wetlands and will attempt to avoid such disturbance of wetlands outside of the work areas where feasible.



#### **4.4 Grubbing and Disposal of Related Debris**

##### **Environmental Concerns**

The principle concerns associated with grubbing and disposal of related debris are the potential adverse effects on freshwater ecosystems and water quality through the release of sediment into watercourses, as well as the potential for disturbing historic resources.

##### **Environmental Protection Procedures**

- a) Grubbing of the organic vegetation mat and/or the upper soil horizons will be restricted to the minimum area required.
- b) The organic vegetation mat and upper soil horizon material that has been grubbed will be spread, in a manner to cover inactive exposed areas.
- c) 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.
- d) 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 (Section 4.5).
- e) Where erosion into a water body is a concern, the length of time that inactive grubbed areas will be left exposed to the natural elements will be minimized to prevent unnecessary erosion.
- f) Grubbing activities will adhere to the buffer zone requirements outlined in Section 4.6.
- g) During grubbing, care will be taken to ensure that grubbed material will not be pushed into areas that are to be left undisturbed. Grubbing material will be buried with two feet of soil cover.



- h) Discovery of historic resources will be handled according to the procedures outlined in Section 5.4.
  
- i) IOC is aware of the value of wetlands and will attempt to avoid such disturbance of wetlands outside of the work areas where feasible.



## **4.5 Erosion Prevention**

### **Environmental Concerns**

Eroded material may cause siltation in water bodies and, subsequently, decrease suitable habitat for aquatic and terrestrial animals.

### **Environmental Protection Procedures**

- a) All work in the vicinity of Plateau Quarry will be conducted according to the conditions set out in the permits and/or approvals and authorizations from the NLDEC.
- b) Primary means for controlling erosion is avoiding activity that contributes to erosion. The disturbance of new areas will be minimized.
- c) Drainage ditches along the access road will be stabilized if required (e.g., lining with vegetation or rock, terracing, interceptor swales, installation of rock check dams) to reduce soil erosion. Any such measures will be properly maintained following installation.
- d) All areas of exposed erodible soil will be stabilized by back-blading, grading and/or compacting to meet engineered slope requirements.
- e) If an environmental inspection reveals that silt is entering Wabush Lake or Javelin Creek, further mitigative measures will be implemented, such as temporary drainage ditches, siltation control (settling) ponds, ditch blocks/check dams or sediment dam traps, to intercept run-off. The necessary or appropriate measures will be determined in the field.
- f) All work and marshalling and storage areas will be monitored for erosion and appropriate repair action taken as necessary.
- g) Existing or new siltation control structures used in this work will be monitored by the contractor for excessive accumulation of sediment. The contractor will remove accumulated sediment from control structures to ensure the effectiveness of the systems. Effluent from control structures will be released to flow overland to ensure appropriate filtration prior to entering any waterbody.



- h) The contractor will be required to remove excess water from siltation control systems prior to excavation of sediment. Trucks will be equipped with liners to prevent loss of wet sediment during transport.



## **4.6 Buffer Zones**

### **Environmental Concerns**

Buffer zones are vegetated boundaries maintained along water bodies. Without adequate buffer zone vegetation, streams, ponds and lakes can become laden with silt from run-off. Vegetation also provides cover for fish.

### **Environmental Protection Procedures**

- a) A minimum buffer zone of 100 m of undisturbed natural vegetation is to be maintained between quarry work areas and Wabush Lake (as per DFO Guideline: Gosse et. al. 1998).
- b) In areas where the slope is greater than 30%, buffer zone widths will be determined as outlined in Gosse *et al.* (1998).

The minimum width of the buffer zone will be calculated by the following formula:

$$\text{Buffer Width (m)} = 20 \text{ m} + 1.5 \text{ slope (\%)}$$

unless the 100 m buffer is greater.



## **4.7 Blasting**

### **Environmental Concerns**

The principal environmental concerns associated with blasting on land include: destruction of vegetation outside the quarry limits which may affect domestic forest harvesting; noise disturbances to wildlife and recreational cottage properties; effects to fish and aquatic animals, and the potential introduction of silt and ammonia into the water column.

