

June 16, 2010

File: 227-02-00

Mr. Hal Retzer
Bow Valley Clean Air Society
513 4th Street
Canmore, AB T1W 2G6

Dear Mr. Retzer:

**Re: Graymont Western Canada Inc.
Exshaw Lime Plant Approval Renewal
EPEA Application No. 013-227**

Thank you for your letter dated February 24, 2009 expressing concerns about this application. Alberta Environment is responsible for reviewing the *Environmental Protection and Enhancement Act* (EPEA) component of the application. Please be advised that on May 31, 2010 Approval No. 227-02-00 was issued to Graymont Western Canada Inc. in relation to the above application.

Please find enclosed a copy of the decision issued with respect to the application.

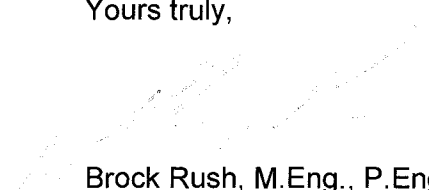
Section 91 of EPEA allows anyone who filed a statement of concern and who is directly affected by the Director's decision to submit a notice of appeal to the Environmental Appeals Board. Please note there are strict timelines for filing a notice of appeal. Notice of appeal must be submitted to:

Chair
Environmental Appeals Board
3rd Floor, Peace Hills Trust Tower
10011 – 109 Street
Edmonton, AB T5J 3S8

Telephone: (780) 427-6207 Fax: (780) 427-4693

If you have any questions, please contact Joseph Feehan at 403-297-5940.

Yours truly,



Brock Rush, M.Eng., P.Eng
District Approvals Manager
Designated Director Under the Act

Enclosure

cc: Graymont Western Canada Inc.
Joseph Feehan, AENV
Regulatory Approvals Centre

APPROVAL

PROVINCE OF ALBERTA

ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT
R.S.A. 2000, c.E-12, as amended.

APPROVAL NO. 227-02-00

APPLICATION NO. 013-227

EFFECTIVE DATE: May 31, 2010

EXPIRY DATE: April 30, 2020

APPROVAL HOLDER: Graymont Western Canada Inc.

ACTIVITY: CONSTRUCTION, OPERATION AND RECLAMATION OF THE

Exshaw lime plant

IS SUBJECT TO THE ATTACHED TERMS AND CONDITIONS.

Designated Director under the Act [Signature] Brock Rush, M.Eng., P.Eng.

Date Signed May 31, 2010

TERMS AND CONDITIONS ATTACHED TO APPROVAL

PART 1: DEFINITIONS

SECTION 1.1: DEFINITIONS

- 1.1.1 All definitions from the Act and the regulations apply except where expressly defined in this approval.
- 1.1.2 In all PARTS of this approval:
- (a) "Act" means the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c.E-12, as amended;
 - (b) "air effluent stream" means any substance in a gaseous medium released by or from a plant;
 - (c) "application" means the written submissions to the Director in respect of application number 013-227 and any subsequent applications where amendments are issued for this approval;
 - (d) "CEMS Code" means the *Continuous Emission Monitoring System (CEMS) Code*, Alberta Environmental Protection, Pub. No. Ref: 107, May 1998, as amended;
 - (e) "clean wood" means wood materials that are not chemically treated or preserved, and which exclude wood materials that contain paint, varnishes, oil, styrofoam, shrink wrap, glues or any hazardous materials;
 - (f) "container" means any portable device in which a substance is kept, including but not limited to drums, barrels and pails which have a capacity greater than 18 litres but less than 210 litres;
 - (g) "day", when referring to sampling, means any sampling period of 24 consecutive hours;
 - (h) "decommissioning" means the dismantling and decontamination of a plant undertaken subsequent to the termination or abandonment of any activity or any part of any activity regulated under the Act;
 - (i) "decontamination" means the treatment or removal of substances from the plant and affected lands;
 - (j) "Director" means an employee of the Government of Alberta designated as a Director under the Act;

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (k) "dismantling" means the removal of buildings, structures, process and pollution abatement equipment, vessels, storage facilities, material handling facilities, railways, roadways, pipelines and any other installations that are being or have been used or held for or in connection with the plant;
- (l) "domestic wastewater" means wastewater that is the composite of liquid and water-carried wastes associated with the use of water for drinking, cooking, cleaning, washing, hygiene, sanitation or other domestic purposes, together with any infiltration and inflow wastewater, that is released into a wastewater collection system;
- (m) "domestic wastewater system" means the parts of the plant that collect, store or treat domestic wastewater from the plant;
- (n) "dry" means a condition that does not include uncombined water vapour;
- (o) "fugitive emissions" means emissions of substances to the atmosphere other than ozone depleting substances, originating from a plant source other than a flue, vent, or stack but does not include sources which may occur due to breaks or ruptures in process equipment;
- (p) "grab", when referring to a sample, means an individual sample collected in less than 30 minutes and which is representative of the substance sampled;
- (q) "ISO/IEC 17025" means the international standard, developed and published by International Organization for Standardization (ISO), specifying management and technical requirements for laboratories;
- (r) "incompatible wastes" means waste materials which could cause dangerous reactions from direct contact with one another;
- (s) "industrial runoff" means precipitation that falls on or traverses the plant developed area;
- (t) "industrial runoff control system" means the parts of the plant that collect, store or treat industrial runoff from the plant;
- (u) "industrial wastewater" means the composite of liquid wastes and water-carried wastes, any portion of which results from any industrial process carried on at the plant;
- (v) "industrial wastewater control system" means the parts of the plant that collect, store or treat industrial wastewater;

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- (w) "local environmental authority" means the Department of Environment, in the Province of Alberta, or the agency that has the equivalent responsibilities for any jurisdiction outside the Province;
- (x) "manual stack survey" means a survey conducted in accordance with the *Alberta Stack Sampling Code*, Alberta Environment, 1995, as amended;
- (y) "monitoring system" means all equipment used for sampling, conditioning, analyzing or recording data in respect of any parameter listed or referred to in this approval including equipment used for continuous monitoring;
- (z) "NAPS" means National Air Pollution Surveillance;
- (aa) "month" means calendar month;
- (bb) "plant" means all buildings, structures, process and pollution abatement equipment, vessels, storage facilities, material handling facilities, roadways, railways, pipelines and other installations, and includes the land, located on the south half of Section 25, Township 24, Range 09, West of the 5th Meridian, that is being or has been used or held for or in connection with the Exshaw lime plant;
- (cc) "plant developed area" means the areas of the plant used for the storage, treatment, processing, transport, or handling of raw material, intermediate product, by-product, finished product, process chemicals, or waste material;
- (dd) "PM_{2.5}" means airborne particles that are 2.5 microns or less in diameter;
- (ee) "PM₁₀" means airborne particles that are 10 microns or less in diameter;
- (ff) "QA/QC" means quality assurance and quality control;
- (gg) "quarter year" means a time period of three consecutive months designated as January, February, and March; or April, May, and June; or July, August, and September; or October, November, and December;
- (hh) "regulations" means the regulations enacted pursuant to the Act, as amended;
- (ii) "representative daily average" means the daily average percent of coal content of the kiln fuel based on the 90-day moving average value determined 7 days prior to the date of the manual stack survey;
- (jj) "representative grab" means a sample consisting of equal volume portions of water collected from at least four sites between 0.20-0.30 metres below the water surface within a pond;

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (kk) "soil" means mineral or organic earthen materials that can, have, or are being altered by weather, biological processes, or human activity;
- (ll) "tank" means a stationary device, designed to contain an accumulation of a substance, which is constructed primarily of non-earthen materials that provide structural support including wood, concrete, steel, and plastic;
- (mm) "TSP" means total suspended particulate;
- (nn) "volume estimate" means a technical evaluation based on the sources contributing to the release, including, but not limited to, pump capabilities, water meters, and batch release volumes;
- (oo) "waste storage area(s)" means the area(s) designated for storage of waste as described in the application;
- (pp) "week" means any consecutive 7-day period; and
- (qq) "year" means calendar year, unless otherwise specified.

