

GISCOME QUARRY AND LIME PLANT PROJECT

ASSESSMENT REPORT

With respect to:

the Application by Graymont Western Canada Inc.

for an Environmental Assessment Certificate

pursuant to the *Environmental Assessment Act*, S.B.C. 2002, c.43

Prepared by:

Environmental Assessment Office

November 23, 2016



1. Introduction

This report provides an overview of the environmental assessment (EA) for the proposed Giscome Quarry and Lime Plant Project (Giscome Project) conducted by the Environmental Assessment Office (EAO). It summarizes the procedures followed during the EA and the findings of the EA, and cross-references relevant sections of EAO's Giscome Project Technical Report (Technical Report) where more in-depth analysis and discussion can be found.

2. Project Description

Proponent Description

Graymont Western Canada Inc. (Graymont) is a supplier of lime and limestone products based in Richmond, British Columbia (BC). Graymont serves major markets throughout the United States and Canada, and the Asia-Pacific region. Graymont's lime operations are focused on the production of high calcium and dolomitic lime and value-added lime-based products such as hydrated lime and precipitated calcium carbonate as well as pulverized limestone and construction stone.

Project Description and Scope

Graymont has proposed to develop a limestone quarry and lime-processing facility near the Village of Giscome, BC, located approximately 27 kilometres (km) east-northeast of Prince George, BC. The rate of limestone extraction would initially be up to approximately 600,000 tonnes per year, with a future potential limestone extraction rate of up to 1.7 million tonnes per year. The quarry and lime processing plant would be connected by an overland conveyor, which would be used to transport the limestone to the plant site for processing. Graymont is proposing to develop the Giscome Project in phases. The first phase would include quarry development, construction of the overland conveyor and the lime processing plant, likely initially with one lime kiln. Second and third kilns would be constructed when market conditions support the additional volume. The rate of lime production would initially be approximately 200,000 tonnes per year, with a potential annual lime production rate of 600,000 tonnes from three kilns.

Project Components and Location

The proposed lime processing plant is located on private land owned by Graymont, approximately 1 km east-northeast of the Village of Giscome. An existing adjacent Canadian National (CN) rail line would be the main form of access to receive solid fuels, if required, and to ship lime offsite. Road access to the Giscome Project would be along a currently existing road which connects to the south edge of the proposed plant area.

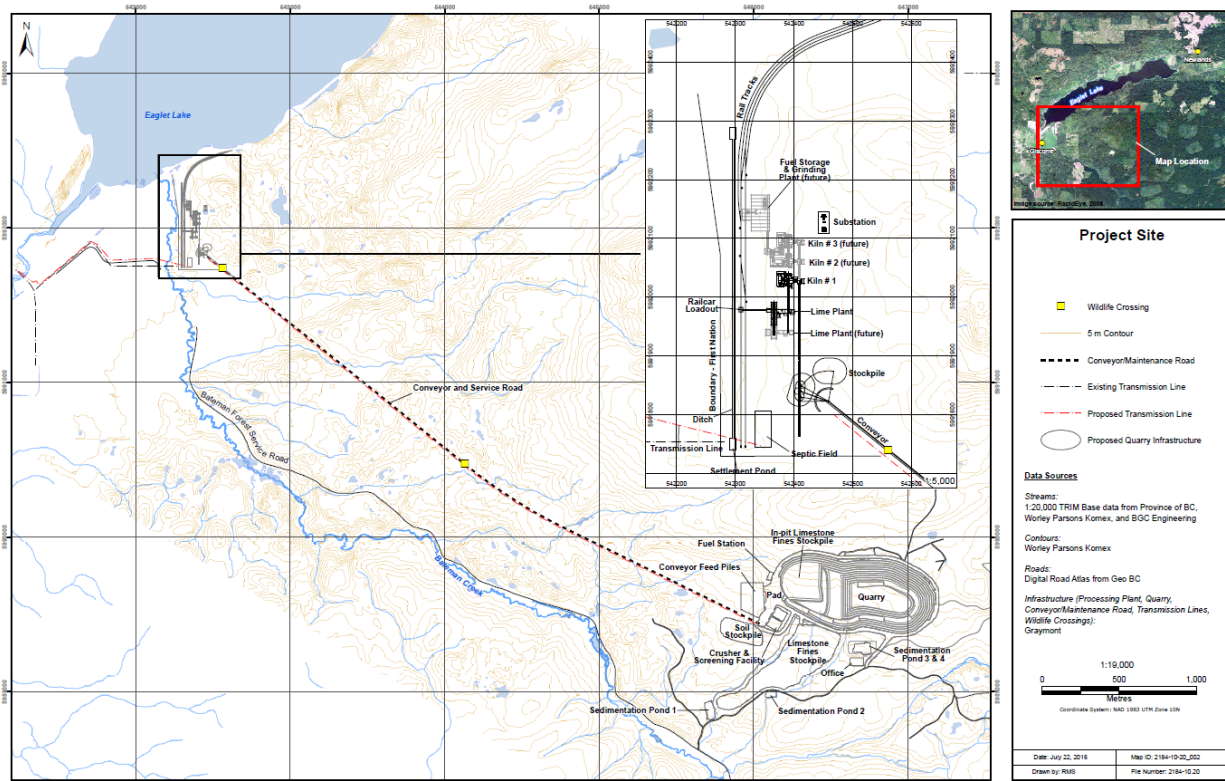
The proposed quarry is located on Crown land, approximately 4 km southeast of the Village of Giscome. Limestone extracted from the quarry would be transported to the processing plant by a 4.3 km long overland conveyor. The proposed limestone quarry

would be accessed by Bateman Creek Road, an existing access road as well as via a new service road which would parallel the proposed overland conveyor.

