

Environmental Assessment Approval

Approval Date: **AUG 03 2017**

Rhodena Quarry Expansion Zutphen Resources Inc., Approval Holder Inverness County, Nova Scotia

The Rhodena Quarry Expansion (the "Undertaking"), proposed by Zutphen Resources Inc. (the "Approval Holder"), Inverness County, Nova Scotia is approved pursuant to Section 40 of the *Environment Act* and Section 13(1)(b) of the *Environmental Assessment Regulations*. This Approval is subject to the following conditions and obtaining all other necessary approvals, permits or authorizations required by municipal, provincial and federal acts, regulations and by-laws before commencing work on the Undertaking. It is the responsibility of the Approval Holder to ensure that all such approvals, permits or authorizations are obtained before commencing work on the Undertaking.

This Environmental Assessment Approval is based upon the review of the conceptual design, environmental baseline information, impact predictions, and mitigation presented in the Registration Document.

Terms and Conditions for Environmental Assessment Approval

1.0 General Approval

- 1.1 The Environmental Assessment Approval for the Undertaking is limited to the project as described in the Registration Document. Any proposal by the Approval Holder for expansion, modification or relocation of any aspect of the Undertaking from that proposed in the Registration Document must be submitted to the Environmental Assessment Branch for review and may require an environmental assessment (EA).
- 1.2 The Approval Holder must, within two years of the date of issuance of this approval, commence work on the Undertaking unless granted a written extension by the Minister.

The Approval Holder must notify Nova Scotia Environment (NSE) the commencement date of the Undertaking, at a minimum 30 days prior to the commencement.
- 1.3 The Approval Holder must not transfer, sell, lease, assign or otherwise dispose of this approval without the written consent of the Minister. The sale of a controlling interest of a business or a transfer of an approval from a parent company to a subsidiary or an affiliate is deemed to be a transfer requiring consent.
- 1.4 The Approval Holder must implement all mitigation and commitments in the Registration Document, unless approved otherwise by NSE.

2.0 Surface Water Resources

- 2.1 The Approval Holder must not undertake any quarry related activities within 30 metres of a watercourse unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted unless otherwise approved by NSE.
- 2.2 The Approval Holder as part of the application for amendments to the Part V Approval under the *Environment Act*, must submit the following information to NSE for approval, and must implement the plans once approved at a schedule determined by NSE. Based on the results of the monitoring, protection and management programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE:
 - a) environmental protection plan including an erosion and sedimentation control plan that meets the *Nova Scotia Erosion and Sedimentation Control Handbook* and protects the drainage ditching along Rhodena Road, Watercourse 1 and Watercourse 3 in the Registration Document;
 - b) stormwater management plan including details for construction, monitoring, maintenance and upgrading of flow retention/siltation treatment areas. Design criteria must recognize increased likelihood of more intense precipitation events in coming decades; and
 - c) surface water monitoring plan including sampling locations (upstream, downstream, and potential receiving water locations), parameters, and frequencies.
- 2.3 At the request of NSE, the Approval Holder must implement in consultation with NSE, a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material and associated drainage.
- 2.4 All surface water protection and management programs must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

3.0 Wetlands

- 3.1 The Approval Holder must not undertake any quarry related activities within 30 metres of a wetland unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted unless otherwise approved by NSE.
- 3.2 If avoidance of wetlands is not possible during the development of the Project, any loss of wetland habitat through direct infilling or indirectly through alteration of wetland hydrology will require a wetland evaluation and application for alteration under the *Activities Designation Regulations*.

4.0 Groundwater Resources

- 4.1 The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, must submit a groundwater monitoring program including the following to NSE for approval, and must implement the program once approved at a schedule determined by NSE. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects, to the satisfaction of NSE. This program must be updated upon application for amendments to the Part V approval or other frequency as determined by NSE:
- a) one industry-standard permanent monitoring well (minimum) located between active quarry activities and the unnamed watercourse (Watercourse 1 in the Registration Document);
 - b) baseline groundwater chemistry sampling for general chemistry, metals and petroleum hydrocarbons, as per industry best management practices; and
 - c) a plan for reporting monitoring results to NSE.
- 4.2 The Approval Holder must not excavate below the watertable, unless otherwise approved by NSE.
- 4.3 The Approval Holder must replace, at their expense, any water supply which has been lost or damaged as a result of the Undertaking to the satisfaction of NSE.

5.0 Flora and Fauna

- 5.1 The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, must submit a Wildlife Management Plan to include the following points, developed in consultation with and to the satisfaction of Department of Natural Resources (DNR), Wildlife Division, and must implement the program once approved at a schedule determined by NSE:
- a) measures to protect bank swallows, belted kingfishers, barn swallows and other species utilizing soft embankments and stockpiles for breeding and nesting during the breeding season;
 - b) measures to mitigate impacts on wood turtles and snapping turtles, including:
 - i. restricting quarry related activities within 50 metres of a mapped DNR Significant Habitat for Species at Risk (Watercourses 1 and 3 in the Registration Document); and
 - ii. relocation of the scale a minimum of 50 metres away from Watercourse 3 in the Registration Document or additional mitigation strategies for potential adverse changes to surface water quality in this location;
 - c) measures to mitigate impacts on common nighthawk and other migratory birds; and
 - d) measures to manage and mitigate blasting related impacts on birds and mammals. This plan must include, but not be limited to identifying sensitive times and locations for which blasting may impact wildlife.