PART 2: GENERAL

SECTION 2.1: REPORTING

- 2.1.1 The approval holder shall immediately report to the Director by telephone any contravention of the terms and conditions of this approval at 1-780-422-4505.
- 2.1.2 The approval holder shall submit a written report to the Director within 7 days of the reporting pursuant to 2.1.1.
- 2.1.3 The approval holder shall immediately notify the Director in writing if any of the following events occurs:
 - (a) the approval holder is served with a petition into bankruptcy;
 - (b) the approval holder files an assignment in bankruptcy or Notice of Intent to make a proposal;
 - (c) a receiver or receiver-manager is appointed;
 - (d) an application for protection from creditors is filed for the benefit of the approval holder under any creditor protection legislation; or
 - (e) any of the assets which are the subject matter of this approval are seized for any reason.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 2.1.4 If the approval holder monitors for any substances or parameters which are the subject of operational limits as set out in this approval more frequently than is required and using procedures authorized in this approval, then the approval holder shall provide the results of such monitoring as an addendum to the reports required by this approval.
- 2.1.5 The approval holder shall submit all monthly reports required by this approval to be compiled or submitted to the Director on or before the end of the month following the month in which the information was collected.
- 2.1.6 The approval holder shall submit all annual reports required by this approval to be compiled or submitted to the Director on or before March 31 of the year following the year in which the information was collected, unless otherwise specified in this approval.

SECTION 2.2: RECORD KEEPING

2.2.1 The approval holder shall:

- (a) record; and
- (b) retain

all the following information in respect of any sampling conducted or analyses performed in accordance with this approval for a minimum of ten years, unless otherwise authorized in writing by the Director:

- (i) the place, date and time of sampling,
- (ii) the dates the analyses were performed,
- (iii) the analytical techniques, methods or procedures used in the analyses,
- (iv) the names of the persons who collected and analysed each sample, and
- (v) the results of the analyses.

SECTION 2.3: ANALYTICAL REQUIREMENTS

2.3.1 With respect to any sample required to be taken pursuant to this approval, the approval holder shall ensure that:

- (a) collection;

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- (b) preservation;
- (c) storage;
- (d) handling; and
- (e) analysis

shall be conducted in accordance with the following, unless otherwise authorized in writing by the Director:

- (i) for air:
 - (A) the *Alberta Stack Sampling Code*, Alberta Environment, 1995, as amended,
 - (B) the *Methods Manual for Chemical Analysis of Atmospheric Pollutants*, Alberta Environment, 1993, as amended,
 - (C) the *Air Monitoring Directive*, Alberta Environment, 1989, as amended, and
 - (D) the *CEMS Code*;
- (ii) for industrial wastewater, industrial runoff, groundwater and domestic wastewater:
 - (A) the *Standard Methods for the Examination of Water and Wastewater*, published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation, 1998, as amended;
- (iii) for whole effluent toxicity:
 - (A) the *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout*, Environment Canada, Environmental Protection Series 1/RM/13, December 2000, as amended,
 - (B) the *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia Magna*, Environment Canada, Environmental Protection Series 1/RM/14, December 2000, as amended,

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- (C) the *Biological Test Method: Growth Inhibition Test Using the Freshwater Alga Selenastrum capricornutum*, Environment Canada, Environmental Protection Series, November 1992, as amended,
 - (D) the *Biological Test Method: Test of Reproduction and Survival Using the Cladoceran Ceriodaphnia dubia*, Environment Canada, Environmental Protection Series 1/RM/21, February 1992, as amended,
 - (E) the *Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows*, Environment Canada, Environmental Protection Series 1/RM/22, February 1992, as amended, and
 - (F) the *Biological Test Method: Toxicity Test Using Luminescent Bacteria (Photobacterium phosphoreum)*, Environment Canada, Environmental Protection Series, 1/RM/24, November 1992, as amended;
- (iv) for soil:
- (A) the *Soil Monitoring Directive*, Alberta Environment, May 2009, as amended, and
 - (B) the *Soil Quality Criteria Relative to Disturbance and Reclamation*, Alberta Agriculture, March 1987, as amended; and
- (v) for waste:
- (A) the *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, SW-846, September 1986, as amended,
 - (B) the *Methods Manual for Chemical Analysis of Water and Wastes*, Alberta Environmental Centre, Vegreville, Alberta, 1996, AECV96-M1 as amended,
 - (C) the *Toxicity Characteristic Leaching Procedure (TCLP)* USEPA Regulation 40 CFR 261, Appendix II, Method No. 1311, as amended, or
 - (D) the *Standard Methods for the Examination of Water and Wastewater*, American Public Health Association, American

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Water Works Association, and the Water Environment Federation, 1988, as amended.

- 2.3.2 The approval holder shall analyse all samples that are required to be obtained by this approval in a laboratory accredited pursuant to ISO/IEC 17025, as amended, for the specific parameter(s) to be analysed, unless otherwise authorized in writing by the Director.
- 2.3.3 The term sample as used in clause 2.3.2 does not include samples directed to continuous monitoring equipment, until specifically required in writing by the Director.
- 2.3.4 The approval holder shall comply with the terms and conditions of any written authorization issued by the Director under 2.3.2.

SECTION 2.4: OTHER

- 2.4.1 The terms and conditions of this approval are severable. If any term or condition of this approval or the application of any term or condition is held invalid, the application of such term or condition to other circumstances and the remainder of this approval shall not be affected thereby.
- 2.4.2 *Environmental Protection and Enhancement Act* Approval No. 227-01-00 is cancelled.
- 2.4.3 All tanks shall conform to the *Guideline for Secondary Containment for Above Ground Storage Tanks*, Alberta Environment, 1997, as amended, unless otherwise authorized in writing by the Director.
- 2.4.4 All aboveground storage tanks containing liquid hydrocarbons or organic compounds shall conform to the *Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks*, Canadian Council of Ministers of the Environment, PN 1180, 1995, as amended.
- 2.4.5 All abbreviations used in this approval follow those given in *Standard Methods for the Examination of Water and Wastewater* published jointly by the American Public Health Association, the American Water Works Association, and the Water Environment Federation, 1998, as amended, unless otherwise specified in this approval.

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PART 3: CONSTRUCTION

SECTION 3.1: GENERAL

- 3.1.1 If construction of the proposed plant modifications as described in application 013-227 has not commenced on or before December 31, 2011, the approval holder shall apply for an amendment to this approval unless otherwise authorized in writing by the Director.
- 3.1.2 The approval holder shall notify the Director in writing at least 14 days before commencing operations of the modifications as described in the application unless otherwise authorized in writing by the Director.
- 3.1.3 The approval holder shall construct the modifications as described in the application and shall include, at a minimum, all of the following:
- (a) a Lime Kiln No. 2 baghouse and associated exhaust stack; and
 - (b) an alternative fuel wood material processing system, including all of the following:
 - (i) a wood screen and wood chipper,
 - (ii) a coverall building equipped with a concrete floor to house wood piles and the wood screen and wood chipper,
 - (iii) a wood dryer,
 - (iv) a wood pulverizer,
 - (v) a pulverized wood storage silo, and
 - (vi) associated equipment
- unless otherwise authorized in writing by the Director.
- 3.1.4 The approval holder shall complete construction of the Lime Kiln No. 2 baghouse and associated exhaust stack by June 1, 2013.
- 3.1.5 The approval holder shall submit detailed as-built drawings for the plant modifications to the Director within 6 months after commencing operations of the proposed plant modifications.