The quarry pit would eventually cover an area of approximately 40 hectares. The final dimensions of the open pit would be approximately 1,000 metres (m) in the east-west direction and approximately 450 m in the north-south direction; with an overall depth of up to 110 m. Associated quarry infrastructure includes a limestone crusher and screening facility, sediment ponds, limestone and soil stockpiles.

The Giscome Project is located within the asserted traditional territory of the Lheidli T'enneh First Nation (LTFN).

Figure 1 : Map of the Giscome Project area and layout



In the event an Environmental Assessment Certificate (EAC) is issued, and Graymont receives additional necessary permits and approvals, it is anticipated that construction may begin in the spring of 2018. Construction and commissioning would be completed in 2021 and commercial operations commence at that time. It is expected that the Giscome Project would operate for at least 50 years.

3. Environmental Assessment Process

In conducting this EA, EAO considered the potential environmental, social, heritage and health effects, including cumulative effects, of the Giscome Project under the

Environmental Assessment Act (Act). An assessment of the economic effects was not undertaken as it was determined that the potential for adverse effects for this component were low.

EAO conducted the EA in consultation with an advisory working group made up of provincial, local government and LTFN representatives with the mandates and skill sets relevant to the valued components assessed as part of the review of the Giscome Project.

EAO undertook public consultation activities during the course of the EA, including holding two public comment periods (PCP) and one open house during Application Review. All public comments, and Graymont's responses to these comments, were considered and addressed in completing the EA.

On April 12, 2007, EAO determined that the Giscome Project was reviewable pursuant to the Reviewable Projects Regulation (i.e. a production capacity greater than or equal to 250,000 tonnes/year), and issued an Order under Section 10 of the Act. The Giscome Project would not require a federal EA. After the Section 10 Order was issued, Graymont put the Giscome Project on hold due to economic reasons.

On February 27, 2014, EAO issued an Order under Section 11 of the Act, which set out the scope, procedures and methods for the EA.

EAO required Graymont to develop a Valued Components (VCs) Selection Document which was provided for review by the Working Group and LTFN. The VCs, and the information that must be collected, analyzed and presented by Graymont in their Application for an EAC (Application), were identified by Graymont in the draft Application Information Requirements (AIR). A PCP was held on the draft AIR from August 8, 2014, to September 8, 2014. After Graymont responded to the public comments, the Working Group reviewed the draft AIR and on September 22, 2014, EAO issued the final AIR for the Giscome Project.

The Application Review Stage of the EA started on November 23, 2015, following a 30-day evaluation of the Application against the AIR by EAO and the Working Group. The Working Group and public provided additional review and comments on the Application and supplementary material during the Application Review Stage.

EAO completed the review of the Giscome Project and on November 23, 2016, referred the Application for decision to the Minister of Environment and Minister of Energy and Mines.

Other Required Authorizations

If an EAC is issued, the Giscome Project would also require various permits from provincial and local governments and possibly an authorization from Fisheries and Oceans Canada (DFO). The majority of provincial permits would be issued through the

Ministry of Energy and Mines (MEM), the Ministry of Environment (MoE), and the Ministry of Forests, Lands and Natural Resource Operations (FLNRO).

The Giscome Project is currently undergoing a synchronous permitting process through a Mine Review Committee that is managed by MEM.

As there is the potential to destroy and alter fish habitat by displacing 570m² of non-fish bearing aquatic habitat in the Bateman Creek watershed, or the equivalent of 0.5% of instream habitat within the LSA, EAO has proposed Condition 14 to ensure that a fish and fish habitat plan will be prepared in consultation with LTFN, FNLRO, MoE and MEM. Graymont has applied for an authorization from DFO to carry out any proposed work, undertaking, or activity that could cause serious harm to fish, under the subsection 35(2) of the *Fisheries Act*. EAO understands that Graymont will continue to work through the DFO authorization process independent of the conclusion of the EA.

4. Key Conclusions of the Environmental Assessment

EAs in BC use VCs as an organizing framework for the assessment of the potential effects for proposed projects. VCs are components of the natural and human environment that are considered by Graymont, the public, Aboriginal groups, scientists and other technical specialists, and government agencies involved in the EA process to have scientific, ecological, economic, social, cultural, archaeological, historical or other importance. To ensure effective use of resources and appropriately focus on the potential for significant adverse effects, EAO selects VCs that evaluate the project-environment interactions of the greatest importance and consequence.

EAO's Technical Report is organized around the selected VCs:

- Wildlife and Wildlife Habitat (Section 2);
- Aquatic Resources (Section 3);
- Greenhouse Gas Emissions (Section 4);
- Recreation (Section 5.1);
- Visual Aesthetics (Section 5.1);
- Heritage (Section 6.0);
- Air Quality (Section 7.1); and
- Acoustic Environment (Section 7.2).

