

APPROVAL

**Province of Nova Scotia
Environment Act, S.N.S. 1994-95, c.1 s.1**

APPROVAL HOLDER: KAMERON COAL MANAGEMENT LIMITED

SITE PID: 15496326

APPROVAL NO: 2009-066677-03

EXPIRY DATE: December 5, 2022

Pursuant to Part V of the *Environment Act*, S.N.S. 1994-95, c.1 s.1 as amended from time to time, approval is granted to the Approval Holder subject to the Terms and Conditions attached to and forming part of this Approval, for the following activity:

Industrial - Minerals - Underground Mine



Administrator: Mark P. Farrell

Effective Date: August 8, 2017

The Minister's powers and responsibilities under the Act with respect to this Approval have been delegated to the Administrator named above. Therefore, any information or notifications required to be provided to the Minister under this Approval can be provided to the Administrator unless otherwise advised in writing.

TERMS AND CONDITIONS OF APPROVAL

Nova Scotia Environment

Approval Holder: KAMERON COAL MANAGEMENT LIMITED

Project: Donkin Mines Site

Site:

PID	Civic #	Street Name	Street Type	Community	County
15496326				Donkin	Cape Breton

Approval No: 2009-066677-03

File No: 92100-30-SYD-2009-066677

Reference Documents

- Application submitted March 9, 2017 and attachments.

1. Definitions

- a. Act means Environment Act, Chapter 1 of the Acts of 1994-95, and includes, unless the context otherwise requires, all regulations made pursuant to the Act.
- b. Active Area means the area required to operate the approved designated activity and includes the working face and associated works.
- c. Administrator means a person appointed by the Minister for the purpose of this Act, and includes an acting administrator.
- d. Approval means an Approval issued pursuant to this Act with respect to an activity.
- e. Associated Works means any building, machinery, equipment, device, tank, system, stockpile, or other related infrastructure.
- f. Department means the Department of Environment, and the contact for the Department for this approval is:
Nova Scotia Environment
Eastern Region, Sydney Office
1030 Upper Prince Street, Suite 2
Sydney, Nova Scotia B1P 5P6

Phone: (902) 563-2100

Fax: (902) 563-2387

- g. Disturbed Area means any area on the site of the approved designated activity that has been stripped of vegetation and is susceptible to erosion.
- h. Extension means an increase in size, volume or other physical dimensions of an activity such that the increase may cause an adverse effect if not properly mitigated.
- i. Facility means the Underground Mine and associated works.
- j. Grab sample means an individual sample collected in less than 30 minutes and which is representative of the substance sampled.
- k. Minister means the Minister of Environment and includes any person appointed as a designate of the Minister.
- l. Modification means a change to an activity that may cause an adverse effect if not properly mitigated and includes, but is not limited to, the expansion of the same process, addition of product lines and replacement of equipment with different technology other than that presently in use.
- m. Reclamation means work performed or to be performed in accordance with an authorized plan, and includes rehabilitation of a site or facility.
- n. Site means the lands where an activity or proposed activity will take place.
- o. Standard means a standard, policy, code, guideline, protocol or other rule in relation to a designated activity that, by reason of its establishment or adoption by regulation or as a condition of an approval or certificate of qualification, becomes a mandatory requirement for participation in that designated activity.
- p. Structure includes but is not limited to a private home, a cottage, an apartment building, a school, a church, a commercial building or a treatment facility associated with the treatment of municipal sewage, industrial or landfill effluent, an industrial building, infrastructure or construction, a hospital, and a nursing home, etc.
- q. Water Resource means all fresh and marine waters comprising all surface water, groundwater, and coastal water.
- r. Watercourse means the bed and shore of every river, stream, lake, creek, pond, spring, lagoon or other natural body of water, and the water therein, within the jurisdiction of the Province, whether it contains water or not, and all groundwater.
- s. Wetland means land commonly referred to as marsh, swamp, fen or bog that either periodically or permanently has a water table at, near or above the land's surface or that is saturated with water, and sustains aquatic processes as

indicated by the presence of poorly drained soils, hydrophytic vegetation and biological activities adapted to wet conditions.