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SECTION 3.2: AIR

3.2.1 The approval holder shall construct the stack identified in TABLE 3.2-A according to the height requirement referred to in the TABLE 3.2-A.

TABLE 3.2-A: STACK HEIGHTS

STACK	MINIMUM HEIGHT ABOVE GRADE (METRES)
Lime Kiln No. 2 Baghouse exhaust stack	25.0

MONITORING EQUIPMENT

3.2.2 The following stack shall be equipped with sampling facilities:

- (a) the Lime Kiln No. 2 Baghouse exhaust stack.

3.2.3 The sampling facilities required by 3.2.2 shall, at a minimum, be:

- (a) installed;
- (b) operated; and
- (c) maintained

to comply with:

- (i) the *Alberta Stack Sampling Code*, Alberta Environment, 1995, as amended,
- (ii) the *CEMS Code*, and
- (iii) the *Air Monitoring Directive*, Alberta Environment, 1989, as amended.

POLLUTION ABATEMENT EQUIPMENT

3.2.4 The approval holder shall install, at a minimum, all of the following air pollution abatement equipment:

- (a) a baghouse for Lime Kiln No. 2 particulate emission control by June 1, 2013; and
- (b) baghouses for particulate emission control for:

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (i) wood screen and wood chipper area, and
 - (ii) wood pulverizer and pulverized wood storage silo
- unless otherwise authorized in writing by the Director.

PART 4: OPERATIONS, LIMITS, MONITORING AND REPORTING

SECTION 4.1: AIR

OPERATIONS

- 4.1.1 The approval holder shall not release any air effluent streams to the atmosphere except as provided in this approval.
- 4.1.2 The approval holder shall only release air effluent streams to the atmosphere from the following sources:
 - (a) the Lime Plant Kiln No. 1 Wet Scrubber 321-WES-1 exhaust stack;
 - (b) the Lime Plant Kiln No. 2:
 - (i) Wet Scrubber 322-WES-2 exhaust stack, prior to commencing operations of the baghouse, and
 - (ii) Baghouse exhaust stack, after commencing operations of the baghouse;
 - (c) the Lime Plant Dust Storage Bin 321-SIL-71 Baghouse 321-PDC-71 exhaust stack;
 - (d) the Lime Plant Baghouse 345-PDC-80 exhaust stack;
 - (e) the Lime Plant Lime Product Loadout Baghouse 345-PDC-81 exhaust stack;
 - (f) the Lime Plant Screenhouse Baghouse 345-PDC-85 exhaust stack;
 - (g) the Lime Plant Coal Silo 321-SIL-201 Baghouse 321-PDC-203 exhaust stack;
 - (h) the Lime Plant Coal Silo 322-SIL-202 Baghouse 322-PDC-204 exhaust stack;
 - (i) the Lime Hydrator 405-HYD-1 Wet Scrubber 405-WCL-1 exhaust stack;
 - (j) the Hydrated Lime Loadout Baghouse 410-PDC-2 exhaust stack;

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- (k) the Lime Hydrator System Baghouse 410-PDC-80 exhaust stack;
- (l) the Calcium Carbonate Plant Dryer Baghouse 535-PDC-1 exhaust stack;
- (m) the Calcium Carbonate Plant Bagging Area Baghouse 535-PDC-2 exhaust stack;
- (n) the Calcium Carbonate Plant Baghouse 535-PDC-3 exhaust stack;
- (o) the Calcium Carbonate Plant Loadout Baghouse 535-PDC-4 exhaust stack;
- (p) the Calcium Carbonate Plant Raymond Mill Baghouse 535-PDC-32 exhaust stack;
- (q) the Calcium Carbonate Plant Silo 535-SIL-104 Loadout Baghouse 535-PDC-104 exhaust stack;
- (r) the Granulime Plant Dryer Baghouse 540-PDC-1 exhaust stack;
- (s) the Granulime Plant Baghouse 540-PDC-2 exhaust stack;
- (t) the wood material processing system:
 - (i) Wood Screen and Wood Chipper Area Baghouse exhaust stack, and
 - (ii) Wood Pulverizer and Pulverized Wood Storage Silo Baghouse exhaust stack,or
 - (iii) as otherwise authorized in writing by the Directorafter commencing operations of the wood material processing system;
- (u) the space ventilation exhaust stacks as described in the application;
- (v) any natural gas fired equipment such as boilers and space heater exhaust stacks; and
- (w) any other source authorized in writing by the Director.

4.1.3 The approval holder shall:

- (a) collect; and

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- (b) direct:
 - (i) the air effluent stream from the Lime Plant Kiln No. 1 to Wet Scrubber 321-WES-1,
 - (ii) the air effluent stream from the Lime Plant Kiln No. 2:
 - (A) to Wet Scrubber 322-WES-2, prior to commencing operations of the baghouse, and
 - (B) to the baghouse, after commencing operations of the baghouse;
 - (iii) the air effluent stream from the Lime Plant Dust Storage Bin 321-SIL-71 to Baghouse 321-PDC-71,
 - (iv) the air effluent stream from the Lime Plant to Baghouse 345-PDC-80,
 - (v) the air effluent stream from the Lime Plant Lime Product Loadout area to Baghouse 345-PDC-81,
 - (vi) the air effluent stream from the Lime Plant Screenhouse to Baghouse 345-PDC-85,
 - (vii) the air effluent stream from the Lime Plant Coal Silo 321-SIL-201 to Baghouse 321-PDC-203,
 - (viii) the air effluent stream from the Lime Plant Coal Silo 322-SIL-202 to Baghouse 322-PDC-204,
 - (ix) the air effluent stream from the Lime Hydrator 405-HYD-1 to Wet Scrubber 405-WCL-1,
 - (x) the air effluent stream from the Hydrated Lime Loadout area to Baghouse 410-PDC-2,
 - (xi) the air effluent stream from the Lime Hydrator System to Baghouse 410-PDC-80,
 - (xii) the air effluent stream from the Calcium Carbonate Plant Dryer to Baghouse 535-PDC-1,
 - (xiii) the air effluent stream from the Calcium Carbonate Plant Bagging Area to Baghouse 535-PDC-2,

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- (xiv) the air effluent stream from the Calcium Carbonate Plant to Baghouse 535-PDC-3,
- (xv) the air effluent stream from the Calcium Carbonate Plant Loadout area to Baghouse 535-PDC-4,
- (xvi) the air effluent stream from the Calcium Carbonate Plant Raymond Mill to Baghouse 535-PDC-32,
- (xvii) the air effluent stream from the Calcium Carbonate Plant Loadout Silo 535-SIL-104 to Baghouse 535-PDC-104,
- (xviii) the air effluent stream from the Granulime Plant Dryer to Baghouse 540-PDC-1,
- (xix) the air effluent stream from the Granulime Plant to Baghouse 540-PDC-2, and
- (xx) the wood material processing system air effluent stream:
 - (A) from Wood Screen and Wood Chipper Area to a baghouse, and
 - (B) from Wood Pulverizer and Pulverized Wood Storage Silo to a baghouse,or
 - (C) as otherwise authorized in writing by the Directorafter commencing operations of the wood material processing system.