EAO's Technical Report assesses the impacts of the Giscome Project on all VCs listed above, identifies key mitigation measures for each, and reaches conclusions on their residual effects. To ensure the effects of the Giscome Project are sufficiently mitigated, EAO proposes 25 conditions to be included in the EAC, if issued, along with a Certified Project Description (CPD). Appendix A of this Assessment Report summarizes EAO's conclusions and key proposed conditions for each VC. The remainder of this section provides a summary of the key issues and concerns that were the focus of the EA.

It was determined through the EA process with input from the Working Group, LTFN and the public, that there is a low likelihood that the Giscome Project would have adverse economic impact and as a result there is no discussion in the Technical Report on this EA pillar. It was also determined that there would be minimal effects to the following VC's: Wildlife and Wildlife Habitat; Archaeology; Recreation; Visual Aesthetics; and, Acoustic Environment. As a result, the discussion below is focused on the three significant issues raised during the EA:

- potential effects of the Giscome Project related to Greenhouse Gas Emissions;
- potential effects of the Giscome Project on Air Quality; and
- potential effects of the Giscome Project on Aquatic Resources.

Greenhouse Gas Emissions

EAO assessed the impacts of Greenhouse Gas (GHG) emissions resulting from the Giscome Project. The Giscome Project, if approved, would emit GHGs at all project stages, however, the majority of emissions would occur during the operation of the kilns which requires the combustion of fuels to heat the kilns and produce the marketable lime products from crushed limestone. GHG emissions would also be released by the combustion of fossil fuels in equipment and vehicles.

During the EA, public comments about GHG emissions specified concerns about the choice of coal as the primary fuel for the kilns. The assessment of GHG emissions was based on Graymont using only coal to heat the kilns; however, Graymont is examining two other fuel options – biomass and natural gas – with their preferred option being natural gas. The use of natural gas instead of coal as the fuel source for the kilns would reduce the projects GHG emissions by about 14 percent (%). Please see table below for a summary of fuel source and estimated GHG emissions:

Fuel Source	GHG Emissions (t CO₂ e/year)	% Reduction in Emissions (as compared to 100% coal)
100% Coal	716, 898	0%
100% Natural Gas	615,341	14%
100% Biomass	500,268	30%

Climate Action Secretariat (CAS) was an active participant in the EA and led the development of information requirements and the discussion on the assessment of GHGs. CAS reviewed and agreed with EAO's conclusions on the effects of GHGs on the environment. CAS is also actively involved in the Mine Review Committee permitting process. Graymont would be required to pay BC's Carbon Tax (currently \$30/tonne) for all fuels consumed and report GHG emissions to CAS pursuant to BC's Greenhouse Gas Emission Reporting Regulation thereby providing CAS an ongoing monitoring role for the Giscome Project.

Graymont calculated GHG emissions in the Application using up-to-date Western Climate Initiative methodology. All of the potential GHG emitting activities were modelled and the total GHGs were calculated for the construction and operation phases.

Given the nature of GHGs, which remain in the atmosphere for many years, the Giscome Project would result in a residual effect on the environment. A cumulative effects assessment of the residual effects of GHG emissions was not undertaken because the comparison of GHG emissions to national and provincial targets inherently considers the cumulative impacts of GHGs on the environment.

The GHG assessment conducted for the Application compares the Giscome Project's modelled estimated emissions to the 2012 GHG inventories for BC and Canada. In that context, Giscome Project would result in an increase to the provincial GHG emissions of 1.19% and an increase to the federal GHG emissions of 0.105%.

Every tonne of GHG emissions has the same effect; the exact same contribution to future impacts of climate change. There is no "safe limit", "exposure" or "dispersion" criteria that can be applied to a significance assessment for GHG. EAO has therefore considered how the Giscome Project's contribution to GHGs may impact BC's ability to meet its GHG reduction target after mitigation.

- The national GHG reduction rate to achieve 2030 target is expected to be 2% per year.
- BC's GHG reduction rate necessary to achieve legislated targets is 3% per year.

BC's GHG target is comprehensive, meaning that it applies to the total GHG emissions within the province, and each new tonne of GHG in BC adds to the burden to reduce greenhouse gas emissions elsewhere in BC.

The Giscome Project will be subject to the following mitigation for GHG emissions:

1. Carbon tax will be paid for all fuels consumed (e.g. equipment, vehicles, and operation of lime kilns). The tax is BC's central tool to mitigate GHG emissions from sources such as new industrial facilities. Currently the carbon tax is \$30 a tonne. The federal government recently announced the intent to have a Canada-wide carbon tax escalating to \$50 in 2022 and likely to increase in future years.
2. In order to ensure that Graymont is using the most fuel efficient technology and to ensure that GHGs will not exceed what is contemplated in the Application, the Certified Project Description includes the following requirements:
 - The Giscome Project is defined as producing no more than the maximum predicted GHG emissions in the Application (729,000 tonnes/year). Amendment of the Certificate is required to exceed this amount.

- All kilns will use vertical kiln technology or will be replaced with Best Available Technology that further reduces emissions, as determined by a Qualified Professional;
- Kiln fuel source may be coal, wood, or natural gas or any combination of these fuel sources; and
- Another fuel or energy source may be used if it reduces the concentration of contaminants in the emissions and does not increase greenhouse gas emissions from the kiln compared to estimates in the Application.

During operation of the Giscome Project emissions must be reported annually under the Greenhouse Gas Emission Reporting Regulation of the Greenhouse Gas Industrial Reporting and Control Act. This is not a limit on emissions, but it does mean the facility emissions are covered by legislation and will be tracked and reported annually by regulation.