### **Environmental Protection Procedures**

- a) All blasting will be done in compliance with the appropriate permits and approvals. All blasters will have a Blasters Safety Certificate and all blasting will be conducted in adherence to IOC's safe work procedures and the occupational Health and Safety legislation. All magazines for explosive storage will have the appropriate approvals.
- b) The handling, transportation, storage and use of explosives and all other hazardous materials will be conducted in compliance with all applicable laws, regulations, and orders of the Newfoundland and Labrador Departments of Government Services and NLDNR, and the *Dangerous Goods Transportation Act*.
- c) Blasting pattern and procedures will be used which reduce shock or instantaneous peak noise levels.
- d) Time delay blasting cycles will be used if necessary, to control the scatter of blasted material.
- e) Blasting will not occur in the vicinity of fuel storage facilities.
- f) Use of explosives will be restricted to authorized personnel who have been trained in their use.
- g) If required, there will be separate magazines on site in the mine area, a magazine for explosives and a smaller cap magazine for dynamite blasting caps.





- h) Where necessary, runoff from blasted areas within the quarry will be monitored at discharge sites for pH, TSS, TPH, ammonia and iron, as required by the Pollution Prevention Division. Discharge will be treated, if required, prior to entering a waterbody.
- i) All personnel must comply with the safe blasting procedures established by IOC as described in the Mine Orientation training course.

### **On Land**

- j) The immediate area of the site will be surveyed as per IOC Blasting Clearance procedures. Operations will be curtailed if sensitive animals (e.g. black bears, caribou, moose) are observed within 100 m. Other animal sightings will be reported to the IOC Environment Department.

### **In Close Proximity to Water**

In order to reduce the potential effect of blasting operations on the aquatic environment, blasting within 150 m of a water body will only occur in situations where such operations are deemed necessary and will comply with the following:

- k) Drilling and blasting activities will be done in a manner that ensures that the magnitude of explosions is limited to that which is absolutely necessary.
- l) Three hours prior to any blasting within 150 m of a water body, a visual reconnaissance of the area will be undertaken to ensure that there are no waterfowl or aquatic furbearers present. Blasting will be delayed in such circumstances until they have been allowed to leave the area of their own accord. Under no circumstances will noise or other devices be used to harass or otherwise disturb these animals to encourage them to leave the area of the proposed blast.



#### **4.8 Dewatering Work Areas and Site Drainage**

##### **Environmental Concerns**

The major concern associated with site dewatering and drainage is potential siltation and direct fish mortality and/or habitat destruction for freshwater species.

##### **Environmental Protection Procedures**

- a) Site water will be discharged to vegetated work areas to reduce any potential effects on watercourses.
- b) Discharged water will be encouraged to follow natural surface drainage patterns.
- c) Monitoring of site run-off at the quarry will be conducted as per provincial requirements to ensure effluent quality standards.
- d) If silt is entering Wabush Lake or Javelin Creek, filtration or other suitable measures, such as silt fences and dykes, will be provided to remove silt from, and reduce the turbidity of, water pumped from work areas before discharging.
- e) If monitoring indicates exceedence of regulated water quality standards, IOC will develop additional protocols in consultation with the NLDEC.



## **4.9 Equipment Use and Maintenance**

### **Environmental Concerns**

A variety of vehicles and heavy equipment will be used throughout the quarry site and to transport dolomite from the quarry. Environmental concerns associated with operating and using such equipment include air emissions, accidental spills and chronic leaks that may contaminate on-site water bodies.

### **Environmental Protection Procedure**

- a) Drip pans will be placed underneath pumps and generators.
- b) Hoses and connections on equipment will be inspected routinely for leaks and drips.
- c) Equipment maintenance and fuelling activities will be performed at sites designated by the IOC Environment Department and in compliance with applicable regulations. All heavy equipment will also be maintained and operated as outlined in the Occupational Health and Safety legislation.
- d) Maintenance on the mobile fleet (e.g., haul trucks) will not be performed at the quarry site.
- e) Only minor repairs and maintenance (e.g., lubrication) of 'non-mobile' equipment such as the shovel or drilling equipment will be performed on-site. All major repairs are to be performed at a location outside of the quarry site.
- f) All leaks will be repaired and reported immediately to the IOC Environment Department.
- g) All fuel and other hazardous materials will be handled according to the procedures in Section 4.10.
- h) Vehicles and equipment will be stored at designated areas a minimum of 100 m from Wabush Lake.
- i) In addition to spill kits located at fuel storage tanks additional spill kits will be located at designated central storage location(s). Personnel who deal with fuelling, fuel transfer and pumps and generators will be trained in the use of the kits.