4.1.4 In addition to the limits specified in 4.1.20 and 4.1.21, the approval holder shall not operate process equipment unless and until the pollution abatement equipment associated with that process equipment is operating as identified in 4.1.3.

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- 4.1.5 Prior to commencing operations of the Lime Kiln No. 2 Baghouse, the approval holder shall maintain the following stacks according to the minimum height requirements specified in TABLE 4.1-A.

TABLE 4.1-A: STACK HEIGHTS PRIOR TO COMMENCING OPERATIONS OF THE LIME KILN NO. 2 BAGHOUSE

STACK	MINIMUM HEIGHT ABOVE GRADE (METRES)
Lime Kiln No. 1 Wet Scrubber exhaust stack	25.0
Lime Kiln No. 2 Wet Scrubber exhaust stack	25.0
Lime Hydrator Wet Scrubber exhaust stack	13.4

- 4.1.6 After commencing operations of the Lime Kiln No. 2 Baghouse, the approval holder shall maintain the following stacks according to the minimum height requirements specified in TABLE 4.1-B.

TABLE 4.1-B: STACK HEIGHTS AFTER COMMENCING OPERATIONS OF THE LIME KILN NO. 2 BAGHOUSE

STACK	MINIMUM HEIGHT ABOVE GRADE (METRES)
Lime Kiln No. 1 Wet Scrubber exhaust stack	25.0
Lime Kiln No. 2 Baghouse exhaust stack	25.0
Lime Hydrator Wet Scrubber exhaust stack	13.4

- 4.1.7 The approval holder shall control fugitive emissions and any source not specified in 4.1.2 in accordance with 4.1.8 of this approval unless otherwise authorized in writing by the Director.
- 4.1.8 With respect to fugitive emissions and any source not specified in 4.1.2, the approval holder shall not release a substance or cause to be released a substance that causes or may cause any of the following:
- (a) impairment, degradation or alteration of the quality of natural resources;
 - (b) material discomfort, harm or adverse effect to the well being or health of a person; or
 - (c) harm to property or to the plant or animal life.

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4.1.9 The approval holder shall not burn any debris by means of an open fire unless authorized in writing by the Director.

4.1.10 The approval holder shall:

- (a) collect;
- (b) store;
- (c) transport; and
- (d) dispose of

all dust from the baghouses in sealed containers.

4.1.11 The approval holder shall:

- (a) develop;
- (b) keep up to date; and
- (c) implement

a *Preventative Maintenance Plan for Air Pollution Abatement Equipment* for all air pollution abatement equipment in accordance with:

- (i) the equipment manufacturers' specifications, or
- (ii) the best management practice of the industry, if there is no equipment manufacturer's specifications

on or before January 1, 2011.

4.1.12 The approval holder shall:

- (a) keep a copy of the *Preventative Maintenance Plan for Air Pollution Abatement Equipment* referred to in 4.1.11 at the plant; and
- (b) make the *Preventative Maintenance Plan for Air Pollution Abatement Equipment* available for review by the Director upon request.

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4.1.13 The approval holder shall:

- (a) keep a record of the preventative maintenance work completed in accordance with the *Preventative Maintenance Plan for Air Pollution Abatement Equipment* referred to in 4.1.11; and
- (b) include a summary of the:
 - (i) major updates to the *Preventative Maintenance Plan for Air Pollution Abatement Equipment*, and
 - (ii) major preventative maintenance work completed in accordance with the *Preventative Maintenance Plan for Air Pollution Abatement Equipment*

referred to in 4.1.11 in the Annual Air Emissions Summary Report.

4.1.14 The approval holder shall store the coal only in the coal storage building or the two coal silos.

4.1.15 The approval holder shall cover coal conveyor between the coal storage building and coal silos at all times when the coal is being conveyed.

4.1.16 The approval holder shall not release particulate matter or cause to be released particulate matter from the coal grinding mills to the ambient air.

4.1.17 The approval holder shall use water sprays on the raw material crushing equipment.

4.1.18 The approval holder shall apply dust suppressant to the unpaved roadways at the plant.

4.1.19 The approval holder shall use:

- (a) retractable dust-free loading spouts;
- (b) portable dust hoods; or
- (c) tarpaulins

when loading all materials, except the following, into open rail cars or trucks:

- (i) preheater reject,
- (ii) Granulime reject,

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- (iii) clarifier sludge, and
- (iv) limestone rock.

AIR LIMITS

4.1.20 Prior to commencing operations of the Lime Kiln No. 2 Baghouse, releases of the following substances to the atmosphere shall not exceed the limits specified in TABLE 4.1-C.

TABLE 4.1-C: AIR LIMITS PRIOR TO COMMENCING OPERATIONS OF THE LIME KILN NO. 2 BAGHOUSE

EMISSION SOURCE	SUBSTANCE	MAXIMUM EMISSION RATE OR CONCENTRATION LIMIT
Lime Kiln No. 1 Wet Scrubber exhaust stack	Particulate	0.2 grams per kilogram of effluent
Lime Kiln No. 2 Wet Scrubber exhaust stack	Particulate	0.2 grams per kilogram of effluent

4.1.21 After commencing operations of the Lime Kiln No. 2 Baghouse, releases of the following substances to the atmosphere shall not exceed the limits specified in TABLE 4.1-D.

TABLE 4.1-D: AIR LIMITS AFTER COMMENCING OPERATIONS OF THE LIME KILN NO. 2 BAGHOUSE

EMISSION SOURCE	SUBSTANCE	MAXIMUM EMISSION RATE OR CONCENTRATION LIMIT
Lime Kiln No. 1 Wet Scrubber exhaust stack	Particulate	0.2 grams per kilogram of effluent
Lime Kiln No. 2 Baghouse exhaust stack	Particulate	0.05 grams per kilogram of effluent

4.1.22 The sulphur content of coal used as fuel shall not exceed 1% by weight based on a proportional sample averaged over one hour.

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4.1.23 The visible emissions from any source to the atmosphere shall not exceed an opacity of 20% averaged over a period of six consecutive minutes.

MONITORING AND REPORTING

4.1.24 Prior to commencing operations of the Lime Kiln No. 2 Baghouse, the approval holder shall monitor the air emission sources as specified in TABLE 4.1-E.

4.1.25 Prior to commencing operations of the Lime Kiln No. 2 Baghouse, the approval holder shall report to the Director the results of the air emission source monitoring as required in TABLE 4.1-E.

TABLE 4.1-E: AIR EMISSION SOURCE MONITORING AND REPORTING PRIOR TO COMMENCING OPERATIONS OF THE LIME KILN NO. 2 BAGHOUSE

EMISSION SOURCE	PARAMETER	FREQUENCY	METHOD OF MONITORING	SAMPLE LOCATION	REPORT FREQUENCY (one copy required)	
					MONTHLY	ANNUALLY
Lime Kiln No. 1	- TSP - Nitrogen Oxides - Sulphur Dioxide	- Once in 2010; - Twice per year starting in 2011.	Manual Stack Survey	Lime Kiln No. 1 Wet Scrubber exhaust stack	Monthly	Annually
	- Heavy metals	Every 5th year, starting in 2010.				
Lime Kiln No. 2	- TSP - Nitrogen Oxides - Sulphur Dioxide	- Once in 2010; - Twice per year Starting in 2011.		Lime Kiln No. 2 Wet Scrubber exhaust stack		
	- Heavy metals	Every 5th year, starting in 2010.				

