



BOARD DECISION NR 2010-01
NRCB Application No. 0601

Hammerstone Corporation
Hammerstone Quarry Project in the
Fort McMurray area

June 2010

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SECTION 1: INTRODUCTION

1.1: Application to the NRCB

The *Natural Resources Conservation Board Act (NRCBA)* requires a review of a project to construct a mine or quarry to recover any metallic or industrial mineral as defined in the *Mines and Minerals Act*, for which an environmental impact assessment (EIA) report has been ordered. Birch Mountain Resources Ltd. was required to prepare an EIA under the mandatory EIA provisions (both the quarry and quicklime plant are mandatory activities) established by the Alberta *Environmental Protection and Enhancement Act*. On the recommendation of the Minister of Environment, the Lieutenant Governor in Council prescribed (O.C. 171/2005) the quicklime plant proposed by Birch Mountain Resources Ltd. as a reviewable project within the meaning of the *NRCBA*.

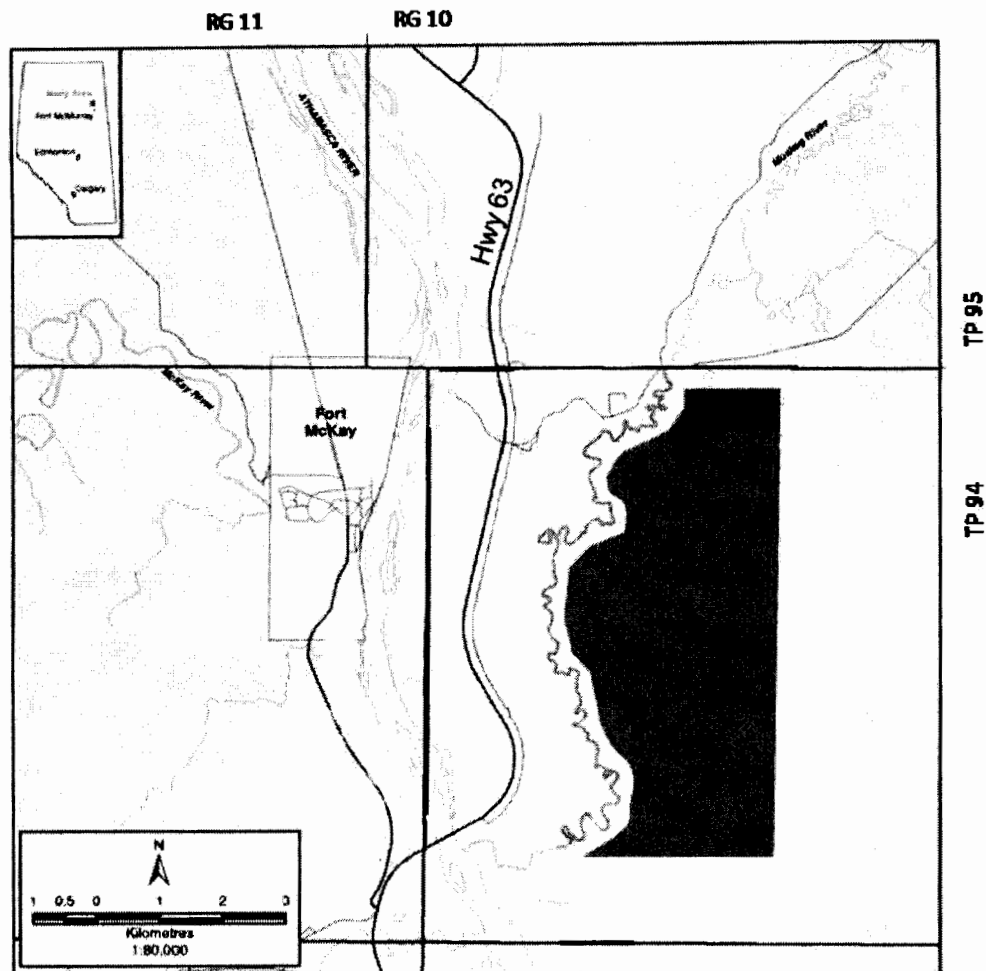
Birch Mountain Resources Ltd. filed an application with the Natural Resources Conservation Board (NRCB or Board) on May 24, 2006, for approval to construct the Hammerstone project (the Project) consisting of an integrated:

- limestone quarry;
- aggregate, reagent limestone, quicklime and cement production facilities;
- spent lime reprocessing; and,
- flue gas desulphurization (FGD) solids incorporation in the reclamation scheme.

The Hammerstone project is located approximately 60 km north of Fort McMurray and 6 km east of Fort McKay, Alberta (see Figure 1). On April 3, 2009 the Board was advised that Hammerstone Corporation (Hammerstone or the Applicant) had acquired the assets of Birch Mountain Resources Ltd. and would be proceeding with the application for the Hammerstone project.