#### **4.10 Storage, Handling and Transfer of Fuel and Other Hazardous Material**

Typical hazardous substances that may be used on site include, but are not necessarily limited to:

- petroleum, oil and lubricants;
- chlorinated and non-chlorinated solvents (*e.g.*, cleaner-degreasers);
- flammable gases (*e.g.*, acetylene);
- waste petroleum products (*e.g.*, used engine oil);
- corrosives (*e.g.*, battery acid); and/or
- glycol (*e.g.*, antifreeze).

#### **Environmental Concerns**

Aside from explosives, the primary concern with using hazardous substances is that there may be an uncontrolled release to the environment through spillage, and subsequent adverse effects on terrestrial and aquatic habitat and species, soil, groundwater quality, and human health and safety.

#### **Environmental Protection Procedures**

- a) The *Workplace Hazardous Materials Information System (WHMIS) Regulations* under the *Occupational Health and Safety Act* will apply to all handling and storage of hazardous materials. All relevant current Material Safety Data Sheets (MSDS) will be readily available for the site.
- b) All necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials. In the event of a spill on-land or in the freshwater environment, the **Environmental Emergencies 24 Hour Report Line** (St. John's: 709-772-2083 or Other Areas: 1-800-563-9089) will be contacted.
- c) A copy of the IOC Contingency Plan (2005) for fuel and hazardous material spills will be readily available.



- d) All fuel storage systems will be registered and comply with the *Storage and Handling of Gasoline and Associated Products Regulations*. Verification of the storage tank approval will be retained for IOC.
- e) Only persons who are qualified and trained in handling these materials as stated in the manufacturer's instructions and government laws and regulations will handle fuel and other hazardous materials.
- f) Operators will be in attendance for the duration of refuelling operations.
- g) Fuel and other hazardous materials will be stored at least 100 m from any surface water.
- h) Handling and fuelling procedures will comply with the *Storage and Handling of Gasoline and Associated Products* and any additional requirements put forth by the NLDEC in order to limit potential contamination of soil or water.
- i) Any above-ground fuel container, with the exception of those exempted under *Storage and Handling of Gasoline and Associated Products*, will be surrounded by an impervious dyke of sufficient height (minimum height 0.6 m) to contain:
  - i) where a dyked area contains only one storage tank the dyked area shall retain not less than 110% of the capacity of the tank.
  - ii) where a dyked area contains more than one storage tank, the dyked area shall 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. Otherwise approved self-dyked storage tanks will be used where required.

All dykes of earthwork construction will have a flat top not less than 0.6 m wide, and be constructed and maintained to be liquid tight to a permeability of 25 L/m<sup>2</sup>/day. The distance between a storage tank shell and the centre line of a dyke will be at least one half the tank height.

- j) Fuel storage areas and non-portable transfer lines will be clearly marked or barricaded to ensure that they are not damaged by moving vehicles. The markers will be visible under all



weather conditions. Barriers will be constructed in compliance with the *Storage and Handling of Gasoline and Associated Product Regulations*.

- k) Waste oils, lubricants, and other used oil will be retained in a tank or closed container, and disposed of in accordance with the *Used Oil Control Regulations*.
- l) Any soil contaminated by small leaks of oil or grease from equipment will be disposed of according to the *Environmental Protection Act*.
- m) All storage tank systems will be inspected on a regular basis by the operator as per Section 18 of the *Storage and Handling of Gasoline and Associated Products Regulations*. This involves, but is not limited to, gauging or dipping, reconciliation of records, and the proper maintenance of reconciliation records for a period of two years.
- n) Contracted fuel suppliers will, before transporting or positioning fuel or oil, have on file at IOC a copy of their fuel and hazardous material spills contingency plan which is required under *Storage and Handling of Gasoline and Associated Products Regulations* and which is acceptable to IOC. The fuel and hazardous material spills contingency plan for IOC is provided in Section 5.1.
- o) Transportation of hazardous and dangerous materials shall be conducted in accordance with provincial, territorial and federal transportation regulations. Transportation documents shall be retained in a retrievable filing system and stored for the duration of the undertaking.
- p) Smoking will be prohibited within 10 m of a fuel storage area.
- q) Fuelling or servicing of mobile equipment will be conducted in designated areas and will not occur within 100 m of any body of water.
- r) Drum storage areas will not be located within 100 m of a water body (i.e., Wabush Lake). Drums containing hydrocarbon or other hazardous materials will be transported, stored, handled and disposed of such that spillage or leakage does not occur. Drums will be tightly sealed against corrosion and rust and surrounded by an impermeable barrier in a dry building with an impermeable floor. The location of drum storage areas must be approved by IOC.