British Columbia's Climate Action Plan is a provincial policy with the goal of reducing GHG emissions. The Plan outlines emission reduction targets and strategies, and initiatives to achieve the targets. Specific policy measures have been applied to reduce emissions in each economic sector. Provincial GHG mitigation measures include carbon tax, emissions standards on vehicles, regulation of landfill gas emissions, a low-carbon fuel standard, and encouraging green community development. BC has also provided funding for capital investments, offset programs and new technologies that contribute to innovations and incentives in reducing GHGs in industries including mining and transportation. The BC Carbon Tax is expected to induce Graymont to select the lowest emission and most economic fuel mix for the Giscome Project in the future.

Considering the analysis summarized above and discussed in Section 4 (Greenhouse Gas Management) of the Technical Report and having regard to BC's Climate Action Plan, which includes the Carbon Tax that will apply at the start of the Project, and requirements in the CPD, EAO is satisfied that the Giscome Project is unlikely to have significant adverse effects related to GHG emissions.

Air Quality

The EA considered the Giscome Project's impacts to air quality to determine the significance of effects on human health. A change in air quality may result from emissions associated with lime processing, material handling, and transportation in the Regional Study Area (RSA). Several comments were received from the public about the potential impacts of Giscome Project on air quality leading to effects on wildlife, human health and farms in the area. Of particular concern were the potential impacts to school children at the Giscome Elementary School located about one kilometre southwest and down-wind of prevailing winds from the processing plant. The assessment of changes in air quality to human health is discussed in more detail below. The EA also considered possible impacts of air quality on vegetation, and associated indirect effects on wildlife, however, it was determined that the impacts to these VC's would not be significant.

MoE – Air quality Section and Northern Health (NH) were the lead agencies providing advice on impacts on air quality. MoE reviewed detailed air dispersion modelling prepared for the EA and on several occasions requested clarification on the modelling and additional information to assist with their review. NH required Graymont to prepare a Human Health Risk Assessment (HHRA) during application review. The primary objective of the HHRA was to “evaluate risks to general public human receptors as a result of project sourced contamination.” NH reviewed the HHRA assessment and requested clarification and additional information on several issues. Both MoE and NH are participating in the Mine Review Committee that is reviewing Graymont’s applications for permits.

The Air Dispersion model that was prepared by Graymont and reviewed by MoE estimated PM2.5, PM10, total suspended particulates, nitrogen oxides, sulphur oxides, and, mercury that would be generated by the Giscome Project. The modelling data determined that there would be only one possible exceedance of the BC Ambient Air Quality Objectives (BC AAQO). That exceedance was for PM10 which is in the immediate vicinity of the quarry, resulting from dust generated during operation of the quarry. Given the localized nature of the exceedance, and its occurrence on Crown land with no residents nearby, it was determined that the effect would not be significant.

However, although PM10 was the only exceedance of the BC AAQO’s, both MoE and NH were still concerned about the potential for impacts to human health especially in relation to Giscome Elementary School. MoE commented that the school would experience some level of air quality impact due to emissions from the processing plant. NH commented that the long-term impacts to air quality should be considered even if BC AAQO’s are not exceeded. In the end, both agencies agreed that the development of a robust Air Quality Management Plan was imperative to mitigating impacts and monitoring the air quality. They also agreed on the need to include adjacent residents/community members and the school in the development and ongoing implementation of the Air Quality Management Plan (Condition 15).

Considering the analysis summarized above and discussed in Section 7.1 (Air Quality) of the Technical Report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that the Giscome Project would not have significant adverse residual effects on air quality.

Aquatic Resources

The EA considered the Giscome Project’s impacts on Aquatic Resources primarily from the construction, operation and reclamation of the quarry. The assessment of the Aquatic Resources VC included consideration of potential effects to fish and fish habitat groundwater quantity and quality, surface water quantity and quality.

Construction and terrain alterations associated with the quarry may alter surface water and groundwater runoff patterns, timing, and volume. Surface water quality of

surrounding watercourses could be affected by construction and operation activities, including accidental spills or sediment runoff. Additionally there could be increases in ammonia and nitrate from blasting activities and residue which could impact water quality.

During the EA, changes in water quality to Bateman Creek and Eaglet Lake were identified as key issues from environmental and community recreation perspectives. Apart from fish and fish habitat, EAO also considered potential water quality effects to birds and other wildlife inhabiting these water bodies. As identified in the Application, fish populations in Bateman Creek and other tributary streams were considered as indicators of environmental health. Eaglet Lake was identified as being important as a community recreation resource, with some fish and fish habitat value. From a project perspective it was determined that changes to terrain, water quality, and hydrology from the development of the quarry specifically may affect fish habitat in Bateman Creek, with lesser indirect effects to water quality in Eaglet Lake.

Overall, the predicted residual effects from the Giscome Project on aquatic resources include changes to surface water quality, changes to surface water quantity, changes to groundwater quantity, and direct alteration of fish habitat. Mitigation measures and long-term surface and groundwater monitoring programs are proposed to address the residual effects related to aquatic resources. These residual effects would occur in Tributaries 7.2, Todd, Jules and Bateman Creeks; however no cumulative effects have been predicted because no past, existing or reasonably foreseeable projects and activities would interact with the Giscome Project within the same watersheds and groundwater zone of influence.