The *NRCBA* enables an impartial public process to review projects that will or may affect the natural resources of Alberta. After having regard for the social and economic effects of a project and the effect of a project on the environment, the Board must determine whether, in its opinion, the project is in the public interest. A reviewable project cannot commence unless the NRCB has granted an approval. Section 9 of the *NRCBA* provides that the Board may grant an approval containing any terms and conditions that it considers appropriate. The rationale for any terms or conditions is to be set out clearly in the Board's decision. A review under the *NRCBA* differs from many statutory regulatory schemes in that the Board does not have an ongoing role in the regulation of the project or industry. As a result, the ongoing review and enforcement of conditions included in an *NRCBA* approval is normally delegated to a provincial department that has an ongoing regulatory function. The Board is careful to identify the appropriate delegate, most commonly Alberta Environment, to oversee the successful implementation of those conditions.

The NRCB established a division of the Board (the Panel) consisting of Vern Hartwell (Chair), Jim Turner and Donna Tingley to consider the application.

Figure 1: Project Location**Legend**

- Hammerstone Project
- Muskeg Valley Quarry Project

1.2: Project Description and Scope of Review

The Board has reviewed the application to conduct mining and limestone processing activities on the associated Metallic and Industrial Mineral Leases and is satisfied that the application materials provide sufficient information to assess the environmental, social and economic effects from the described activities. The Hammerstone project is located immediately adjacent to the existing Muskeg Valley Quarry (MVQ) that is also owned and operated by Hammerstone Corporation. The NRCB issued Approval NR-2005-1 for the Muskeg Valley Quarry in July 2005.

The Hammerstone Project will extend Hammerstone's currently operating Muskeg Valley Quarry in the Regional Municipality of Wood Buffalo. Hammerstone proposes to operate the Project and the MVQ as a single integrated quarry and aggregate production operation. The combined quarry operation will disturb 1,265 hectares, of which 1,010 hectares is attributed to the Hammerstone Project. Quarry operations are anticipated to average limestone product sales of 7,444,112 tonnes/year in the first 5 years of integrated operation, escalating to 24,415,028 tonnes/year of average sales over the final 10 years of operation. Mining operations are expected to conclude in 2060.

The limestone processing facilities applied for as part of this application will be located within the footprint of the MVQ. Limestone processing facilities included in the application will produce aggregate, reagent limestone, quicklime and cement. Limestone aggregate is primarily used in road construction and maintenance. Reagent limestone is used by oilsands operations in the desulphurization of flue gas. Quicklime kilns will produce quicklime, milk of lime and hydrated lime. Quicklime is used in emission control systems to remove sulphur dioxide and sulphur trioxide in bitumen upgrader plants and in the water purification systems of many municipal and industrial facilities. Hydrated lime is required in the production of boiler feed water at the *in situ* oil sands projects. Cement production at the site will provide a local source for cement that will compete with the current cement production sites in Alberta located in Edmonton and Exshaw.

Hammerstone will also construct a recalcining system to process the by-product spent lime created from oil sands operations in the region. Hammerstone stated that this process *"represents an innovative means of reducing the amount of material being sent to sum ps and landfills in the region."*

The list of components and construction schedule for the limestone processing facilities as provided by Hammerstone in October 2009 is shown in the following table:

Table 1: Components and Construction Schedule for the Limestone Processing Facilities (Hammerstone Project Update, October 2009)

Component	Capacity (tonnes/day)	Products	Schedule		Cost (million)
			Construction	Commercial Operation	
Activation-1	2400	Activated limestone	2016	2017	\$101
Quicklime-1*	600	Activated limestone and Quicklime	2014	2014	\$116
Quicklime-2	600	Quicklime	2014	2015	\$101
Quicklime-3	1,800	Quicklime	2018	2019	\$148
PFC-1	240	Quicklime and recalcined	2011	2012	\$33
PFC-2	360	Quicklime and recalcined	2012	2013	\$41
Cement-1**	1,500	Cement	2020	2020	\$197
Total					\$737
* Quicklime-1 may be operated in activation mode, or in quicklime mode.					
** Cement-1 will have an initial capacity of 1,000 t/d. Capacity will be increased to 1,500 t/d following debottlenecking in about 2022.					

Hammerstone indicated that a project impact assessment was conducted to provide a detailed, quantitative assessment of the Project development within the study areas that were defined for each component in the EIA. The Applicant stated that an assessment was conducted for both peak Project and residual impacts. According to Hammerstone, peak

Project impacts represent a worst-case scenario since all Project components are assumed to be developed and operating at one time. The Applicant indicated that residual impacts are those that remain after reclamation of the Project has been completed.

In addition to the Project assessment, Hammerstone conducted a cumulative effects assessment to examine the incremental effects of the Project on the regional environment. In conducting the cumulative effects assessment, Hammerstone assumed the Project was at full development and all projects publicly disclosed by January 2006 were constructed and made operational at the same time. The Applicant indicated that a reclamation scenario was not created for use in a cumulative effects assessment because not enough was known about the nature of land disturbances in the area or reclamation plans for other projects in the area.