- t. Abandonment means cessation of production of coal for a period of twelve (12) months, unless authorized by the Minister.

2. Scope

- a. This Approval (the "Approval") relates to the Approval Holder, the application, and supporting documentation, as listed in the reference documents above, to construct, operate and reclaim the Facility, situated at or near 750 Long Beach Road, Donkin, Cape Breton County (the "Site") which is authorized under the Terms and Conditions of this Approval to:
 - i) Extract up to 3.6 million tonnes of coal per year from the underground coal mining operation
 - ii) Operate a coal handling and processing plant
 - iii) Operate a coal and mineral rock waste disposal and water treatment infrastructure
 - iv) Transport coal to domestic customers and the Port of Sydney in accordance with an approved Transportation Plan
- b. The Site and/or Facility shall not exceed the area as outlined in the application and supporting documentation.
- c. The following PIDs are included in the Site: 15496326, 15277106, 15496334, 15496292, 15496342, 15496300, 15277072, 15496318
- d. It is the Approval Holder's responsibility to ensure applicable legislation, approvals and codes of practice are met for all other aspects of the operation of the Facility.

3. General

- a. The Approval Holder(s) shall construct, operate and reclaim the Facility in accordance with the following provisions:
 - i. Environment Act S.N.S. 1994-1995, c.1, s.1 as amended from time to time
 - ii. Regulations pursuant to the above Act, as amended from time to time
- b. No authority is granted by this Approval to enable the Approval Holder(s) to construct or operate the Facility on lands which are not in the control or ownership of the Approval Holder(s). It is the responsibility of the Approval Holder(s) to ensure that such a contravention does not occur.

- c. If there is a discrepancy between the reference documents and the terms and conditions of this Approval, the terms and conditions of this Approval shall apply.
- d. Any request for renewal or extension of this Approval is to be made in writing, to the Department, at least ninety (90) days prior to the Approval expiry.
- e. The Minister may modify, amend or add conditions to this Approval at any time pursuant to Section 58 of the Act.
- f. This Approval is not transferable without the consent of the Minister.
- g. The Approval Holder(s) shall notify the Department prior to any proposed extensions or modifications to the Facility, including, but not limited to, the active area, operating area, processing changes or waste disposal practices which are not granted under this Approval. An amendment to this Approval may be required before implementing any change.
- h. Extensions or modifications to the Facility may be subject to the Environmental Assessment Regulations. Written approval from the Minister may be required before implementing a change.
- i. Pursuant to Section 60 of the Act, the Approval Holder(s) shall submit to the Minister any new and relevant information respecting any adverse effect that actually results, or may potentially result, from any activity to which the Approval relates and that comes to the attention of the Approval Holder(s) after the issuance of the Approval.
- j. The Approval Holder(s) shall immediately notify the Department of any incidents of non-compliance with this Approval.
- k. The Approval Holder(s) shall bear all expenses incurred in carrying out the environmental monitoring required under the terms and conditions of this Approval.
- l. Unless specified otherwise in this Approval, all samples required to be collected by this Approval shall be collected, preserved and analysed, by qualified personnel, in accordance with recognized industry standards and procedures.
- m. Unless written authorization is received otherwise from the Minister, all samples required by this Approval shall be analysed by a laboratory that meets the requirements of the Department's Policy on Acceptable Certification of Laboratories as amended from time to time.
- n. The Approval Holder(s) shall ensure that this Approval, or a copy, is kept on Site at all times and that personnel directly involved in the Facility operation are made fully aware of the terms and conditions which pertain to this Approval.
- o. Upon any changes to the Registry of Joint Stock Companies information, the

Approval Holder(s) shall provide a copy to the Department.