MEM, MoE – Environmental Quality Section and FLNRO – Landbase Stewardship Section were the lead agencies reviewing impacts on aquatic resources, and LTFN through their consultant also had several comments and concerns. Graymont was asked on several occasions to provide additional information and clarification regarding their assessment of impacts on aquatic resources. Of particular concern were the impacts to two tributaries, in and adjacent to the quarry area, that flow into Todd and Bateman Creeks, and the potential impacts to water quality that may have downstream effects on Eaglet Lake. In response to FNLRO's concerns about the baseline studies, Graymont developed and commenced new baseline monitoring programs during the EA. The agencies were satisfied with the additional monitoring and modelling that was provided and also acknowledged that additional permits and authorizations under the *Environmental Management Act and Mines Act* will be required prior to the Giscome Project proceeding. The agencies and LTFN also provided input into the proposed conditions related to fish and fish habitat, and water management.

Considering the analysis summarized above and discussed in detail in Section 3 (Aquatic Resources) of the Technical Report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that the Giscome Project would not have significant adverse residual effects on Aquatic Resources.

Aboriginal Consultation

EAO examined potential impacts of the Giscome Project on asserted Aboriginal rights and title (Aboriginal Interests). The Giscome Project lies within the asserted territory of the LTFN.

Ethnohistoric, oral historic information and the Application indicate that the LTFN historically used the area near the Giscome Project for many reasons, including, but not limited to, travelling, hunting, fishing, trapping and camping at the time of European contact. This information supports a strong *prima facie* claim of Aboriginal rights for resource harvesting activities in the Giscome Project area. EAO is prepared to assume that there is a moderate-to-strong *prima facie* claim to Aboriginal title to the Giscome Project area. EAO has approached consultation with the LTFN at the deeper end of the Haida consultation spectrum.

As part of the consultation process, EAO provided LTFN with capacity funding to support their participation in the EA. LTFN actively contributed throughout the EA and appointed a technical representative to EAO's advisory Working Group. LTFN provided comment on key EA documents, procedural and timing aspects, and met directly with EAO to discuss issues and concerns.

EAO also assigned procedural aspects of consultation with LTFN to Graymont. Throughout the EA, Graymont consulted with LTFN and shared information through meetings, correspondence, presentations to Chief and Council, newsletters, a website, site tours, and community open houses. Graymont and LTFN signed a consultation protocol agreement in January, 2013, and a Mutual Benefits Agreement in September, 2014. With capacity funding from Graymont, LTFN managed and completed a Traditional Use Study for the Giscome Project area and an archaeological impact assessment. Funding was also provided, by Graymont, at LTFN's request to assess the potential for biomass as a fuel source for the project's kilns. LTFN participated in environmental field data collection for the project, and wildlife and wildlife habitat assessments. EAO-required consultation reports and plans were reviewed and approved by LTFN prior to being submitted to EAO. Under the Mutual Benefits Agreement, LTFN supports the Giscome Project and its related approvals, and Graymont agreed to provide employment, procurement and economic benefits to LTFN. Section 7.4 of the Application provides a summary of Graymont-led consultation during the pre-application phase.

During the PCP held for Application Review, Graymont held an additional open house specifically for the Lheidli T'enneh community. The open house was held on January 9, 2016, at the Ramada Hotel in Prince George, and was attended by about 12 community members. The open house included Giscome Project poster boards, and a question and answer session with the Graymont team.

Some of the key concerns identified over the course of the EA by the LTFN include the following:

- Permanent loss of cultural locations or resources;
- Wildlife monitoring;
- Permanent alteration of project area habitat following decommissioning;
- Reduction in availability of wildlife and fish species;
- Diminished availability of traditionally used plants due to habitat loss;
- Localized and regional pollution resulting in plants being unsuitable as medicine and food;
- Increased wildlife mortality due to road collisions;
- Potential conflicts with road users;
- Impacts of conveyor belt on wildlife;
- Impacts to aquatic resources from increased road traffic/upgrade/construction;
- Increased particulate loading in Eaglet Lake and surrounding watercourses;
- Impacts to fish and fish habitat;
- Impacts to plant growth from fugitive dust emissions; and
- Impacts to human health from fugitive dust emissions.

Issues and concerns identified by LTFN in consultation with Graymont during the Pre-Application Phase of the EA are described in Table 16-1 of the Application.

EAO acknowledges there could be some potential impacts from the Giscome Project on wildlife, vegetation and fish or aquatic resources and values of importance to LTFN.

During the EA, EAO has incorporated and responded to LTFN input on mitigations and conditions related to surface water quality and quantity and fish and fish habitat. Based on EAO's understanding of LTFN historical and current use of the area, and the values that are affected by Giscome Project, EAO does not expect that there would be impacts to LTFN's Aboriginal Interests to gather, hunt and fish. EAO is of the view that the proposed EAC conditions, certified project description and agreements between Graymont and LTFN would adequately address potential adverse effects to LTFN's Interests and concerns. Refer to Appendix A for a summary of the key EA issues including those raised by the LTFN, EAO's conclusions and the proposed certificate conditions by VC.

EAO has ensured that LTFN has been meaningfully consulted and accommodated on the potential effects of Giscome Project. EAO's LTFN Consultation Report provides further analysis related to these conclusions.