4.1.26 After commencing operations of the Lime Kiln No. 2 Baghouse, the approval holder shall monitor the air emission sources as specified in TABLE 4.1-F.

4.1.27 After commencing operations of the Lime Kiln No. 2 Baghouse, the approval holder shall report to the Director the results of the air emission source monitoring as required in TABLE 4.1-F.

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TABLE 4.1-F: AIR EMISSION SOURCE MONITORING AND REPORTING AFTER COMMENCING OPERATIONS OF THE LIME KILN NO. 2 BAGHOUSE

EMISSION SOURCE	PARAMETER	FREQUENCY	METHOD OF MONITORING	SAMPLE LOCATION	REPORT FREQUENCY (one copy required)	
					MONTHLY	ANNUALLY
Lime Kiln No. 1	- TSP - Nitrogen Oxides - Sulphur Dioxide	- Once in 2010; - Twice per year starting 2011.	Manual Stack Survey	Lime Kiln No. 1 Wet Scrubber exhaust stack	Monthly	Annually
	- Heavy metals	Every 5th year, starting in 2010.				
Lime Kiln No. 2	- TSP, PM ₁₀ , and PM _{2.5} - Nitrogen Oxides - Sulphur Dioxide	Twice per year.		Lime Kiln No. 2 Baghouse exhaust stack		
	- Heavy metals	Every 5th year, starting 6 months after commencing operations of the Lime Kiln No. 2 Baghouse.				
	- In-stack opacity	Continuous, starting 6 months after commencing operations of the Lime Kiln No. 2 Baghouse.	CEMS			

4.1.28 The approval holder shall notify the Director in writing a minimum of two weeks prior to any manual stack survey that is required to be conducted by this approval.

4.1.29 The approval holder shall conduct, at a minimum, one of the manual stack surveys for each kiln as specified in TABLES 4.1-E and 4.1-F with the following condition:

- (a) the percent coal content of the fuel shall be equal to or greater than the representative daily average

unless otherwise authorized in writing by the Director.

4.1.30 The approval holder shall submit the monthly CEMS Code data required in section 4.1.27 electronically to the Alberta Environment File Transfer Protocol (FTP) site

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which is used for the electronic submission of continuous emissions monitoring information.

- 4.1.31 The approval holder shall monitor ambient air parameters as specified in TABLE 4.1-G, unless otherwise authorized in writing by the Director.
- 4.1.32 The approval holder shall report to the Director the results of the ambient air monitoring as required in TABLE 4.1-G, unless otherwise authorized in writing by the Director.

TABLE 4.1-G: AMBIENT AIR MONITORING AND REPORTING

MONITORING STATION	PARAMETER	FREQUENCY	METHOD OF MONITORING	METHOD OF ANALYSIS OR MEASUREMENT	REPORT FREQUENCY (one copy required)	
					Monthly	Annually
Intermittent monitoring station	TSP	As per NAPS	High volume sampling	Air Monitoring Directive	Monthly	Annually
	PM ₁₀					
	PM _{2.5}					
Meteorological Station	- Wind speed, and direction; - Temperature; - Barometric pressure; - Relative humidity; and - Precipitation.	Continuous	Continuous	Methods as authorized in writing by the Director	Not required	Not required
Passive station	Sulphur Dioxide (SO ₂)	Monthly	Passive sampling	As per manufacturer's specifications unless otherwise required in the Air Monitoring Directive, as amended	Monthly	Annually
	Nitrogen Oxides (NO _x)					

MONTHLY AIR EMISSIONS SUMMARY REPORT

- 4.1.33 In addition to the monthly reporting in TABLES 4.1-E, 4.1-F and 4.1-G, the approval holder shall submit a Monthly Air Emissions Summary Report to the Director.
- 4.1.34 The Monthly Air Emissions Summary Report referred to in 4.1.32 shall include, at a minimum, all of the following for the month:

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- (a) an assessment of the performance of the air pollution abatement equipment and monitoring;
- (b) the results of manual stack surveys;
- (c) the results of intermittent, continuous and passive ambient monitoring;
- (d) the percent time that each intermittent, continuous and passive ambient monitor was operational and operating;
- (e) an assessment of the emissions of air contaminants from the plant exhaust stacks relative to the limits specified in TABLES 4.1-C and 4.1-D;
- (f) an assessment of the ambient air monitoring data referred to in TABLE 4.1-G relative to the *Alberta Ambient Air Quality Objectives and Guideline*, Alberta Environment, April 2009, as amended;
- (g) a summary of contraventions reported pursuant to 2.1.1; and
- (h) any other information requested by the Director.

ANNUAL AIR EMISSIONS SUMMARY REPORT

- 4.1.35 In addition to the annually reporting in TABLES 4.1-E, 4.1-F and 4.1-G, The approval holder shall submit an Annual Air Emissions Summary Report to the Director.
- 4.1.36 The Annual Air Emissions Summary Report in 4.1.34 shall include, at a minimum, all of the following for the year:
 - (a) a summary assessment of the performance of the air pollution abatement equipment and monitoring;
 - (b) a summary of the operations of the air pollution abatement equipment and monitoring, including but limited to:
 - (i) a description of any modification or improvement to the air pollution abatement equipment and monitoring, and
 - (ii) a description of major equipment repairs and maintenance work;
 - (c) a summary of the results of manual stack surveys;
 - (d) a month-by-month summary of the results of intermittent, continuous and passive ambient monitoring;

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- (e) a month-by-month summary of the percent time that each intermittent, continuous and passive ambient monitor was operational and operating;
- (f) a summary of measured or calculated yearly emissions of:
 - (i) Particulates,
 - (ii) Nitrogen Oxides,
 - (iii) Sulphur Dioxide;
- (g) a month-by-month summary assessment of the emissions of air contaminants from the plant Kiln No. 1 and Kiln No. 2 exhaust stacks relative to the limits specified in TABLES 4.1-C and 4.1-D;
- (h) a month-by-month summary assessment of the ambient air monitoring data referred to in TABLE 4.1-G relative to the *Alberta Ambient Air Quality Objectives and Guideline*, Alberta Environment, April 2009, as amended;
- (i) a month-by-month summary of the fuel used in the lime kilns, including the following:
 - (i) the types of fuels used,
 - (ii) the daily average percentage of clean wood used as fuel when one or both of the lime kilns were operating,
 - (iii) the date and time period when each type of fuel was used,
 - (iv) the number of days that each type of fuel was used, and
 - (v) the percent time that each type of fuel was used;
- (j) a summary of the:
 - (i) major updates to the *Preventative Maintenance Plan for Air Pollution Abatement Equipment*, and
 - (ii) major preventative maintenance work completed in accordance with the *Preventative Maintenance Plan for Air Pollution Abatement Equipment*;
- (k) a month-by-month summary of the contraventions reported pursuant to 2.1.1;

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- (l) Annual Fugitive Dust Control Best Management Practices Plan Summary Report as per 4.1.42; and
- (m) any other information requested by the Director.

