

Sovereign Resources Inc.

Environmental Assessment Registration

Sovereign Resources Quarry Modification Project

Project Number: NSD17650

July 2005



**SOVEREIGN RESOURCES INC.
DRAFT ENVIRONMENTAL ASSESSMENT REGISTRATION
SOVEREIGN RESOURCES QUARRY MODIFICATION PROJECT**

PROJECT NO. NSD17650

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REPORT TO

SOVEREIGN RESOURCES INC.

ON

**ENVIRONMENTAL ASSESSMENT REGISTRATION
SOVEREIGN RESOURCES QUARRY MODIFICATION PROJECT
ROCKY LAKE DRIVE, BEDFORD, NS**

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July 2005

EXECUTIVE SUMMARY

Sovereign Resources Inc, a subsidiary of Municipal Enterprises Limited of Bedford, Nova Scotia, owns and operates a quarry on the east side of Rocky Lake Drive between Bedford and Waverley, Nova Scotia. This quarry operation was purchased from Tidewater Construction Limited in February 2002. Under varying ownership, the quarry has been in operation for more than 20 years. This quarry is currently approved for an area of approximately 19 hectares (44 acres) including rock crushing. Sovereign Resources now proposes to expand the permitted quarry boundary to include an additional 180 ha (445 acres) of land under company ownership to allow long-term quarry development to proceed into the future (the Project). The estimated lifespan of the Project is approximately 50 years.

Sovereign Resources is required to register this Project as a Class I Undertaking pursuant to the Nova Scotia *Environment Act* and Environmental Assessment Regulations. This environmental assessment (EA) report fulfils the primary requirements for project registration under this legislation and has been prepared by Jacques Whitford Limited on behalf of Sovereign Resources.

Sovereign Resources is aware of concerns of the adjacent communities with regard to the previous Tidewater proposal for quarry expansion (*e.g.*, additional trucking on Rocky Lake Drive) and has sought to address these concerns in its current proposal. For example, there will be no crushing at the Sovereign Resources quarry and, upon Project Approval, in an effort to minimize the volume of truck traffic on Rocky Lake Drive, all truck traffic associated with the removal of rock aggregate from the Sovereign Resources quarry will enter and exit through the existing Municipal Enterprises quarry. Modification of the Sovereign Resources quarry is not expected to result in a net increase in aggregate production and trucking at the existing/adjacent Municipal Enterprises quarry. However, if market demands change, the volumes will fluctuate.

Sovereign Resources, in cooperation with the EA Study Team, has undertaken a comprehensive stakeholder/public consultation program to communicate Project details and solicit public input for consideration during preparation of the EA Report. Stakeholder consultation has included meetings with the Monitoring Board (a joint community-regulatory-owner liaison committee originally established during the Tidewater quarry operation as a condition of regulatory approval), the Waverley Ratepayers Association, and local elected representatives. Consultation with the general public was primarily achieved through the distribution of a Project Information Bulletin, public open house meeting, and follow-up consultations with select individuals by the EA Study Team. In addition, Sovereign Resources has maintained ongoing consultations with Nova Scotia Environment and Labour (NSEL) regarding the scope and preparation of the EA Report. These consultations have proven to be very informative and helpful in Project design and scoping of the EA Report (*i.e.*, identification of potential issues of concern). For example, early consultations with the Monitoring Board resulted in Sovereign

Resources amending its proposed quarry boundaries to the 50 m contour to reduce impacts on the existing viewshed.

The scope of this EA has been determined based on regulatory and stakeholder consultations, the professional judgement and expert knowledge of the EA Study Team, and the results of field studies conducted in support of this EA. The *Guide to Preparing an EA Registration Document for Pit and Quarry Developments in Nova Scotia* (NSEL 2002) was also used to help focus the scope of the assessment and ensure a thorough consideration of applicable issues.

The EA Report focuses on those components of the environment that are valued by society and/or serve as indicators for environmental change. These components are known as Valued Environmental Components (VECs) and Valued Socio-economic Components (VSCs). The EA for this Project evaluates potential Project-related effects with regard to the following VECs/VSCs:

- Air Quality;
- Noise and Vibration;
- Groundwater Resources;
- Surface Water and Hydrology;
- Wetlands;
- Rare and Sensitive Flora;
- Wildlife;
- Land Use;
- Visual Environment; and
- Archaeological and Heritage Resources.