- s) Small quantities of hazardous material (drums, cans and other containers under 20 L volume) will be stored in a secure location protected from weather and freezing, as well as vehicle traffic.
- t) Where hazardous materials are to be stored outdoors, a designated area will be established, graded and fitted with an impermeable membrane covered with local soil and surrounded by an earth berm.
- u) Within thirty (30) days of decommissioning of a storage tank system, the system will be emptied of all products, the tank and associated piping will be removed (including any contaminated soil) and the area will be cleaned and the site restored.
- v) Decommissioning of any temporary storage tank system will be conducted according to the *Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products* (CCME 1994).
- w) If required, a hazardous waste storage area will be constructed in compliance with all applicable federal and provincial legislation.



#### **4.11 Waste Disposal**

##### **Environmental Concerns**

Waste (e.g., domestic and industrial wastes, grey water, paper, cardboard and wood), if not properly controlled and disposed of, will be unsightly and could cause human safety and health concerns. It could also attract wildlife leading to the potential for human-wildlife conflicts.

##### **Environmental Protection Procedures**

- a) All solid waste will be handled according to the provincial *Environmental Protection Act*.
- b) All solid waste materials shall be considered, prior to disposal, for reuse, resale, or recycling.
- c) Solid waste produced by site personnel and operations will be regularly collected and disposed of at the Labrador City municipal disposal facility, with the Town's approval.
- d) Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.
- e) Work areas will be kept clear of waste and litter to reduce the potential for attracting wildlife and reducing potential interactions with wildlife (see procedures in Section 5.2 for handling wildlife encounters).
- f) Any waste that may attract animals (i.e., food) will be stored in covered, wildlife-proof containers.
- g) Burning of waste is not permitted.
- h) All hazardous wastes generated will be handled according to the procedures for handling fuel and hazardous materials (Section 4.10).
- i) Septic waste and grey water will be stored in separate holding tanks and disposed offsite by a contractor, in an approved manner.





#### **4.12 Hazardous Waste Disposal**

##### **Environmental Concerns**

The primary concern with disposing of hazardous substances is that there may be an uncontrolled release to the environment through leakage or accidental spillage, and subsequent adverse effects on terrestrial and aquatic habitat and species, soil, groundwater quality, and human health and safety.

##### **Environmental Protection Procedures**

- a) All hazardous waste will be handled according to the provincial *Environmental Protection Act*. Waste classified as “hazardous” or “special” that can not be disposed of in regular landfill sites will be sent for disposal at a licensed hazardous waste management company.
- b) All necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials. In the event of a spill on-land or in the freshwater environment, refer to the IOC Contingency Plan (2005).
- c) A copy of the IOC Contingency Plan will be present at hazardous material storage sites and fuel transfer locations.
- d) Hazardous waste materials will only be handled by persons who are qualified and trained in handling these materials as stipulated in government laws and regulations.
- e) Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.
- f) Waste material will not be disposed of on-site or in a body of water.
- g) Burning of waste is not permitted.
- h) Where hazardous waste materials are to be stored outdoors, a designated area will be established, graded and fitted with an impermeable membrane covered with local soil and surrounded by an earth berm.



- i) Waste oils, lubricants, and other used oil will be retained in a tank or closed container, and disposed of in accordance with the *Used Oil Control Regulations*.
- j) Any soil contaminated by small leaks of oil or grease from equipment will be disposed of according to the *Environmental Protection Act*.
- k) All hazardous wastes generated, as a result of the treatment alternatives, will be handled according to the procedures for handling fuel and hazardous materials (Section 4.10).



#### **4.13 Mineral Waste Rock and Overburden**

##### **Environmental Concerns**

The principal concern associated with the placement of waste mineral rock and overburden is siltation of the aquatic environment, pertaining to water quality and substrate, as well as loss of habitat and displacement of wildlife.