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FUGITIVE DUST MANAGEMENT

- 4.1.37 Effective June 1, 2010, the approval holder shall implement the fugitive dust management measures as specified in the document *Best Management Practices Plan for the Control of Fugitive Dust Emissions*, prepared for Graymont Western Canada Inc. (Exshaw Plant), prepared by Pottinger Gaherty Environmental Consultants Ltd., January 2010, as amended, forming part of the application number 013-227.
- 4.1.38 Commencing January 1, 2011, the *Best Management Practices Plan for the Control of Fugitive Dust Emissions* document referred to in 4.1.36, shall include, at a minimum, all of the following information:
- (a) potential fugitive dust sources;
 - (b) control measures and frequency of implementation;
 - (c) performance guidelines;
 - (d) types, methods and frequency of:
 - (i) inspections, and
 - (ii) monitoring;
 - (e) inspection forms;
 - (f) inspection and monitoring records;
 - (g) training requirements and frequency; and
 - (h) program performance evaluation description and frequency.
- 4.1.39 The approval holder shall:
- (a) review the *Best Management Practices Plan for the Control of Fugitive Dust Emissions* document annually, at a minimum; and
 - (b) update the *Best Management Practices Plan for the Control of Fugitive Dust Emissions* document annually, at a minimum.
- 4.1.40 The approval holder shall submit to the Director an up-to-date *Best Management Practices Plan for the Control of Fugitive Dust Emissions* document when requested by the Director.

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- 4.1.41 Effective January 1, 2011, the approval holder shall submit an Annual Fugitive Dust Control Best Management Practices Plan Summary Report to the Director.
- 4.1.42 The Annual Fugitive Dust Control Best Management Practices Plan Summary Report shall include, at a minimum, all of the following information:
- (a) an evaluation of the performance of the fugitive dust management and control measures;
 - (b) a copy of the performance reports;
 - (c) revisions to the *Best Management Practices Plan for the Control of Fugitive Dust Emissions*;
 - (d) a record of fugitive dust public complaints and a description of remedial measures taken; and
 - (e) any other information requested by the Director.
- 4.1.43 The Annual Fugitive Dust Control Best Management Practices Plan Summary Report referred to in 4.1.40 and 4.1.41 shall be included in the Annual Air Emissions Summary Report.

FUELS FOR LIME KILNS

- 4.1.44 The approval holder shall only use the following fuels in the lime kilns:
- (a) natural gas;
 - (b) coal;
 - (c) clean wood; or
 - (d) any combination of (a), (b) and (c)

unless otherwise authorized in writing by the Director.

SECTION 4.2: INDUSTRIAL WASTEWATER AND INDUSTRIAL RUNOFF

OPERATIONS

- 4.2.1 The approval holder shall not release any substances from the plant to the surrounding watershed except as authorized by this approval.

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- 4.2.2 The approval holder shall manage industrial wastewater as described in the application, unless otherwise authorized in writing by the Director.
- 4.2.3 The approval holder shall:
- (a) direct all industrial wastewater from the lime kiln wet scrubber(s) to the Industrial Wastewater Control System;
 - (b) treat all industrial wastewater from the lime kiln wet scrubber(s) in the Industrial Wastewater Control System; and
 - (c) recycle all treated industrial wastewater to the plant as described in the application
- unless otherwise authorized in writing by the Director.
- 4.2.4 The approval holder shall direct all laboratory wastewater to an underground holding tank with subsequent disposal to:
- (a) facilities holding a current Approval, Registration or as otherwise authorized under the Act; or
 - (b) as otherwise authorized in writing by the Director.
- 4.2.5 The approval holder shall direct all industrial runoff from the plant developed area to the Industrial Runoff Control System.
- 4.2.6 The approval holder shall not release industrial runoff or cause to be released industrial runoff from the Industrial Runoff Control System to any surrounding water bodies, unless otherwise authorized in writing by the Director.
- 4.2.7 Releases from the Industrial Runoff Control System to the surrounding environment other than any water bodies, shall not cause any of the following:
- (a) flooding;
 - (b) soil erosion; or
 - (c) discoloration of vegetation.
- 4.2.8 The approval holder shall prevent runoff from off site from entering onto any part of the plant developed areas.
- 4.2.9 The approval holder shall only release industrial runoff from the Industrial Runoff Control System at the discharge point as described in the application.

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LIMITS

4.2.10 Releases from the Industrial Runoff Control System shall not exceed the limits for the parameters specified in TABLE 4.2-A.

TABLE 4.2-A: INDUSTRIAL RUNOFF CONTROL SYSTEM LIMITS

PARAMETER	PARAMETER OR CONCENTRATION LIMITS
pH	≥ 6.0 and ≤ 9.5 pH units
TSS	≤ 25 mg/L
Chemical Oxygen Demand	≤ 50 mg/L
Ammonia Nitrogen	≤ 2 mg/L
Chloride	≤ 500 mg/L
Oil and Grease	No visible film or sheen
Floating Solids	Must not be present except in trace amounts
Visible Foam	

MONITORING AND REPORTING

4.2.11 The approval holder shall monitor the Industrial Runoff Control System as required in TABLE 4.2-B.

4.2.12 The approval holder shall report to the Director the results of the Industrial Runoff Control System monitoring as required in TABLE 4.2-B.

4.2.13 For the purpose of TABLE 4.2-B:

- (a) sampling location A is defined as the release point of the Storm Water Pond.

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TABLE 4.2-B: INDUSTRIAL RUNOFF CONTROL SYSTEM MONITORING AND REPORTING

MONITORING						REPORTING
PARAMETER	PRIOR TO RELEASE		THROUGHOUT THE RELEASE PERIOD			FREQUENCY (one copy required)
	FREQUENCY	SAMPLE TYPE	FREQUENCY	SAMPLE TYPE	SAMPLING LOCATION	
Discharge Volume (m ³)	-	-	Once/Day	Totalizer, or Volume Estimate	A	Annually, Annual Industrial Wastewater and Industrial Runoff Report
pH	Once	Representative Grab	Once/Day	Grab	A	
TSS (mg/L)	Once	Representative Grab	Twice/Week	Grab	A	
Chemical Oxygen Demand (mg/L)	Once	Representative Grab	Twice/Week	Grab	A	
Ammonia Nitrogen (mg/L)	Once	Representative Grab	Twice/Week	Grab	A	
Chloride (mg/L)	Once	Representative Grab	Twice/Week	Grab	A	
Oil and Grease	Once	Observation	Once/Day	Observation	A	
Floating Solids	Once	Observation	Once/Day	Observation	A	
Visible Foam	Once	Observation	Once/Day	Observation	A	

4.2.14 In addition to the annual reporting in TABLE 4.2-B, the Annual Industrial Wastewater and Industrial Runoff Report shall include, at a minimum, all of the following information:

- (a) a summary assessment of the performance of the:
 - (i) Industrial Wastewater Control System,
 - (ii) Industrial Runoff Control System,
 - (iii) pollution abatement equipment, and
 - (iv) monitoring equipment;

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- (b) a summary of the operations of the Industrial Wastewater and Industrial Runoff Control Systems, including but limited to:
 - (i) a description of any modification or improvement to the Industrial Wastewater Control System,
 - (ii) a description of any modification or improvement to the Industrial Runoff Control System, and
 - (iii) a description of major equipment repairs and maintenance work;
- (c) a summary assessment of management and disposal of industrial wastewater;
- (d) a summary assessment of management and disposal of industrial runoff;
- (e) a month-by-month summary of the results of the monitoring required in TABLE 4.2-B;
- (f) an summary assessment of the monitoring results relative to the limits in TABLE 4.2-A;
- (g) a summary of the:
 - (i) major updates to the *Storm Water Pond Liner Maintenance Plan* referred to in 4.2.15, and
 - (ii) major preventative measures taken to ensure the integrity of the Storm Water Pond liner;
- (h) a summary of contraventions reported pursuant to 2.1.1; and
- (i) any other information as required in writing by the Director.

