

**PROVINCE OF SASKATCHEWAN  
MINISTRY OF ENVIRONMENT  
NOTICE OF MINISTERIAL DECISION  
PURSUANT TO SECTION 15  
*THE ENVIRONMENTAL ASSESSMENT ACT***

**YANCOAL CANADA RESOURCES COMPANY LIMITED  
SOUTHEY POTASH MINE PROJECT**

WHEREAS Yancoal Canada Resources Company Limited (hereinafter called "Yancoal"), applied for ministerial approval as required by subsection 8(1) of *The Environmental Assessment Act* (hereinafter called "the Act") to construct and operate a greenfield potash mine 60 kilometres north of Regina, Saskatchewan in the Rural Municipality of Longlaketon (hereinafter called "the development");

AND WHEREAS the Minister of Environment (hereinafter called "the Minister"), gave notice of the assessment to be conducted as required by section 10 of the Act;

AND WHEREAS an environmental impact statement, consisting of a document entitled "Yancoal Southey Project Environmental Impact Statement" dated March 2016 (hereinafter called "the Statement") as required by clause 9(1)(b) of the Act, was submitted to the Minister;

AND WHEREAS the Minister has reviewed the Statement and has made the Statement and review available for public inspection as required by section 11 of the Act;

AND WHEREAS the Minister is satisfied that all the requirements of the Act have been met, including those required of Yancoal;

AND WHEREAS the Minister has concluded the development ought to be approved subject to terms and conditions;

NOW THEREFORE PURSUANT to clause 15(1)(a) of the Act, ministerial approval is hereby given to Yancoal to proceed with the development subject to the following terms and conditions which form part of this ministerial approval:

1. Yancoal shall proceed with the development in the manner described in the Statement except where alterations are required by the subsequent terms and conditions of this approval.
2. Yancoal shall inform the Minister, in the manner described in subsection 16(1) of the Act, of any change to the development that does not conform to the terms and conditions of this approval.

10. Yancoal shall submit an annual report to the Minister prior to March 15 of each year beginning the year following commencement of construction and continuing through decommissioning and reclamation. This report will outline how conditions of this approval have been met and include an updated commitments register showing how all commitments included in the Statement are being met.
11. The development must commence within five years of the issuance date of this Approval. If it has not commenced within five years of the issuance date of this Approval, the Minister shall give Yancoal 30 days to rectify the breach or to make representations as to why an extension of the five-year time period is warranted. If the breach is not rectified and an extension of time is not granted by the Minister, this Approval expires.
12. This ministerial approval takes effect on the date of signing.

Dated at Saskatoon, Saskatchewan this 9<sup>th</sup> day of August, 2016

ORIGINAL SIGNED BY:

Herb Cox  
Minister of Environment

**REASONS FOR DECISION  
MINISTERIAL APPROVAL  
PURSUANT TO SECTION 15  
*THE ENVIRONMENTAL ASSESSMENT ACT***

**YANCOAL CANADA RESOURCES COMPANY LIMITED  
SOUTHEY POTASH PROJECT**

**Introduction**

*The Environmental Assessment Act* (hereinafter called the Act) states that a person shall not proceed with a development (as defined in the Act), until ministerial approval has been received. It further sets requirements for a process of environmental impact assessment (EIA) intended to inform the Minister of Environment (hereinafter called "the Minister") of the potential impacts of a development prior to making a decision regarding the development.

In February 2015, the Environmental Assessment and Stewardship Branch (EASB) received a project proposal and Terms of Reference (hereinafter called the "Application") from Yancoal Canada Resources Company Limited (hereinafter called "the Proponent", "Yancoal") for the Southey Potash Project (hereinafter called the project). The Proponent subsequently self-declared the proposed project a development as defined in the Act and Yancoal was therefore required to proceed through the EIA process and obtain approval under Section 15 of the Act prior to proceeding with the development.

Public notice of the EIA was given in March 2015 pursuant to Section 10 of the Act. The Proponent submitted an environmental impact statement (EIS) to the EASB seeking approval under clause 15(1) (a) of the Act. The EIS underwent both technical review and an extended 45 day public review. The review process will be discussed in more detail in subsequent sections of this document.