Hammerstone indicated that the Project footprint was superimposed on a baseline scenario (determined from a local and regional baseline assessment) and an assessment of impacts on receptors within each environmental component was conducted. The Applicant indicated that the assessment was characterized according to criteria of magnitude, reversibility, geographic extent, and duration. Hammerstone stated that receptors were selected within each component of the EIA based on regulatory requirements, outcomes of multi-stakeholder sessions and stakeholder feedback.

1.3: Review Process

The Hammerstone Project application was filed with the NRCB on May 24, 2006. The NRCB and Alberta Energy and Utilities Board (now the Energy Resources Conservation Board) issued a Joint Notice of Filing on June 22, 2006. A copy of this Notice was published on July 3, 2006 in the Fort McMurray Today and in the July issue of Alberta Sweetgrass. Following independent reviews of the filed materials by the NRCB, the Energy Resources Conservation Board (ERCB) and Alberta Environment (AENV), consolidated requests for supplemental information were sent to the Applicant on July 6, 2007 and March 25, 2008. The information requested was determined necessary to complete the statutory mandates of the NRCB, the Energy Resources Conservation Board and Alberta Environment. The Applicant filed responses to the requested information in December 2007 and March 2008, thereby completing its application to the Board.

The NRCB received objections from the Mikisew Cree First Nation and the Métis Nation of Alberta – Local 1935 in response to an NRCB/ERCB Joint Notice of Application dated June 2, 2008. Birch Mountain Resources Ltd. requested that the Board extend it some time to continue discussions with the parties filing objections as it believed that it could address their concerns without the need for a hearing. At the same time as this was taking place there were a number of media articles in the major daily Alberta newspapers describing various financial challenges facing Birch Mountain Resources Ltd. Birch Mountain Resources Ltd. was placed in receivership on November 5, 2008. Following notification that Hammerstone Corporation was in the process of concluding a purchase of the Birch Mountain Resources Ltd. assets from the court appointed receiver, the Board suspended consideration of the Hammerstone Project application and advised the new owners of certain information that would be needed in order to lift the suspension. The Board was advised that Hammerstone Corporation had concluded a purchase of the Birch Mountain Resources Ltd. assets on April 2, 2009.

Hammerstone Corporation completed the Board's information requirements in December 2009. After consulting with Alberta Environment concerning the completeness of the EIA and completing its own review, the NRCB and Energy Resources Conservation Board issued a Joint Notice of Application dated December 14, 2009 that was published in the Edmonton Journal, Fort McMurray Today and Alberta Sweetgrass newspapers. The Board received two statements of concern in response to the Notice. The NRCB found that the persons filing the statements of concern failed to establish that they would be directly affected by the Hammerstone Project, and that the review of this project could be completed without the need for a public hearing. During its consideration of the application, the Board requested additional information which was provided by Hammerstone Corporation in April and May, 2010.

The Panel conducted a site tour related to the Project on May 5, 2010. The NRCB's general practice is that site tours are conducted with the full knowledge of all parties participating in the review. In the event a hearing is held as part of the review the Panel will notify all participants in advance and seek their input on the tour itinerary. As no hearing was held in conjunction with this review, the Panel notified Hammerstone in advance of its intention to conduct a site tour, but declined the offer to tour the actual mine site. The Panel was accompanied by a single NRCB staff member and remained on public roadways and public lands at all times. The site tour included travel north on Highway 63 from Fort McMurray to Fort McKay where the Panel stopped briefly at the Athabasca River in the town site. The Panel then continued to the entrance to the Muskeg Valley Quarry. The Panel conducted a walking site tour of the Quarry of the Ancestors. Before returning to Fort McMurray, the Panel travelled north to the entrance gates to the Syncrude (Aurora) and Petro Canada (Fort Hills) mines and east to Suncor (Firebag).

1.4: Public Consultation

Birch Mountain Resources Ltd. initiated its consultation process on the Hammerstone Project with the issuance of public disclosure documents in December 2004. Consultation involved a continuance of the relationship established between the Applicant and various community stakeholders that was initially established through the development of Birch Mountain's Muskeg Valley Quarry. Identified parties included the Fort McKay First Nation, Mikisew Cree First Nation, Athabasca Chipewyan First Nation, the Regional Municipality of Wood Buffalo Regional Issues Working Group and various individuals and corporations.

Up to the point in time that Birch Mountain Resources Ltd. was placed in receivership, the communications and consultation program was conducted primarily by a senior company official who was also a member of the company's Board of Directors. Quarterly consultation reports were prepared and included in the application filed with the Board in May 2006. Consultation efforts included meetings, picnics, technical workshops, site tours, and presentations with the Aboriginal communities, regulators, the public, stakeholders, industry associations and other interested groups at various locations within the region.

Following the asset acquisition by Hammerstone Corporation, the Board asked that the new owner provide an update on efforts to consult with stakeholders. In June 2009, Hammerstone Corporation provided a consultation log identifying contacts and communication with various Aboriginal communities and organizations.

A critical element of ensuring public awareness is the public consultation program conducted by the proponent. The Board is satisfied that Hammerstone Corporation (as a