- p. If the Minister determines that there has been non-compliance with any or all of the terms and conditions contained in this Approval, the Minister may cancel or suspend the Approval pursuant to subsections 58A(1) and 58A(2) of the Act, until such time as the Minister is satisfied that all terms and conditions have been met.
- q. If the Minister cancels or suspends this Approval, the Approval Holder remains subject to the penalty provisions of the Act and regulations.

4. Sound Levels

- a. Sound levels measured at the Site property boundaries shall not exceed the following equivalent sound levels (Leq):
 - i. 65 dBA 0700-1900 hours
 - ii. 60 dBA 1900-2300 hours
 - iii. 55 dBA 2300-0700 hours
- b. Monitoring of sound levels shall be conducted at the request of the Department. The location of the monitoring station(s) for sound will be established by a qualified person retained by the Approval Holder(s) and submitted to the Department for approval, this may include point(s) beyond the property boundary of the Site.

5. Separation Distances

- a. The Approval Holder(s) shall not locate the Active Area of the Site within the following separation distances unless otherwise exempted or varied by conditions of this approval:
 - i. 30 m of the boundary of a public or common highway
 - ii. 30 m of the bank or ordinary high water mark of any watercourse or wetland
 - iii. 30 m of the property boundary that does not form part of the Site Active Area

6. Particulate Emissions (Dust)

- a. Particulate emissions shall not contribute to an ambient concentration of total suspended particulate matter that exceed the following limits (in micrograms per cubic metre of air) at or beyond the Site property boundaries:
 - i. Daily Average (24 hr.) 120 μ /m³
 - ii. Annual Geometric Mean 70 μ /m³

- b. The use of oil as a dust suppressant is prohibited.
- c. Monitoring of ambient total suspended particulate matter shall be conducted at the request of the Department. The location of the monitoring station(s) for suspended particulate matter will be established by a qualified person retained by the Approval Holder(s) and submitted to the Department for approval; this may include point(s) beyond the property boundary of the Site.
- d. When requested, ambient total suspended particulate matter shall be measured in accordance with EPA standard; EPA/625/R-96/010a; Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 shall be done using a High Volume (HV) Sampler.

7. Surface Water

- a. The Approval Holder shall ensure that the Site surface water is monitored in accordance with Surface Water Monitoring Program identified in Table 1.
- b. The Department reserves the right to require modifications to the Surface Water Monitoring Program including, but not limited to, monitoring locations, monitoring frequency, contaminants of concern, and surface water criteria.
- c. No authority is granted by this Approval to enable the Approval Holder to discharge surface water onto adjoining lands without the authorization of the affected landowner(s). It is the responsibility of the Approval Holder to ensure authorizations are current and valid.
- d. All surface water runoff that may be impacted by petroleum hydrocarbons from the Site shall be collected and directed to an oil/water separator for treatment prior to discharge.
- e. The Approval Holder shall collect and treat all formation water and surface water runoff from the site through the appropriate construction of perimeter ditching, settling ponds and wastewater treatment systems.
- f. The Approval Holder shall conduct fish toxicity testing at surface water monitoring station MP-4 in accordance with the Surface Water Monitoring Program referred to in Table 1 using test method EPS1/RM/13 for salinity levels below 10 ppt or test method EPS1/RM/10 for salinity levels greater than 10 ppt. The Approval Holder shall notify the Department immediately of any failures to this test.
- g. Upon a failed fish toxicity test, the proponent shall immediately cease to discharge water from the Site and shall submit to the Department for approval an action plan to address water quality issues. The action plan shall include recommendations for additional fish toxicity testing. No discharge from the Site will be permitted by the Department until an acceptable fish toxicity test result is achieved.

- h. The Approval Holder shall be required to implement remedial measures, as necessary and/or as directed by the Department, to address surface water contamination.