STORM WATER POND LINER MAINTENANCE PLAN

4.2.15 The approval holder shall:

- (a) develop;
- (b) keep up-to-date; and
- (c) implement

a *Storm Water Pond Liner Maintenance Plan* on or before January 1, 2011, unless otherwise authorized in writing by the Director.

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- 4.2.16 The *Storm Water Pond Liner Maintenance Plan* referred to in 4.2.15 shall include, at a minimum, all of the following:
- (a) objectives of the *Storm Water Pond Liner Maintenance Plan*;
 - (b) preventative maintenance measures for ensuring the integrity of the Storm Water Pond liner;
 - (c) methodologies for verifying the integrity of the Storm Water Pond liner to meet permeability requirement of 10^{-9} m/s or less;
 - (d) frequency for verifying the integrity of the Storm Water Pond liner;
 - (e) methods for restoring the integrity of the Storm Water Pond liner should the liner be verified to fail the permeability requirement in (c);
 - (f) timelines for restoring the integrity of the Storm Water Pond liner should the liner be verified to fail the permeability requirement in (c); and
 - (g) emergency response plan should the Storm Water Pond liner be verified to fail the permeability requirement in (c).
- 4.2.17 The approval holder shall:
- (a) keep a copy of the *Storm Water Pond Liner Maintenance Plan* referred to in 4.2.15 at the plant; and
 - (b) make the plan available for review by the Director upon request.
- 4.2.18 The approval holder shall include a summary of:
- (a) major updates to the *Storm Water Pond Liner Maintenance Plan* referred to in 4.2.15; and
 - (b) major preventative measures taken to ensure the integrity of the Storm Water Pond liner

in the Annual Industrial Wastewater and Industrial Runoff Report.

INDUSTRIAL RUNOFF DRAINAGE IMPROVEMENT

- 4.2.19 The approval holder shall submit an Industrial Runoff Drainage Survey Report to the Director on or before December 31, 2010.

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- 4.2.20 The Industrial Runoff Drainage Survey Report referred to in 4.2.19 shall include, at a minimum, all of the following:
- (a) objectives of the industrial runoff drainage survey;
 - (b) methodologies of the survey;
 - (c) results of the survey;
 - (d) discussion of the survey results assessing the need for industrial runoff drainage improvement;
 - (e) if the results of the survey reveal that all industrial runoff from the plant developed areas is not collected and directed to the Storm Water Pond:
 - (i) a proposed *Industrial Runoff Drainage Improvement Plan* to ensure that all industrial runoff from the plant developed areas is:
 - (A) collected, and
 - (B) directedto the Storm Water Pond; and
 - (ii) timeline for implementing the *Industrial Runoff Drainage Improvement Plan*.
- 4.2.21 If the Industrial Runoff Drainage Survey Report is found deficient by the Director, the approval holder shall correct all deficiencies as outlined in writing by the Director within the timeline specified in writing by the Director.
- 4.2.22 If the *Industrial Runoff Drainage Improvement Plan* is required in accordance with 4.2.20 (e), the approval holder shall implement the *Industrial Runoff Drainage Improvement Plan* as authorized in writing by the Director.

SECTION 4.3: WASTE MANAGEMENT

OPERATIONS

- 4.3.1 The approval holder shall dispose of waste generated at the plant only:
- (a) to facilities holding a current Act authorization;
 - (b) to facilities approved by a local environmental authority outside of Alberta; or

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(c) as otherwise approved in writing by the Director.

4.3.2 The approval holder shall not:

(a) release; or

(b) dispose

of any waste to the surrounding environment, except in accordance with 4.3.1.

4.3.3 The approval holder shall not:

(a) receive; or

(b) store

any third party waste at the plant.

4.3.4 The approval holder shall:

(a) treat; and

(b) store

waste generated at the plant in accordance with this approval.

4.3.5 The approval holder shall store hazardous waste or hazardous recyclables stored in containers or tanks in accordance with the *Hazardous Waste Storage Guidelines*, June 1988, Alberta Environment, as amended.

4.3.6 The approval holder shall not:

(a) transfer;

(b) treat; or

(c) store

waste or recyclables in an amount or in a manner that will cause or may cause an adverse effect on human health or the environment.

4.3.7 The approval holder shall not:

(a) treat; or

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(b) store

waste or recyclables in an amount or in a manner that causes or may cause:

- (i) fire,
- (ii) explosion,
- (iii) violent reaction,
- (iv) emission of toxic dust, mist, fumes or gases, or
- (v) emission of flammable fumes or gases.

4.3.8 The approval holder shall store waste generated at the plant only in the waste storage area.

4.3.9 The approval holder shall:

- (a) provide and maintain an adequate aisle space between containers in the waste storage area to allow:
 - (i) inspection, and
 - (ii) unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment to any area of the waste storage area; and
- (b) arrange inspection aisles in the waste storage area such that the identification label on each container is readable.

4.3.10 The approval holder shall prevent incompatible waste from direct contact with one another.

MONITORING

4.3.11 Prior to the consignment or storage of any waste generated at the plant, the approval holder shall:

- (a) identify;
- (b) characterize; and
- (c) classify

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the waste, including waste for deep well disposal but not including industrial runoff and air effluent streams, in accordance with the:

- (i) *Industrial Waste Identification and Management Options*, Alberta Environment, May 1996, as amended, and
- (ii) the *Alberta User Guide for Waste Managers*, Alberta Environment, August 1996, as amended.

- 4.3.12 The approval holder shall measure or, when not practical to measure, estimate the quantity of waste generated at the plant each year.
- 4.3.13 The approval holder shall maintain a monthly inventory of waste stored in the waste storage area.
- 4.3.14 The approval holder shall submit a copy of the monthly inventory required in 4.3.13 when requested by the Director.

REPORTING

- 4.3.15 The approval holder shall compile all the information required by 4.3.12 and 4.3.13 in an Annual Waste Management Summary Report:
 - (a) as indicated in TABLE 4.3-A; and
 - (b) in accordance with the:
 - (i) *Industrial Waste Identification and Management Options*, Alberta Environment, May 1996 as amended, and
 - (ii) *Alberta User Guide for Waste Managers*, Alberta Environment, August 1996, as amended.

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TABLE 4.3-A: ANNUAL WASTE MANAGEMENT SUMMARY

Waste Name	Uniform Waste Code				Quantity (kg or L)		Stored	Recycled		Disposed	
	WC	PIN	Class	Mgmt	Hazardous	Non-hazardous	On-site	On-site	Off-site	On-site	Off-site
TOTAL											

4.3.16 The approval holder shall submit the Annual Waste Management Summary Report to the Director.

WASTE MINIMIZATION

4.3.17 The approval holder shall:

- (a) develop;
- (b) keep up-to-date; and
- (c) implement

a *Waste Minimization Plan* at the plant on or before January 1, 2011, unless otherwise authorized in writing by the Director.

4.3.18 The *Waste Minimization Plan* referred to in 4.3.17 shall include, at a minimum, all of the following:

- (a) objectives of the *Waste Minimization Plan*;
- (b) characterization of the lime kiln dust and clarifier sludge;
- (c) identification of environmentally sound beneficial uses of the lime kiln dust and clarifier sludge; and
- (d) timelines for implementation of waste minimization through environmentally sound beneficial uses of the lime kiln dust and clarifier sludge.