Field studies were conducted between June and October, 2004 to investigate and establish the existing conditions and to determine appropriate mitigation, if necessary, to minimize environmental effects from the proposed Project. These surveys consisted of: vegetation survey; breeding bird survey; mammal survey; herpetile survey; and fish and fish habitat survey. These surveys were undertaken by qualified terrestrial and freshwater ecologists employed by Jacques Whitford. An assessment of potential archaeological and heritage resources was undertaken by a qualified archaeologist. A hydrology study was conducted by Hydro-Com Technologies Ltd. A reconnaissance survey of road conditions and existing traffic levels was conducted by Atlantic Road and Traffic Management. In February 2005, an ambient noise monitoring survey was conducted. Additional information, in support of the field studies and the assessment, was gathered through a review of: air photos; site mapping; and other information sources.

For each VEC/VSC, existing conditions (*i.e.*, pre-Project) are described in context of the boundaries established for the assessment. Potential interactions are investigated and evaluated based on current

scientific knowledge with regard to each interaction. Effects are analyzed qualitatively, and, where possible, quantitatively, using existing knowledge, professional judgement and appropriate analytical tools.

Where applicable, mitigative measures are identified and the significance of the predicted environmental effects of the Project are evaluated based on specific evaluation criteria which considers the magnitude, frequency, duration, geographical extent and reversibility of the potential effect.

Predicted environmental effects from the Project include loss of plant and animal habitat including wetland habitat. None of this habitat loss is considered significant with the possible exception of potential hydrologic effects on a wetland supporting a plant species of “undetermined” status. Offsite groundwater and surface water quality will not be significantly affected.

Predicted socio-economic effects include minor visual effects as well as some minor ongoing effects from noise and dust (similar to those currently experienced). If the Project is approved, Sovereign Resources has committed to maintaining a substantial undeveloped buffer zone around the quarry to help alleviate these concerns.

The EA Report proposes various mitigative measures to be implemented during the life of the Project, including, but not limited to: adherence to the Pit and Quarry Guidelines (NSDOE 1999); development to 50 m contour; establishment of undeveloped buffer zones; avoidance of streams and some wetlands; no crushing onsite; no transport of aggregate exiting the Sovereign Resources quarry to Rocky Lake Drive; preparation of a quarry development plan; dust control; erosion and sediment control; clearing outside bird breeding season; no blasting during temperature inversion conditions; progressive reclamation; and consideration of tree plantings and berm construction to reduce noise and visual effects.

Proposed monitoring programs include: dust and noise monitoring; pre-blast survey; follow-up bird survey; rare plant monitoring program; groundwater monitoring well program; monitoring fish habitat; surface water runoff monitoring program; and blast and vibration monitoring. It is also proposed that the Monitoring Board, established under an existing approval, remain active for the life of the Project

Implementation of the proposed mitigation, monitoring and follow-up studies, and adherence to the applicable regulations, approvals and guidelines will reduce or eliminate any adverse environmental effects. No significant adverse residual environmental effects are therefore likely to occur as a result of this Project. Continued operation of the quarry will result in economic benefits, including continued employment, ongoing business opportunities, and provision of quality aggregate within reasonable proximity to the Halifax Regional Municipality (HRM).

TABLE OF CONTENTS

	Page No.
EXECUTIVE SUMMARY	<i>i</i>
1.0 PROPONENT AND PROJECT IDENTIFICATION	1
1.1 Proponent Information	1
1.2 Project Information	2
2.0 PROJECT INFORMATION.....	3
2.1 Description of the Undertaking.....	3
2.2 Project Background and Quarry History.....	3
2.3 Geographical Location.....	5
2.4 Physical Components.....	7
2.5 Site Preparation and Construction	7
2.6 Operation and Maintenance	10
2.6.1 Quarry Operation Activities.....	10
2.6.2 Effluents and Emissions.....	11
2.6.3 Hazardous Materials and Contingency Planning.....	13
2.7 Decommissioning and Reclamation	14
3.0 SCOPE AND METHODOLOGY	15
3.1 Overview and Approach	15
3.2 Scope of the Undertaking.....	15
3.2.1 Purpose and Need for the Undertaking	16
3.2.2 Project Alternatives.....	16
3.3 Scope of the Environmental Assessment.....	17
3.3.1 VEC/VSC Identification	17
3.3.2 Spatial and Temporal Boundaries	19
3.4 Impact Assessment Methodology	19
3.4.1 Field Studies and Data Collection.....	19
3.4.2 Effects Analysis Methodology.....	20
4.0 PUBLIC INVOLVEMENT	25
5.0 VALUED ENVIRONMENTAL/SOCIO-ECONOMIC COMPONENTS (VEC/VSC) AND EFFECTS MANAGEMENT	29