8. Environmental Management Plan

- a. The Approval Holder shall develop and maintain an Environmental Management/Protection Plan document that shall include, but not be limited to: process and site description, environmental controls, groundwater and surface water monitoring requirements and a Contingency Plan in accordance with the Department's "Contingency Planning Guidelines".
- b. The Facility shall be operated in accordance with this Approval and the Environmental Management/Protection Plan
- c. The Environmental Management/Protection Plan shall be made available to the Department upon request.
- d. The Department reserves the right to require modifications to the Environmental Management/Protection Plan at any time.
- e. The Approval Holder shall review the Environmental Management/Protection Plan annually, when process changes are made, and when there are changes to legislation which may warrant plan revisions.
- f. Dates of reviews, modifications and reasons for any modifications shall be recorded within the Environmental Management/Protection Plan.

9. Groundwater

- a. The Approval Holder shall ensure that the Site groundwater is monitored in accordance with Groundwater Monitoring Program identified in Table 2.
- b. The Approval Holder shall replace at their expense any water supply which has been lost or damaged as a result of the activity.
- c. The Approval Holder shall notify the Department prior to excavating below the water table in relation to the land based activities. An amendment to this Approval and/or written authorization from the Minister may be required before excavating below the water table.
- d. The Approval Holder shall be required to implement remedial measures, as necessary and/or as directed by the Department, to address groundwater contamination.
- e. The Department reserves the right to require modifications to the Groundwater Monitoring Program including, but not limited to, monitoring locations, monitoring frequency, contaminants of concern, and surface water criteria.

10. Sludge Disposal

- a. Removal and disposal of sludge/sediment from the Serpentine Pond, ADM Treatment Pond, and/or the Refuse Sediment Pond shall be performed in accordance with a Sludge Management Plan pre-approved by the Department.
- b. Changes to the Sludge Management Plan shall be submitted in writing for review and approval prior to implementation.

11. Construction

- a. Erosion and sedimentation controls are to be in place prior to construction at this facility. Additional controls shall be implemented if Site runoff exceeds the discharge limits contained herein.
- b. Erosion and sedimentation controls are to be maintained and remain in place until the disturbed areas are stabilized.

12. Reporting

- a. The Approval Holder shall submit an Annual Report to the Department by April 1st of each year and shall include a summary of activities in relation to the previous calendar year. Reporting requirements for the Annual Report shall include, as a minimum, that which is listed in the remainder of the Reporting section of the Approval.
 - i) a summary of the Air Quality Monitoring performed. The report shall be prepared by a qualified individual and shall include an interpretation of the results. The Department may require additional air quality monitoring based on the results.
 - ii) a summary of the Groundwater Monitoring performed. The summary shall be prepared by a qualified individual and shall include interpretation of the results by a Professional Engineer or a Professional Geo-scientist. The summary shall include, as a minimum:
 - a description of the groundwater monitoring network, including an up-to-date site plan
 - monitoring well logs and decommissioning logs, as applicable
 - a review of the current groundwater monitoring program and recommendations for modifications, as applicable
 - current and historical static water elevation data in tabular format

- current and historical groundwater quality data in tabular format; data shall be compared to the reference criteria and exceedances highlighted
 - a detailed interpretation of the groundwater quality data including an analysis of spatial and temporal trends with comparison to reference criteria and historical (baseline) data.
- iii) a summary of the Surface Water Monitoring performed. The summary shall be prepared by a qualified individual and shall include interpretation of the results by a Professional Engineer or a Professional Geo-scientist. The summary shall include, as a minimum:
- a description of the surface water monitoring network , including an up-to-date site plan
 - a review of the current surface water monitoring program and recommendations for modifications, as applicable
 - current and historical surface water quality data in tabular format; data shall be compared to the reference criteria with exceedances highlighted
 - a detailed interpretation of the surface water quality data, including an analysis of spatial and temporal trends, in comparison to the reference criteria and historical (baseline) data.
- iv) a quantity (in tonnes) of raw coal extracted from the mine.
- v) a quantity (in tonnes) of raw coal processed through the coal handling and processing plant.
- vi) a quantity (in tonnes) of waste rock disposed of at the waste rock disposal site
- vii) a summary of complaints received for the activity including corrective action taken to address complaints, where necessary.
- ix) a summary of recommended changes to the Environmental Management /Protection Plan and Contingency Plan.