##### **Environmental Protection Procedures**

- a) Waste rock and overburden storage areas will be located at least 100 m from Wabush Lake and any other water body.
- b) A sampling protocol will be in place to determine acid generating potential of waste rock. Should sampling indicate acid generating potential, a designated storage pad with associated drainage will be constructed.
- c) If required, collection ditches and settling ponds will be used to manage surface runoff and any groundwater flows.
- d) Waste rock and overburden piles will be sloped to prevent pooling of surface water.
- e) Waste rock and overburden storage areas will be secured as appropriate.



#### **4.14 Vehicle Traffic**

##### **Environmental Concerns**

Vehicular traffic can result in fugitive dust, emissions and noise. IOC is committed to the proper operation and maintenance of its vehicles to reduce environmental effects.

##### **Environmental Protection Procedures**

- a) All vehicle and equipment use, including use of all-terrain vehicles (ATVs), will be restricted to designated routes within and between work, marshalling, maintenance and storage areas.
- b) All vehicles and equipment will be properly maintained to meet emission standards.
- c) Travel in areas outside designated work areas will not be permitted.
- d) All vehicles and equipment will yield to wildlife (see procedures in Section 5.2 for handling wildlife encounters).
- e) Chasing and/or harassing wildlife with vehicles and equipment will not be permitted.
- f) Maintaining and refuelling vehicles will be restricted to designated areas (See Section 4.10).
- g) Heavy equipment (e.g., dump trucks and front-end loaders) will only be used in work areas.
- h) Site roads will be monitored for signs of erosion and appropriate action will be taken to repair roads, when necessary.
- i) As required, the contractor will implement dust suppression measures such as watering the roads.



#### **4.15 Dust Control**

##### **Environmental Concern**

The environmental concerns associated with dust include human health effects, effects on recreational cottage properties, and potential effects on aquatic ecosystems and vegetation.

##### **Environmental Protection Procedures**

- a) Dust from operating activities will be controlled using water. In the event of excessive dust, water will be applied to travel and work surfaces.
  
- b) Waste oil will not be used for dust control, but other agents such as calcium chloride may be used with the approval of the appropriate regulatory agencies.



#### **4.16 Public Traffic and Activity**

##### **Environmental (Safety) Concern**

The Plateau Quarry will be located near Javelin Road which is used by the public to access cabins at the northern end of Wabush Lake and to transport boats to the boat dock at Julienne Lake. As well, there are cabins within 3 km of the quarry site and domestic forest harvesting occurs in the general area. Members of the public must be notified during blast days.

##### **Environmental Protection Procedures**

- a) All operating activities will comply with federal and provincial regulations.
- b) Public notice will identify the schedule and nature of activities and to recommend precautions.
- c) Contact numbers will be provided.
- d) Quarry boundaries will be clearly marked.
- e) Dust from operating activities will be controlled using water. In the event of excessive dust, water will be applied to travel and work surfaces.
- f) Blasting pattern and procedures will be used which reduce shock or instantaneous peak noise levels.
- g) Time delay blasting cycles will be used if necessary, to control the scatter of blasted material.
- h) The immediate area of the site will be surveyed within three hours prior to a blast to ensure no members of the public are within the blast area.



## **5.0 CONTINGENCY PLANS**

Contingency plans to address accidents and unplanned situations have been developed, and will be modified as required throughout the project.

Contingency plans have been developed for the following potential accidental and unplanned situations:

- Fuel and Hazardous Material Spills (Section 5.1)
- Wildlife Encounters (Section 5.2)
- Forest Fires (Section 5.3)
- Discovery of Historic Resources (Section 5.4)

Notwithstanding the existence of these contingency plans, a policy to implement preventative measures as the first line of defence against the possibility of accidents will be adopted.

### **5.1 Fuel and Hazardous Material Spills**

#### **Environmental Concerns**

Fuel and hazardous materials can be damaging to vegetation, soil, surface water, ground water, wildlife, aquatic organisms, historic resources and human health and safety.

#### **Environmental Protection Procedures**

In the event of a spill or release of fuel or hazardous materials, refer to the IOC Contingency Plan (2005).