- 5.2 Within the first year post approval, between June and the end of August, and every two years thereafter, unless otherwise approved by NSE, the Approval Holder will have a competent botanist complete a survey for alien invasive plants along the primary access roads(s) and onsite and will provide the survey results to DNR, Wildlife Division, and NSE within two months. Controls for alien invasive plants and/or modifications to quarry operations must be implemented by the Approval Holder when and where they are warranted, to the satisfaction of DNR and NSE.
- 5.3 The Approval Holder must contact the Regional Biologist at the DNR District Office and Environment and Climate Change Canada–Canadian Wildlife Service (ECCC-CWS) within one day of finding any endangered species listed under the *Nova Scotia Endangered Species Act* or federal *Species at Risk Act*. The Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects to Species at Risk, to the satisfaction of DNR, ECCC-CWS and NSE.
- 5.4 The Approval Holder must clear vegetation outside of the breeding season for most bird species (April 15 to August 15), unless otherwise approved by NSE.

6.0 Noise and Dust

- 6.1 The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, must provide for review and approval, an updated blasting plan developed in accordance with the *NSE Procedure for Conducting a Pre-Blast Survey*. This plan must include an updated pre-blast survey for structures and water supplies within 800 metres of the blast area, a detailed blast monitoring plan, and a full blast damage response policy.
- 6.2 At the request of NSE, the Approval Holder must develop and implement an air quality and/or dust monitoring plan. This plan must include but not be limited to sampling locations, parameters, monitoring methods, protocols and frequency. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.
- 6.3 At the request of NSE, the Approval Holder must monitor noise levels. Based on the results of monitoring program as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.

7.0 Archaeological and Heritage Resources

- 7.1 The Approval Holder must not undertake any quarry related activities within 20 metres of an archaeological site (Farmstead in Registration Document) unless otherwise approved by NSE. No development or removal of vegetation within this 20 metre buffer is permitted unless otherwise approved by NSE.
- 7.2 The Approval Holder must cease work and contact the Special Places Coordinator, Nova Scotia Department of Communities, Culture and Heritage (CCH) immediately upon discovery of an archaeological site or artifact unearthed during any phase of the Undertaking. If the find is of certain or suspected

Mi'kmaq origin, the Approval Holder must also contact the appropriate Mi'kmaq representatives as advised by CCH.

8.0 Public Engagement

- 8.1 The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, must develop and implement a complaint resolution plan to address all concerns associated with the Undertaking. The Approval Holder must appoint a contact person designated to deal with complaints, and must provide the contact information to NSE.
- 8.2 At the request of NSE, the Approval Holder must form a Community Liaison Committee (CLC). The NSE *Guidelines for the Formation of a Community Liaison Committee* should be used for guidance. The Approval Holder must operate the CLC for the duration of the Undertaking unless released in writing by NSE.

9.0 First Nation and Aboriginal Engagement

- 9.1 Within six months of the date of issuance of this approval, unless otherwise approved by NSE, the Approval Holder must develop and implement a Mi'kmaq Communication Plan for the Undertaking, which will contain a process for communicating project details and seeking input from the Mi'kmaq community.

10.0 Contingency Plans

- 10.1 The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, must submit to NSE a contingency plan that meets NSE's *Contingency Planning Guidelines* and addresses (including but not limited to):
 - a) accidental occurrences, and includes the location of spill equipment kept on-site and emergency phone numbers;
 - b) training to be delivered to staff, including contractors;
 - c) procedures for responding to incidents occurring during times when the facility is not staffed (e.g. evenings, weekends, holidays);
 - d) impacts to watercourses and water resources and domestic water supplies;
 - e) releases of dangerous goods or waste dangerous goods;
 - f) potential fire at the facility (to be reviewed and approved by the local fire and emergency service providers);
 - g) petroleum and hazardous material spills and surface water control structure failure; and
 - h) such other information as required by NSE.
- 10.2 Contingency plans must be updated/revised to reflect the progressive

development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

- 10.3 Refuelling must not be conducted within 100 metres of any surface water resource, unless otherwise approved by NSE.

11.0 Decommissioning and Reclamation

- 11.1 The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, must provide for review and approval a preliminary reclamation plan that includes progressive reclamation, and details of future land use.
- 11.2 Reclamation plans must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.
- 11.3 Quarry expansion approval is subject to progressive reclamation at the existing site being completed to the satisfaction of NSE. Re-vegetation will be limited to the use of native species unless otherwise approved by NSE.
- 11.4 Quarry operations must be completed and reclaimed to the satisfaction of NSE and other appropriate regulatory departments.



Iain Rankin, MLA
Minister of Environment