Public Consultation

Public consultation requirements are intended to provide multiple, meaningful opportunities for the public to provide input. Graymont was required to prepare a Public Consultation Plan early in the EA that laid out their consultation objectives and activities. Through the course of the EA, Graymont submitted public consultation reports to EAO describing the progress in implementing its Public Consultation Plan.

EAO hosted the following two PCPs and one open house during the EA:

- A 30-day PCP was held by the EAO on the draft AIR from August 8 to September 8, 2014. The draft AIR was available for public review and comment at the Prince George Public Library, the Regional District of Fraser-Fort George Office, the Willow River General Store, and online on the EAO website. Five written submissions were received during the PCP.
- EAO held a 45-day PCP on the Application from December 1 to January 15, 2015. Hard copies of the Application were available at the Prince George Public Library, the Regional District of Fraser-Fort George (RDFFG) Office, the Willow River General Store, and digital copies were available online on the EAO website. EAO held an Open House on December 10, 2015, and approximately 22 people attended.

The primary issues raised by the public during the open house and through the PCPs were concerns regarding wildlife habitat, proximity of the process plant to Eaglet Lake, air quality, traffic, potential impacts to water and fish habitat, potential impacts on recreation and agriculture, and noise. EAO referred these comments to Graymont for response. EAO considered Graymont's responses when it evaluated the Application review stage Public Consultation Report. EAO summarized issues affecting the public in Section 1.3.3 of the Technical Report. EAO determined that the responses were adequately addressed and that the issues raised informed the development of the proposed conditions.

Refer to Appendix A for a summary of the key EA issues including those raised by the Public, EAO's conclusions and the proposed certificate conditions by VC.

Local Government Consultation

The RDFFG was represented on the Working Group and provided technical review comments and participated in Working Group Meetings. The RDFFG provided input into the development of the AIR including comments related to air quality and GHG impacts, assessing potential impacts to recreation, ensuring adequate public consultation and assessing impacts from the overland conveyor on wildlife. RDFFG did not provide comments during the application review stage.

Graymont has also applied for amendments to the RDFFG Official Community Plan (OCP) and Zoning bylaws for the processing plant, and RDFFG held a town hall meeting to receive input from residents on the amendments.

Refer to Appendix A for a summary of the key EA issues, EAO's conclusions and the proposed certificate conditions by VC.

Additional Considerations

Ministers may consider other matters that they consider relevant to the public interest in making their decision on whether to grant an EAC to Graymont.

Caribou

During the development of VCs for the Giscome Project, EAO determined, with input from the WG and in particular FLNRO Ecosystems Branch, that Caribou did not merit being included as a VC because suitable habitat did not exist in large enough quantities in the local study area (LSA) to be sustainable for supporting caribou. The southern mountain population relies heavily upon arboreal lichens found in the alpine and Engelmann spruce-subalpine fir biogeoclimatic zones which do not occur within the LSA.

In October 2016, the federal and BC governments announced a joint study to review the regulations in place for the protection of Southern Mountain Caribou and their habitat. The study will inform a Critical Habitat Protection Assessment conducted by the federal government. Giscome Project is located within the boundaries of the Upper Fraser Local Population Unit (LPU) of the Southern Mountain Caribou identified in the federal recovery strategy.

With the announcement of the joint study, Graymont provided additional information on caribou in relation to Giscome Project. Graymont's assessment is that there is a low likelihood that Giscome Project would impact caribou or their habitat for the following reasons:

- Giscome Project does not overlap with critical caribou habitat identified in the federal recovery strategy.

The recovery strategy generally defines critical habitat for Southern Mountain Caribou as all of the area of high elevation winter and/or summer range within the boundary of each population unit and matrix range surrounding summer and winter ranges. Giscome Project is not located in high elevation range. Matrix range is considered lands that facilitate the movement of caribou between seasonal ranges. Giscome Project is unlikely to be considered matrix range because it is on the periphery of the Upper Fraser LPU and would be unlikely to link areas identified as summer and winter habitats critical for recovery.

- Giscome Project is not close to existing ranges of caribou sub-populations.

A map included with the recovery strategy indicates that Giscome Project is about 50 kms away from the nearest subpopulation range and is not in-between existing subpopulation ranges.

- Existing habitat in Giscome Project area is not high value caribou habitat.

The recovery strategy describes the types of valuable low elevation habitat as old forests of cedar, hemlock and spruce, avalanche chutes, burns. In the southern group, some subpopulations may move down into cedar/hemlock forests in valley bottoms in the spring. The Giscome Project LSA contains limited habitat characterized as old forest (~2%) and lacks contiguous tracts of high suitable habitat. In addition to Giscome Project not being located near clearly identifiable critical habitat, this would suggest that the LSA would have low priority for critical habitat recovery actions.

The Ecosystems Biologist with FLNRO also reviewed this information and Graymont's assessment of the potential impacts of Giscome Project on caribou and agreed with their conclusions. Based on the WG and EAO's initial determination to exclude Caribou as a VC from the EA, and on the October 14, 2016 additional information provided by Graymont, EAO is satisfied that Giscome Project would not have adverse impacts on Caribou and Caribou habitat.