Any spills of petroleum products or other hazardous materials will be reported to the **Environmental Emergencies 24 Hour Report Line** (St. John's: 709-772-2083 or Other Areas: 1-800-563-9089).



## **5.2 Wildlife Encounters**

### **Environmental Concerns**

Wildlife encounters pose a risk for stress or injury to both the wildlife and site personnel. Control measures and environmental protection procedures have been put in place to reduce this risk to wildlife and humans.

As a protection measure, hunting, trapping or fishing by project personnel is not permitted at the quarry site.

### **Environmental Protection Procedures**

#### **Prevention**

The operator is responsible to see that the following procedures are implemented:

- a) Site and working areas will be kept clean of food scraps and garbage.
- b) Waste will be collected for disposal in appropriate containers. Waste will be transferred to the local landfill routinely as needed.

#### **Response Actions**

All project personnel will abide by the following rules in the case of wildlife encounters:

- c) No attempt will be made by any person at the project site to chase, catch, divert, follow or otherwise harass wildlife by vehicle or on foot.
- d) Equipment and vehicles will yield the right-of-way to wildlife.
- e) No personal pets, domestic or wild, will be allowed on the site.





- f) All personnel should be aware of the potential for encounters with bears and instructed to immediately report all sightings to the IOC Environment Department. At their discretion, the IOC Environment Department will notify the Wildlife Division of the NLDEC via the Wabush Forest Resources office.
  
- g) When nuisance animals (e.g. bears) are identified in the project area, the IOC Environment Department will be responsible for all subsequent actions. Responsive actions will also be the responsibility of the IOC Environment Department, who may consult with the NLDEC. All actions must comply with Wildlife Division regulations and permits.
  
- h) Under provincial wildlife regulations, the displacement and release of any animal is the sole jurisdiction of the NLDEC and is to be undertaken only under appropriate supervision.
  
- i) If the nest of any raptor or other bird is encountered during development activity in the vicinity of the nest is to be curtailed until the Wildlife Division is contacted and appropriate mitigation is applied.



### **5.3 Forest Fires**

#### **Environmental Concerns**

Activities related to the project could result in a fire, which could spread to the surrounding area. Such events could be damaging to vegetation and wildlife, air and water quality, as well as human health and safety.

#### **Environmental Protection Procedures**

IOC or the contractor will take all precautions necessary to prevent fire hazards when working at the site. These include but are not limited to:

- a) Disposal of all flammable waste on a regular basis.
- b) IOC or the contractor making available, in proper operating condition, sufficient fire fighting equipment to suit its labour force and fire hazards. Such equipment will comply with, and be maintained to the manufacturer's standards.
- c) IOC or the contractor ensuring that its personnel are trained in the use of such equipment.
- d) In the event of a forest fire, IOC or the contractor will take immediate steps to contain or extinguish the fire.
- e) IOC will appoint a supervisory staff member as On-Scene-Commander for the purpose of fighting any forest fires.
- f) Fires should be reported immediately to the IOC Environment Department, the Wabush Forestry office (709) 282-6881 and ultimately to the Forest Management Unit office in Corner Brook (709) 637-2408. The following information will be provided:
  - i) name of the reporter and phone number;
  - ii) time of detection of the fire;
  - iii) size of the fire; and
  - iv) location of the fire.
- g) The police will also be notified immediately at (709) 944-7602.



## **5.4 Discovery of Historic Resources**

### **Environmental Concerns**

Historic resource material that is disturbed, destroyed or improperly removed from a site represents a cultural loss of information and history that could otherwise be handled and interpreted in an efficient and appropriate manner.

### **Environmental Protection Procedures**

- a) Stop all work in the immediate area of the discovery until authorized personnel from IOC, having consulted with the Provincial Archaeologist, permit resumption of the work.
- b) Report the find immediately to the IOC Environment Department.
- c) Mark the site's visible boundaries. Personnel will not move or remove any artifacts or associated material unless the integrity of the material is threatened.
- d) The IOC Environment Department will report the find with the following information to the Provincial Archaeology Office, Culture and Heritage Division, Department of Tourism, Culture, and Heritage, St. John's, and comply with the instruction provided:
  - i) nature of the find;
  - ii) precise descriptive and map location and the time of the find;
  - iii) nature of the activity resulting in the find;
  - iv) identity of the person(s) making the find;
  - v) present location of the material, if moved, and any protective measures initiated for the material and the site; and,
  - vi) extenuating circumstances.