**Background**

The project includes construction and operation of a new potash mine that will produce up to 2.8 million tonnes of potash per year for 100 years. The activities and components associated with the project include potash mining using a solution mining method, operation of a processing plant, surface infrastructure and support facilities,

engagement activities in order to effectively communicate project details to stakeholders and has committed to continue this engagement during subsequent permitting processes and throughout the development of the project.

The public review period for the EIA provided an additional opportunity for the public to review development details and provide comments for consideration in a decision on the project. During the public review period, 809 comments were received. Those submissions in support of the project cited the potential economic benefits of the project. Submissions in opposition expressed various concerns including potential impacts to groundwater; subsidence; water consumption; increased traffic; impacts to soil and surface water quality from salt deposition; and public engagement practices of the company.

During the public review, there were several requests for additional independent review or a public inquiry. Saskatchewan's long history of regulating the potash industry has provided a comprehensive understanding of both the technical issues surrounding potash mining as well as the socio-economic and cultural impacts that can result from this type of project. The well-established regulatory regime at both the provincial and municipal level provides the necessary oversight to ensure potash mines such as the Yancoal project proceed in an environmentally responsible manner and in consideration of socio-economic and cultural issues. Based on these factors, it was determined a public inquiry or additional independent review was not required in order to fully understand potential impacts of the project or identify appropriate mitigation measures.

Yancoal has sought to address public concerns throughout the EIA process and modified engagement practices in response to local interest. The population density in the area and number of residents in proximity to the proposed core facilities area (CFA) has generated concern and opposition by local residents which could not be fully addressed by Yancoal during engagement activities. However, the technical issues raised during public review have been effectively assessed as a part of the EIA process and impacts can be addressed by the commitments of the proponent, through terms and conditions of a ministerial approval under *The Environmental Assessment Act*, or during the subsequent permitting phase of the project. Additionally, many concerns raised by those opposed to the project can be addressed through empowerment of the local government to make important development decisions.

As a condition of approval, Yancoal is required to provide to the ministry a signed "Development Agreement" with the Rural Municipality (RM) of Longlaketon No. 219 prior to the commencement of construction activities for the project. Execution of this agreement, as required by the municipal government, will ensure participation of the RM in the subsequent planning stage of the development and help minimize impacts and maximize benefits for residents in the region.

of the project and the effectiveness of proposed mitigation measures. To improve transparency and encourage continued engagement, Yancoal is required to establish a community monitoring program to facilitate the ongoing involvement of local communities in the development and to present, and make publically available, results of monitoring including those related to groundwater protection. This will help confirm environmental protection measures are functioning appropriately and that the development is being operated in an environmentally-responsible manner.

### *Deep well Injection*

Brine will be disposed of through deep-well injection wells into the Deadwood and Winnipeg formations (approximately 1200 m below surface) to reduce the amount of brine stored in the TMA. Deep well injection is a proven practice used to manage brine at multiple mines and facilities in Saskatchewan. The targeted zones are well separated from fresh water resources and have multiple intervening low permeability layers, which will provide effective containment of the injected brine. The injection wells will be required to include appropriate safeguards and leak-detection systems to help reduce the risks of accidents and prevent any impacts to fresh groundwater resources in the project area. Monitoring will be required to confirm the integrity of wells and ensure they are operating as designed.

Based on information in the EIS, commitments by Yancoal and the additional licence requirements for disposal wells as outlined in *Directive PNG008: Disposal and Injection Well Requirements*, negative impacts to groundwater resulting from the deep well injection of waste brine are not expected to occur.

### *Air Quality and Salt Deposition*

Comments received during the public review period raised concerns related to air quality in the project area and the potential for salt deposition to impact soil and surface water quality. The Industrial Source (Air Quality) Chapter of the Saskatchewan Environmental Code will apply to the project and Yancoal will be required to submit an environmental protection plan for approval and include a description of measures to prevent and mitigate adverse effects to the environment. Yancoal has proposed engineered controls as a part of the project (e.g. baghouses, wet scrubbers, cyclones) which are expected to effectively limit airborne release of particulate matter during the processing of potash. These controls are standard in the potash industry and have been shown to effectively mitigate dust emissions from these facilities.