13. Spills or Releases

- a. All spills or releases shall be reported to the Department in accordance with the reporting provisions of the Act, the Environmental Emergency Regulations, and the Contaminated Sites Regulations and Protocols.
- b. Spills or releases shall be assessed and remediated in accordance with the Act and the Contaminated Sites Regulations and Protocols.

14. Site Specific Conditions

- a. The Approval Holder shall construct and operate the Coal Handling and Preparation Plant in accordance with the Coal Handling and Preparation Plant Facility Description and related drawings.
- b. The Approval Holder shall construct and operate the Coal Refuse Facility/Waste Rock Disposal Area in accordance with the Kameron Coal Management Limited Coal Refuse Facility Description, the Proposed Refuse Disposal Plan, and related drawings.
- c. The Approval Holder shall provide an updated Transportation Plan for the activity reflecting the current plan for the primary method for transportation of coal to domestic customers and the Port of Sydney. The Transportation Plan shall be submitted to the Department for review not later than January 8, 2018.
- d. Signage including emergency telephone numbers and contacts are to be posted at the entrance to the Facility.
- e. Current versions of all reference documents and related drawings, including the following, shall be submitted to the Department for review and approval not later than October 16, 2017:
 - Coal Refuse Facility
 - Coal Handling and Preparation Plant Facility Description
 - Coal Waste Management
 - Donkin Mine Environmental Protection Plan
 - Surface Water and Groundwater Monitoring Plan
 - Air Quality Management Plan
 - Environmental Contingency Plan
 - Waste Management Plan
 - Donkin Mine Conceptual Closure and Reclamation Plan
 - Complaint Management Procedure
- f. Prior to extraction of 0.5 million tonnes of coal, the Approval Holder shall submit to the Department for review and approval a Green House Gas Management Plan. The Green House Gas Management Plan shall be implemented upon

approval.

- g. The Approval Holder must provide, when requested by the Department, records of Community Liaison Committee activity including meeting minutes, complaints and associated actions.

15. Air Quality

- a. The Approval Holder shall ensure that the Site is monitoring for air quality in accordance with Air Quality Monitoring Plan - Phase II Operations which is included as an appendix in the Donkin Mine Environmental Protection Plan.
- b. The Approval Holder shall report any exceedances to the Air Quality Monitoring Program to the Department immediately and shall take timely action to investigate and address the source of the exceedance.
- c. All trucks transporting coal from the site shall be free of loose debris prior to leaving the Site and covered with fitted tarps to minimize the release of dust.
- d. Coal stockpiles, waste rock and topsoil stockpiles shall be stabilized with vegetation or by other suitable means to minimize fugitive dust emissions.

16. Reclamation & Financial Security

- a. The Approval Holder shall maintain financial security in a amount and form acceptable to the Nova Scotia Department of Natural Resources and Nova Scotia Environment.
- b. The financial security shall be calculated based on the Donkin Mine Conceptual Closure and Reclamation Plan Updated for Phase II (Production) Mining Activities.
- c. The reclamation/financial security shall be revised every three years in accordance with a Revised Reclamation Plan.
- d. The Approval Holder shall submit a Revised Reclamation Plan 90 days prior to cessation of coal extraction operations.
- e. The Approval Holder shall reclaim the Site within twelve (12) months of site abandonment and in accordance with the latest Reclamation Plan submitted by the Approval Holder, and/or other terms as specified by the Department.
- f. The Approval Holder shall notify the Department when reclamation has been completed.
- g. The release of the financial security shall be subject to review of the reclamation of the Site by both Nova Scotia Department of Natural Resources and Nova Scotia Environment.

- h. The Approval Holder shall grant Nova Scotia Environment full access to the financial security held by Nova Scotia Department of Natural Resources, this shall be to address reclamation issues, acidic water generation, or other environmental concerns.
- i. The Approval Holder shall ensure that any financial security posted for rehabilitation be kept valid for the term of the Approval.