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4.3.19 The approval holder shall:

- (a) keep a copy of the *Waste Minimization Plan* at the plant; and
- (b) make the *Waste Minimization Plan* available for review by the Director upon request.

4.3.20 The approval holder shall include a summary of:

- (a) major updates to the *Waste Minimization Plan*; and
- (b) major waste minimization activities completed in accordance with the *Waste Minimization Plan*

in the Annual Waste Management Summary Report.

SECTION 4.4: DOMESTIC WASTEWATER

OPERATION

4.4.1 The approval holder shall not release any substances from the domestic wastewater system to the surrounding watershed except as authorized by this approval.

4.4.2 The approval holder shall direct all domestic wastewater to the domestic wastewater system.

4.4.3 The approval holder shall dispose of domestic wastewater only:

- (a) to facilities holding a current Approval, Registration or as otherwise authorized under the Act; or
- (b) as otherwise authorized in writing by the Director.

4.4.4 The approval holder shall dispose of sludge from the domestic wastewater system only:

- (a) to facilities holding a current Approval, Registration or as otherwise authorized under the Act; or
- (b) as otherwise authorized in writing by the Director.

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SECTION 4.5: GROUNDWATER

- 4.5.1 The approval holder shall monitor groundwater at the plant in accordance with:
- (a) this approval and the latest edition of the Annual Groundwater Monitoring Program Summary Report, and
 - (b) unless otherwise authorized in writing by the Director.
- 4.5.2 The approval holder shall:
- (a) protect from damage; and
 - (b) keep locked except when being sampled
- all groundwater monitoring wells unless otherwise authorized in writing by the Director.
- 4.5.3 If a representative groundwater sample cannot be collected because the groundwater monitoring well is damaged or is no longer capable of producing a representative groundwater sample, the approval holder shall:
- (a) clean, repair or replace the groundwater monitoring well; and
 - (b) collect and analyse a representative groundwater sample prior to the next scheduled sampling event
- unless otherwise authorized in writing by the Director.
- 4.5.4 In addition to the sampling information recorded in 2.2.1, the approval holder shall record the following sampling information for all groundwater samples collected:
- (a) a description of purging and sampling procedures;
 - (b) the static elevations above sea level, and depth below ground surface, of fluid phases in the groundwater monitoring well prior to purging;
 - (c) the temperature of each sample at the time of sampling;
 - (d) the pH of each sample at the time of sampling; and
 - (e) the specific conductance of each sample at the time of sampling.

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- 4.5.5 The approval holder shall compile a Groundwater Monitoring Report which shall include, at a minimum, all of the following information:
- (a) a completed *Record of Site Condition Form*, Alberta Environment, 2009, as amended;
 - (b) a legal land description of the plant and a map illustrating the plant boundaries;
 - (c) a topographic map of the plant;
 - (d) a description of the industrial activity and processes;
 - (e) a map showing the location of all surface and groundwater users, and, a listing describing surface water and water well use details, within at least a five kilometre radius of the plant;
 - (f) a general hydrogeological characterization of the region within a five kilometre radius of the plant;
 - (g) a detailed hydrogeological characterization of the plant; including an interpretation of groundwater flow patterns;
 - (h) a cross-section(s) showing depth to water table, patterns of groundwater movement and hydraulic gradients at the plant;
 - (i) borehole logs and completion details for groundwater monitoring wells;
 - (j) a map showing locations of all known buried channels within at least five kilometre of the plant;
 - (k) a map of surface drainage within the plant and surrounding area to include nearby waterbodies;
 - (l) a map of groundwater monitoring well locations and a table summarizing the existing groundwater monitoring program for the plant;
 - (m) a summary of any changes to the groundwater monitoring program made since the last groundwater monitoring report;
 - (n) analytical data recorded as required in 4.6.1 and 4.6.3 (b);
 - (o) a summary of fluid elevations recorded as required in 4.6.4 (b) and an interpretation of changes in fluid elevations;

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- (p) an interpretation of QA/QC program results;
- (q) an interpretation of all the data in this report, including the following:
 - (i) diagrams indicating the location and extent of any contamination,
 - (ii) a description of probable sources of contamination, and
 - (iii) a site map showing the location and type of current and historical potential sources of groundwater contamination;
- (r) a summary and interpretation of the data collected since the groundwater monitoring program began including:
 - (i) control charts which indicate trends in concentrations of parameters, and
 - (ii) the migration of contaminants;
- (s) a description of the following:
 - (i) contaminated groundwater remediation techniques employed,
 - (ii) source elimination measures employed,
 - (iii) risk assessment studies undertaken, and
 - (iv) risk management studies undertaken;
- (t) a proposed sampling schedule for the following year(s);
- (u) a description of any contaminant remediation, risk assessment or risk management action conducted at the plant; and
- (v) recommendations for changes to the groundwater monitoring program to make it more effective.

4.5.6 If the Groundwater Monitoring Report is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director, within the timeline specified in writing by the Director.

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PART 5: DECOMMISSIONING AND LAND RECLAMATION

SECTION 5.1: GENERAL

5.1.1 The approval holder shall apply for an amendment to this approval to reclaim the plant by submitting a:

- (a) Decommissioning Plan; and
- (b) Land Reclamation Plan

to the Director.

5.1.2 The approval holder shall submit the:

- (a) Decommissioning Plan; and
- (b) Land Reclamation Plan

referred to in 5.1.1 within six months of the plant ceasing operation, except for repairs and maintenance, unless otherwise authorized in writing by the Director.

SECTION 5.2: DECOMMISSIONING

5.2.1 The Decommissioning Plan referred to in 5.1.1 shall include, at a minimum, all of the following:

- (a) a plan for dismantling the plant;
- (b) a comprehensive study to determine the nature, degree and extent of contamination at the plant and affected lands;
- (c) a plan to manage all wastes at the plant;
- (d) evaluation of remediation technologies proposed to be used at the plant and affected lands;
- (e) a plan for decontamination of the plant and affected lands in accordance with the following:
 - (i) for soil or groundwater, *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, Alberta Environment, February 2009, as amended,

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- (ii) for soil or groundwater, *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*, Alberta Environment, February 2009, as amended,
- (iii) for drinking water, *Canadian Environmental Quality Guidelines*, Canadian Council of Ministers of the Environment, PN 1299, 1999, as amended, and
- (iv) for surface water, *Surface Water Quality Guidelines for Use in Alberta*, Alberta Environment, November 1999, as amended;
- (f) confirmatory testing to indicate compliance with the remediation objectives;
- (g) a plan for maintaining and operating contaminant monitoring systems;
- (h) a schedule for activities (a) through (g) above; and
- (i) any other information as required in writing by the Director.

5.2.2 If the Decommissioning Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

SECTION 5.3: LAND RECLAMATION

5.3.1 The Land Reclamation Plan referred to in 5.1.1 shall include, at a minimum, all of the following:


- (a) the final use of the reclaimed area and how equivalent land capability will be achieved;
- (b) removal of infrastructure;
- (c) restoration of drainage;
- (d) soil replacement;
- (e) erosion control;
- (f) revegetation and conditioning of the plant including:
 - (i) species list, seed source and quality, seeding rates and methods,
 - (ii) fertilization rates and methods, and

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- (iii) wildlife habitat plans where applicable;
- (g) reclamation sequence and schedule; and
- (h) any other information as required in writing by the Director.

5.3.2 If the Land Reclamation Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the deadline specified in writing by the Director.

DATE: _____
 May 31, 2010



DESIGNATED DIRECTOR UNDER THE ACT
BROCK RUSH, M.ENG., P.ENG.