5.1	Air Quality	29
5.1.1	Description of Existing Environment	29
5.1.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	33
5.2	Noise and Vibration	36
5.2.1	Description of Existing Environment	37
5.2.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	39
5.3	Groundwater Resources	41
5.3.1	Description of Existing Environment	42
5.3.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	46
5.4	Surface Water and Hydrology	48
	Description of Existing Environment	48
5.4.1	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	57
5.5	Wetlands	65
5.5.1	Description of Existing Environment	65
5.5.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	70
5.6	Rare and Sensitive Flora	71
5.6.1	Description of Existing Environment	72
5.6.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	75
5.7	Wildlife	76
5.7.1	Description of Existing Environment	76
5.7.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	83
5.8	Land Use	84
5.8.1	Description of Existing Environment	84
5.8.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	89
5.9	Visual Environment	92
5.9.1	Description of Existing Environment	93
5.9.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	93
5.10	Archaeological and Heritage Resources	98
5.10.1	Description of Existing Environment	98
5.10.2	Potential Effects, Proposed Mitigation, Monitoring and Follow-up.....	101
5.11	Other Undertakings in the Area	102
6.0	EFFECTS OF THE PROJECT ON THE ENVIRONMENT	104
7.0	EFFECTS OF THE ENVIRONMENT ON THE PROJECT	106
8.0	OTHER APPROVALS REQUIRED.....	107

9.0	FUNDING.....	108
10.0	ADDITIONAL INFORMATION.....	109
11.0	REFERENCES	110
11.1	Literature Cited.....	110
11.2	Personal Communications	115

LIST OF TABLES

	Page No.
Table 3.1	Scoping of VECs/VSCs Using EA Guide for Pit and Quarry Developments (NSEL 2002)..... 17
Table 3.2	Valued Environmental Components (VECs) and Valued Socio-economic Components (VSCs) and Selection Rationale..... 19
Table 3.3	Assessment Boundaries and Significance Criteria 21
Table 4.1	Public Issues and Concerns Raised at the Open House Meeting..... 26
Table 4.2	Key Issues Raised During Review of Draft EA Report by Regulatory Agencies and the Monitoring Board..... 27
Table 5.1	Ambient Air Quality – Municipal Enterprises Rocky Lake Quarry, August 2004 30
Table 5.2	Ambient Noise Levels – Rocky Lake Quarry, August 2004 37
Table 5.3	SPL Background Measurements (Feb. 2005) 38
Table 5.4	Summary of Local Domestic Water Wells Completed in Goldenville Formation for 38 Wells Reported Along Rocky Lake Drive and Lakeview within Study Area 46
Table 5.5	Estimated Change in Drainage Areas and Annual Runoff Volumes 62
Table 5.6	Wetlands Found Within or Immediately Adjacent to the Proposed Quarry Boundaries 67
Table 5.7	Phenology and Habitat Preferences of Rare Vascular Plant Species Found in and Near the Study Area 73
Table 5.8	Mammal Species Recorded in the Study Area and/or Expected to be Present in the Study Area..... 80
Table 5.9	Herpetile Species Recorded in the Study Area and/or Expected to be Present in the Study Area..... 82
Table 6.1	Summary of Environmental Effects, Mitigation and Monitoring..... 104

LIST OF FIGURES

	Page No.
Figure 2.1	Site Location 4
Figure 2.2	Project Boundaries 6
Figure 5.1	Air and Noise Monitoring Locations 31
Figure 5.2	Joint Wind Speed-Direction Frequency Distribution (Wind-Rose) for the Halifax International Airport 32
Figure 5.3	Site Geology..... 43
Figure 5.4	Water Well Locations 45
Figure 5.5	Watershed Delineation for Pre-development Conditions 50
Figure 5.6	Watershed Delineation for Ultimate Development Conditions 63
Figure 5.7	Wetland Habitat 66
Figure 5.8	Land Use Zoning and Generalized Future Land Use..... 85
Figure 5.9	Land Use Features..... 87

LIST OF APPENDICES

Appendix A	Registry of Joint Stocks
Appendix B	Existing Industrial Approvals
Appendix C	Traffic Study
Appendix D	Hydrology Study
Appendix E	Public Consultation Materials
Appendix F	Water Quality Data
Appendix G	Wetland Evaluations
Appendix H	Vascular Plants Recorded in Study Area
Appendix I	Bird Species Recorded in Study Area
Appendix J	Visual Impact Assessment Figures
Appendix K	Visual Impact Assessment Photographs
Appendix L	Correspondence from Millbrook Band Council
Appendix M	Archaeological Impact Assessment Photographs