Economic and Community Benefits

Giscome Project would result in increases to regional, provincial, and federal government revenue streams. Graymont estimates that, during construction, revenue to the province would be \$1 to \$2 million, and to the federal government \$3 to \$4 million. During operations, the revenue would be roughly \$400,000 per year to the local government, \$12 million per year to the provincial government, and \$11.5 million per year to the federal government.

Direct employment during construction is estimated by Graymont to be approximately 90 person-years, resulting in approximately \$7.5 million in direct employment income in the area. Graymont estimates that up to 65% of the construction workforce would be hired locally, resulting in approximately \$4.5 million in direct employment income for the RDFFG area. During the operations phase, the workforce would initially consist of at least 10-15 full-time employees and may rise to 20-25 full-time positions. Annual payroll is expected to range from \$1.2 million to roughly \$2.0 million per year. Graymont estimates that during operations, Giscome Project would create 1,000 person-years of direct employment, resulting in over \$80 million in direct employment income.

Community benefits include employment, community development support, and the use of local supplies and services. Employees may choose to live in the area and those with families would provide enrolment to the nearby Giscome Elementary School. In

addition, if natural gas is provided in the area to service the Project, it is hoped that the gas line would run past the community of Willow River, enabling residents the option of connecting to natural gas should they choose.

Potential Benefits to Affected Aboriginal Communities

Giscome Project's benefits of economic development for the community and region are also recognized by the LTFN community. Graymont has stated that they would preferentially hire local businesses including Aboriginal persons and businesses which meet employment and contracting requirements.

Under the Mutual Benefits Agreement that was signed between Graymont and the LTFN, Graymont committed to providing employment, procurement and economic benefits to LTFN.

The Province of BC intends to negotiate an Economic and Community Development Agreement (ECDA) with the LTFN. An ECDA is an agreement between Government and First Nations for sharing the direct mineral tax revenue from a new mine or a major mine expansion.

EAO proposes several conditions which require Graymont to collaborate with LTFN on the development and implementation of a number of management plans that relate to Aboriginal Interests.

Conclusion

Based on:

- Information contained in Graymont's Application and the supplemental information provided during Application Review;
- Graymont's and EAO's efforts at consultation with LTFN, provincial and local government agencies, and the public, and its commitment to ongoing consultation;
- Comments on the Giscome Project made by LTFN, provincial and local government agencies, as members of EAO's Working Group, and Graymont's and EAO's responses to these comments;
- Comments on the Giscome Project received during the PCPs, and Graymont's responses to these comments;
- Issues raised by LTFN regarding potential impacts of the Giscome Project and Graymont's responses and best efforts to address these issues;
- The design of the Giscome Project as specified in the proposed Schedule A (CPD) of the EAC to be implemented by Graymont; and
- Mitigation measures identified as proposed conditions in Schedule B (Table of Conditions) of the EAC to be undertaken by Graymont.

EAO is satisfied that:

- The EA has adequately identified and assessed the potential adverse environmental, economic, social, heritage and health effects of Giscome Project, having regard to the proposed conditions set out in Schedule B (Table of Conditions) to the EAC;
- Consultation with LTFN, provincial and local government agencies, and the public, and the distribution of information about Giscome Project have been adequately carried out by Graymont and that efforts to consult with LTFN would continue on an ongoing basis;
- Issues identified by LTFN, provincial and local government agencies, and the public, which were within the scope of the EA, were adequately and reasonably addressed by Graymont during the review of the Application;
- Considering the proposed conditions for Giscome Project that would be legally-required as part of any EAC as well as the application of any subsequent permitting requirements, the potential adverse environmental, social, economic, heritage or health effects of Giscome Project would be reduced to an acceptable level and would not be significant;
- The potential for adverse effects on LTFN's Aboriginal Interests has been avoided, minimized or otherwise accommodated to an acceptable level; and
- The provincial Crown has fulfilled its obligations for consultation and accommodation to potentially affected First Nations relating to the issuance of an EAC for Giscome Project.

Appendix A: Summary of Giscome Project’s Key Issues and Effects on VCs

VCs (Section of Technical Report)	EAO’s Assessment and Conclusions	EAO’s Key Proposed Conditions
Environmental Effects		
Wildlife and Wildlife Habitat – Section 2	<p>Effects of the Giscome Project on wildlife would mainly result from vegetation clearing, and construction and operation of the overland conveyor.</p> <p>Effects to wildlife may also be caused by sensory disturbance, physical injury or mortality but would be reduced through avoidance and modification of construction activities for nesting/ breeding periods</p> <p>With the mitigation measures incorporated in the CPD and the proposed conditions, EAO is satisfied that the Giscome Project would not have a significant adverse effect on wildlife and wildlife habitat.</p>	<p><u>CPD</u>:</p> <ul style="list-style-type: none"> • Overland conveyer, rather than roads. Includes wildlife passages for large animals. • Mature forest set-aside. <p><u>Condition 12</u>: Graymont must update the Wildlife Management Plan.</p> <p><u>Condition 13</u>: Graymont must hire a Qualified Environmental Professional (QEP) to develop wildlife crossings.</p> <p><u>Condition 18</u>: Graymont must update the plan for Vegetation Management in Appendix 11.1-0.</p>
Aquatic Resources – Section 3	<p>The Giscome Project would result in changes to surface and groundwater quantity and quality, as well as loss of non-fish bearing and fish bearing aquatic habitat.</p> <p>With the mitigation measures incorporated in the proposed conditions, EAO is satisfied that the Giscome Project would not have a significant adverse effect on aquatic resources.</p>	<p><u>Condition 16</u>: Graymont must update the plan for Water Management in Appendix 5.3-6 of the Application.</p> <p><u>Condition 14</u>: Graymont must develop a plan for the protection of Fish and Fish Habitat.</p>