## **6.0 ENVIRONMENTAL PROTECTION PLAN CONTROL REVISIONS**

Holders of controlled copies (i.e., those version which contain all of the up-to-date procedures) of the EPP are included in Appendix B.

EPPs are revised as necessary to reflect site-specific environmental protection requirements, and allow updates as work progresses. All EPP holders may initiate revisions by forwarding proposed revisions to the IOC Environment Department. The following information will be provided on the Revision Request Form (see Appendix C) for all revision requests:

- section to be revised;
- nature of the revision;
- rationale for the revision (*i.e.*, environment/worker safety); and
- who submitted the revision request.

Approval for revisions will be sought from the Manager, Environment. When the IOC Environment Department receives approval for the revision request, details of the revision will be distributed to all EPP holders and will be documented in the Revision History Log (Appendix D). Each revision will be accompanied by:

- revision instructions;
- list of sections being superseded; and
- an updated Table of Contents indicating the current status of each section in the EPP.

When EPP Holders receive a revision, they will, within two working days:

- read the text of the revision;
- check the control sheet to ensure that all the listed pages have been received;
- remove and destroy the superseded pages from their copy of the EPP;
- insert the revised pages in the proper place in their copy of the EPP;
- page check the EPP, using the updated table of contents to ensure the EPP is complete and current;
- enter the revision number and date entered on the Revision Control Record;
- incorporate the revision into the area of responsibility, as appropriate; and
- ensure that their personnel are familiar with the revisions.



## **7.0 CONTACT LIST**

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## **8.0 REFERENCE MATERIAL**

Canadian Council of Ministers of the Environment. 1994. Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products.

Department of Environment. Water Resources Management Division. Chapter 3A. Environmental Guidelines for Stream Crossings by All-Terrain Vehicles.

Department of Environment and Natural Resources. Environmental Guidelines for Construction and Mineral Exploration Companies.

Department of Fisheries and Oceans. 1994. Factsheets Vol. 1-26, including: Factsheet No. 2 Blasting – Fish and Fish Habitat Protection

DFRA (Department of Forest Resources and Agrifoods). 1998. Environmental Protection Guidelines for Ecologically Based Forest Resource Management (Stand Level Operations).

Gosse, M.M., A.S. Power, D.E. Hyslop, and S.L. Pierce. 1998. Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador. Fisheries and Oceans, St. John's, NL. X + 105 pp., 2 appendices.

IOC (Iron Ore Company of Canada). 2005. Contingency Plan for Fuel or Hazardous Materials Spills.

IOC (Iron Ore Company of Canada). 1998. Environmental Safety and Health Loss Control Program.

Wright, D.G., and G.E. Hopky. 1998. Guidelines for the use of explosives in or near Canadian Fisheries Waters. Can. Tech. Rep. Fish. Aquat. Sci. 2107: iv+34p.



## **APPENDIX A**

### **LIST OF ABBREVIATIONS AND ACRONYMS**





### **LIST OF ABBREVIATIONS AND ACRONYMS**

ATV	-	All-terrain Vehicle
DFO	-	Department of Fisheries and Oceans
EPP	-	Environmental Protection Plan
ESH	-	Environment, Safety and Health
IOC	-	Iron Ore Company of Canada
MSDS	-	Material Safety Data Sheet
NLDEC	-	Newfoundland and Labrador Department of Environment and Conservation
NLDNR	-	Newfoundland and Labrador Department of Natural Resources
WHMIS	-	Workplace Hazardous Materials Information System



## **APPENDIX B**

### **CONTROLLED COPY DISTRIBUTION LIST**





## **APPENDIX C**

### **REVISION REQUEST FORM**

**REVISION REQUEST FORM**

**SECTION TO BE REVISED:**

**NATURE OF REVISION:**

**RATIONALE FOR REVISION:**

(i.e., environment/worker safety, etc.)

**SUBMITTED BY:**

Please submit request to the IOC Environment Department



## **APPENDIX D**

### **REVISION HISTORY LOG**

## REVISION HISTORY LOG

<b>Version</b>	<b>Date Issued</b>	<b>Name of Last Issuer</b>	<b>Revision Notes</b>
01	December 6, 2005	Jody Clark	Final EPP