Waste material will be piped to the TMA in slurry form and once deposited, liquid will drain from the slurry and begin to dry and form a solid crust. Formation of this crust

Buffalo Pound Lake for multiple industrial users, including the volume proposed for the Yancoal project, was assessed and approved in March 2015 under a separate environmental assessment application with SaskWater as the proponent. Maximum water volumes proposed as a part of mining for the Yancoal project (i.e. during initial cavern development) would constitute a small portion of the overall volumes assessed as a part of the SaskWater Buffalo Pound project. This assessment included a rigorous analysis of available historical hydrological data under various climatic conditions and conservative assumptions regarding water volumes to be diverted. Results of the assessment showed that the volumes of water potentially diverted for multiple industrial users, including Yancoal, would not result in significant impacts to water levels in Buffalo Pound Lake or downstream areas.

The Water Security Agency has confirmed the capacity and reliability of Buffalo Pound Lake to supply water to the project sustainably and without significant negative impact to downstream areas. Yancoal will be required to obtain a licence from the Water Security Agency for the volume of water required for the project prior to proceeding. This licence provides Water Security Agency the ability to limit water consumption for any industrial user should water availability change in the future.

Yancoal has committed to preventing surface water from the CFA from interacting with the surrounding natural drainage system during all phases of the project. Although this isolation will result in a minor decrease in runoff reporting downstream of the CFA, it will effectively protect downstream areas from water potentially impacted by the core facilities area and prevent any contamination of aquatic or fish habitat in Loon Creek or other downstream areas such as the Qu'Appelle River or lakes.

### *Subsidence*

Subsidence will likely result in changes to local topography, although the overall effects of ground subsidence are expected to be very gradual and take in excess of 100 years. The modeling results in the EIS indicate subsidence may range up to approximately 6.7 m with a gradual gradient spread over several kilometers. However, no measurable effect to regional groundwater flow patterns or quantities are expected to result. The solution mining method will leave unmined pillars of the existing geological formation between caverns to increase stability during mining and reduce the potential effects of subsidence.

Yancoal will implement a subsidence monitoring and reporting program as well as adaptive management measures should issues be identified during operations and through the decommissioning and reclamation phases of the project. Details of the subsidence monitoring plan will be further developed during the permitting process under *The Environmental Management and Protection Act, 2010* and will be outlined in

Key regulatory oversight by the Ministry of Environment for the project will be provided by approvals issued under *The Environmental Management and Protection Act, 2010*; *The Mineral Industry Environmental Protection Regulations, 1996*; and *The Hazardous Substances and Waste Dangerous Goods Regulations*. Approvals issued by other ministries, agencies and levels of government including the Ministry of the Economy, Water Security Agency and the Rural Municipality of Longlaketon will also be required prior to the project proceeding. In addition, at the permitting stage of the project, a financial assurance will be required from Yancoal which will provide sufficient funding to address any environmental issues that could result from the project and ensure there is no financial or environmental liability for Saskatchewan or its residents associated with the project.

I have concluded that any adverse environmental effects associated with Yancoal's Southey Potash Project can be eliminated or minimized. Approval under the Act, therefore, has been granted to Yancoal for the development as described in the EIS.

The ministerial approval for the development includes terms and conditions designed to promote the elimination and control of adverse environmental effects associated with the development. Included are requirements that Yancoal:

- (a) proceed with the development in accordance with the EIS;
- (b) provide notification of any change;
- (c) follow the requirements of other applicable laws and regulations.

These conditions, plus the measures proposed in the EIS and the regulatory framework applicable to the development, now and in the future, will address all issues related to the development.

Dated at Saskatoon, Saskatchewan this 9<sup>th</sup> day of August, 2016

ORIGINAL SIGNED BY:

Herb Cox  
Minister of Environment