VCs (Section of Technical Report)	EAO's Assessment and Conclusions	EAO's Key Proposed Conditions
GHG Management – Section 4	<p>During operations, the Giscome Project would result in the emissions of GHG's. It's estimated that the Giscome Project would result in an increase to provincial GHG emissions of 1.19% and an increase to the federal GHG emissions of .105% based on 2012 GHG inventory.</p> <p>EAO is satisfied that the Giscome Project would not have a significant adverse effects related to GHG emissions.</p>	<p><u>CPD</u> : The CPD defines the Project as producing no more than the maximum predicted GHG emissions in the Application (729,000 tonnes/year). Amendment of the Certificate is required to exceed this amount.</p> <p>The CPD also allows another fuel or energy source to be used (other than coal, biomass or natural gas), but only if it reduces the concentration of contaminants in the emissions and does not increase greenhouse gas emissions from the kiln compared to estimates in the Application.</p> <p>Monitoring and reporting are required under provincial regulations.</p> <p>Graymont must pay the BC Carbon Tax on all fuels.</p>
Air Quality – Section 7.1	<p>During construction and operations, the Giscome Project would impact air quality in the LSA. One possible exceedance to the BC AAQOs was modelled for PM₁₀ that would occur within the quarry site. In general, air contaminants would increase as a result of the Giscome Project, however, the only exceedance to BC AAQOs was PM₁₀.</p> <p>With mitigation measure incorporated into the proposed conditions EAO is satisfied that the Giscome Project would not</p>	<p><u>Condition 15</u>: Graymont must develop a plan for Air Quality Management.</p>

VCs (Section of Technical Report)	EAO's Assessment and Conclusions	EAO's Key Proposed Conditions
	have a significant adverse effect on air quality.	
Social, Heritage and Health Effects		
Acoustic Environment – Section 7.2	<p>The potential impacts on the acoustic environment would be caused during operations through operation of the kilns (24 hours a day/7 days a week) and quarrying (five days per week, for 40 weeks per year).</p> <p>With the mitigation measures incorporated in the CPD and the proposed conditions, EAO is satisfied that the Giscome Project would not have a significant adverse effect on the acoustic environment.</p>	<p><u>CPD:</u> Based on concerns from the public, Graymont relocated the proposed crushing and screening activities from the plant site to the quarry to reduce potential sources of noise near Eaglet Lake and designed the proposed plant to reduce noise emissions.</p> <p><u>Condition 21:</u> Graymont must implement acoustic mitigation measures for Noise Management.</p>

VCs (Section of Technical Report)	EAO's Assessment and Conclusions	EAO's Key Proposed Conditions
Archaeology – Section 6	<p>The Giscome Project site contains one archaeological site (GaRo-2). 14 areas of moderate to high archaeological potential have also been identified within the Giscome Project footprint.</p> <p>Graymont would be required to construct a physical barrier around the archaeological site and develop/update the Heritage Management Plan.</p> <p>With the mitigation measures incorporated in the CPD and the proposed conditions, EAO is satisfied that the Giscome Project would not have significant adverse effects on Archaeological resources.</p>	<p><u>Condition 17</u>: Graymont must construct a physical barrier around the archaeological site, and must develop a Heritage Management Plan.</p>
Social Components – Section 5 (Recreation – Access to Farside Bluff)	<p>Local climbers currently access a climbing site just west of the processing plant using the CN rail tracks and through Graymont's property. Graymont has agreed to work with the local outdoor club to determine a safe route through Giscome property.</p>	<p><u>Condition 11</u>: Graymont would work with the local climbing club to determine safe access through Giscome property.</p>

VCs (Section of Technical Report)	EAO's Assessment and Conclusions	EAO's Key Proposed Conditions
<p>Social Components – Section 5 (Guide Outfitter/Trapline Tenure Holder)</p>	<p>The Giscome Project is located within trapping tenure (TR0707T005). Graymont has contacted the tenure holders and would work with tenure holders to mitigate/compensate for changes in access and effects on harvesting potential</p> <p>With the mitigation measures incorporated in the proposed conditions, EAO is satisfied that the Giscome Project would not have significant adverse effects on recreation.</p>	<p><u>Condition 23</u>: Graymont would consult with guide outfitters and trappers prior to construction and would meet with individual guide outfitters, upon request, to discuss impact and arrange suitable compensation for demonstrable affects to business.</p>
<p>Social Components – Section 5 (Visual Aesthetics)</p>	<p>The lime plant is expected to adversely affect visual aesthetics due to the size and height of the kilns stacks, lighting of the plant, and visible rock piles adjacent to the lime plant. There would be no visible emissions from the stacks.</p> <p>With the mitigation measures incorporated in the proposed conditions, EAO is satisfied that the Giscome Project would not have a significant adverse effect on the visual Aesthetics.</p>	<p><u>Condition 20</u>: Graymont must implement visual mitigation measures including: screening berms, vegetation, neutral paint colours, and downward oriented lights (to reduce light spill). Graymont must also engage with the community each year to receive feedback and track resolution of issues.</p>