Table 1**SURFACE WATER MONITORING PROGRAM - SAMPLING FREQUENCY, PARAMETERS AND CRITERIA**

**Kameron Coal Management Limited
Donkin Mine, Cape Breton County, NS**

Parameter	Sampling Station ID							
	Surface Water							
	MP-1	MP-3	MP-4	MP-7	MP-8	BW-1	BW-2	BW-3
Field Measurements **								
Flow	-	SM	M	SM	-	-	-	-
pH	M	SM	M	SM	Variable	SA	SA	SA
Specific Conductivity	M	SM	M	SM	-	SA	SA	SA
Temperature	M	SM	M	SM	-	SA	SA	SA
Dissolved Oxygen	M	SM	M	SM	-	SA	SA	SA
Water Level	-	-	-	-	-	-	-	-
Laboratory Analysis								
96-Hour Fish Toxicity	-	-	SA	-	-	-	-	-
Total Suspended Solids (TSS)	M	SM	M	-	-	SA	SA	SA
General Chemistry	M	-	-	SM	-	-	-	-
Metals (incl. Mercury)	M	SM	M	SM	-	SA	SA	SA
Polyaromatic Hydrocarbons (PAHs)	M	-	M*	SM	-	-	-	-
Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Thiosalts	-	-	M	-	-	-	-	-
Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)	M	-	M*	-	-	*SA	*SA	*SA

Notes:

'**' indicates parameters analyzed for the frequency indicated only if detected in MP1 or MP7 in a previous sampling event

*** Criteria - Unless otherwise stated, results to be compared to applicable CCME Water Quality Guidelines for Protection of Aquatic Life and/or baseline conditions typical of monitoring location prior to January 1, 2017. However, pH shall be between 6.5 and 9.0

MP-8 to be monitored for pH at the discretion of KCML for purposes of treatment system adjustments and shall be between 6.5 and 9.0

SM = Semi-Monthly (twice a month), M = Monthly, SA = Semi-Annually (twice a year)

Table 2

**GROUNDWATER MONITORING PROGRAM - SAMPLING
FREQUENCY, PARAMETERS AND CRITERIA**

Kameron Coal Management Limited

Donkin Mine, Cape Breton County, NS

Parameter	Sampling Station ID								
	Groundwater								
	MW9-17	MW2-04	MW10-17	MW8-04	MW11-17	MW12-17	MW13-17	MW14-17	MW15-17
Field Measurements									
Flow	-	-	-	-	-	-	-	-	-
pH	SA	SA	SA	SA	SA	SA	SA	SA	SA
Specific Conductivity	SA	SA	SA	SA	SA	SA	SA	SA	SA
Temperature	SA	SA	SA	SA	SA	SA	SA	SA	SA
Dissolved Oxygen	SA	SA	SA	SA	SA	SA	SA	SA	SA
Water Level	SA	SA	SA	SA	SA	SA	SA	SA	SA
Laboratory Analysis									
Total Suspended Solids (TSS)	SA	SA	SA	SA	SA	SA	SA	SA	SA
General Chemistry	SA	SA	SA	SA	SA	SA	SA	SA	SA
Metals (incl. Mercury)	SA	SA	SA	SA	SA	SA	SA	SA	SA
Polyaromatic Hydrocarbons (PAHs)	SA	SA	SA	SA	SA	SA	SA	SA	SA
Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Thiosalts	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (TPH)	SA	SA	SA	SA	-	-	-	-	-
Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)	SA	SA	SA	SA	SA	SA	SA	SA	SA

Notes:

*** Criteria - Unless otherwise stated, results to be compared to applicable CCME Water Quality Guidelines for Protection of Aquatic Life and/or baseline conditions typical of monitoring location prior to January 1, 2017. However, pH shall be between 6.5 and 9.0

SM = Semi-Monthly (twice a month), M = Monthly, SA = Semi-Annually (twice a year)