1.0 PROPONENT AND PROJECT IDENTIFICATION

1.1 Proponent Information

Sovereign Resources Inc. (Sovereign Resources; formerly 3057565 Nova Scotia Limited), is a subsidiary of Municipal Enterprises Limited of Bedford, Nova Scotia. The company was incorporated in Nova Scotia in 2001. Through its parent company, Sovereign Resources has significant experience in pit and quarry developments in New Brunswick and Nova Scotia. Municipal Enterprises is one of the largest road construction contractors in Nova Scotia. A copy of Registry of Joint Stocks for Sovereign Resources is included in Appendix A.

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Signature of President

July 28, 2005

Date

1.2 Project Information

Name of the Undertaking: Sovereign Resources Inc. Quarry Modification Project
Location of the Undertaking: Rocky Lake Drive, Bedford, Nova Scotia

2.0 PROJECT INFORMATION

2.1 Description of the Undertaking

Sovereign Resources owns and operates a quarry on the east side of Rocky Lake Drive between Bedford and Waverley, Nova Scotia (Figure 2.1). The quarry operation was purchased from Tidewater Construction Limited in February 2002. At the time of the sale, the Industrial Approval issued by Nova Scotia Environment and Labour (NSEL) was transferred to 3057565 Nova Scotia Limited, which later became Sovereign Resources (refer to Appendix B). This Approval allows for the operation of a rock quarry, including crushing, for an area of approximately 19 hectares (44 acres). Also included in the sale was a large tract of land immediately adjacent to and surrounding the quarry. Sovereign Resources now proposes to expand the permitted quarry boundary to include an additional 180 ha (445 acres) to allow long-term quarry development to proceed into the future (the Project). The estimated lifespan of the Project is approximately 50 years.

Sovereign Resources is required to register this Project as a Class I Undertaking pursuant to the Nova Scotia *Environment Act* and Environmental Assessment Regulations. A detailed description of the proposed undertaking is provided in the following sections.

2.2 Project Background and Quarry History

Under varying ownership, the quarry has been in operation for more than 20 years. In 1982, Tidewater Construction Company purchased approximately 166 ha (410 acres) in Waverley to develop a quarry. Tidewater began operation of the quarry in 1986. A subsidiary of Municipal Enterprises Limited (a numbered company which later became Sovereign Resources) later purchased the quarry and adjacent lands from Tidewater. Sovereign Resources, through its parent company, has extensive quarry experience in the Rocky Lake area. The Municipal Enterprises quarry on Rocky Lake Drive has been in operation since the early 1970s at its present location.

Sovereign Resources is sensitive to the public's concerns for quarry expansion and has made an effort to address these issues in their Project design. For example, there will be no crushing at the Sovereign Resources quarry and, in an effort to minimize the volume of truck traffic on Rocky Lake Drive, all truck traffic associated with the removal of rock aggregate from the Sovereign Resources quarry will enter and exit through the existing Municipal Enterprises quarry, should the proposed Project proceed. Modification of the Sovereign Resources quarry is not expected to result in a net increase in aggregate production and trucking at the existing adjacent Municipal Enterprises quarry. However, these volumes may fluctuate as market demands fluctuate.

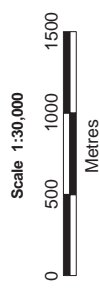


Figure 2.1
Site Location

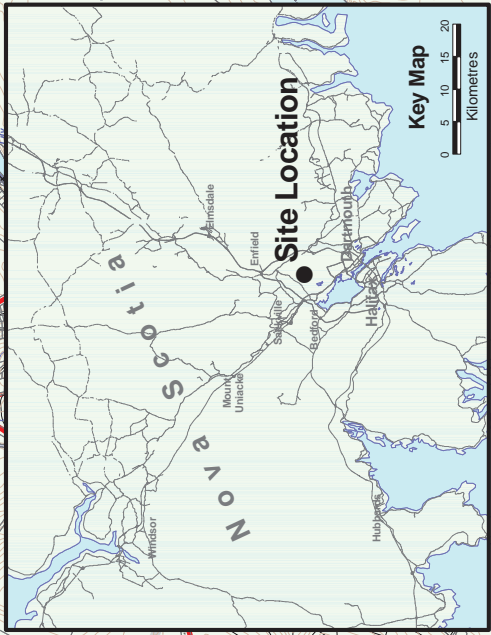
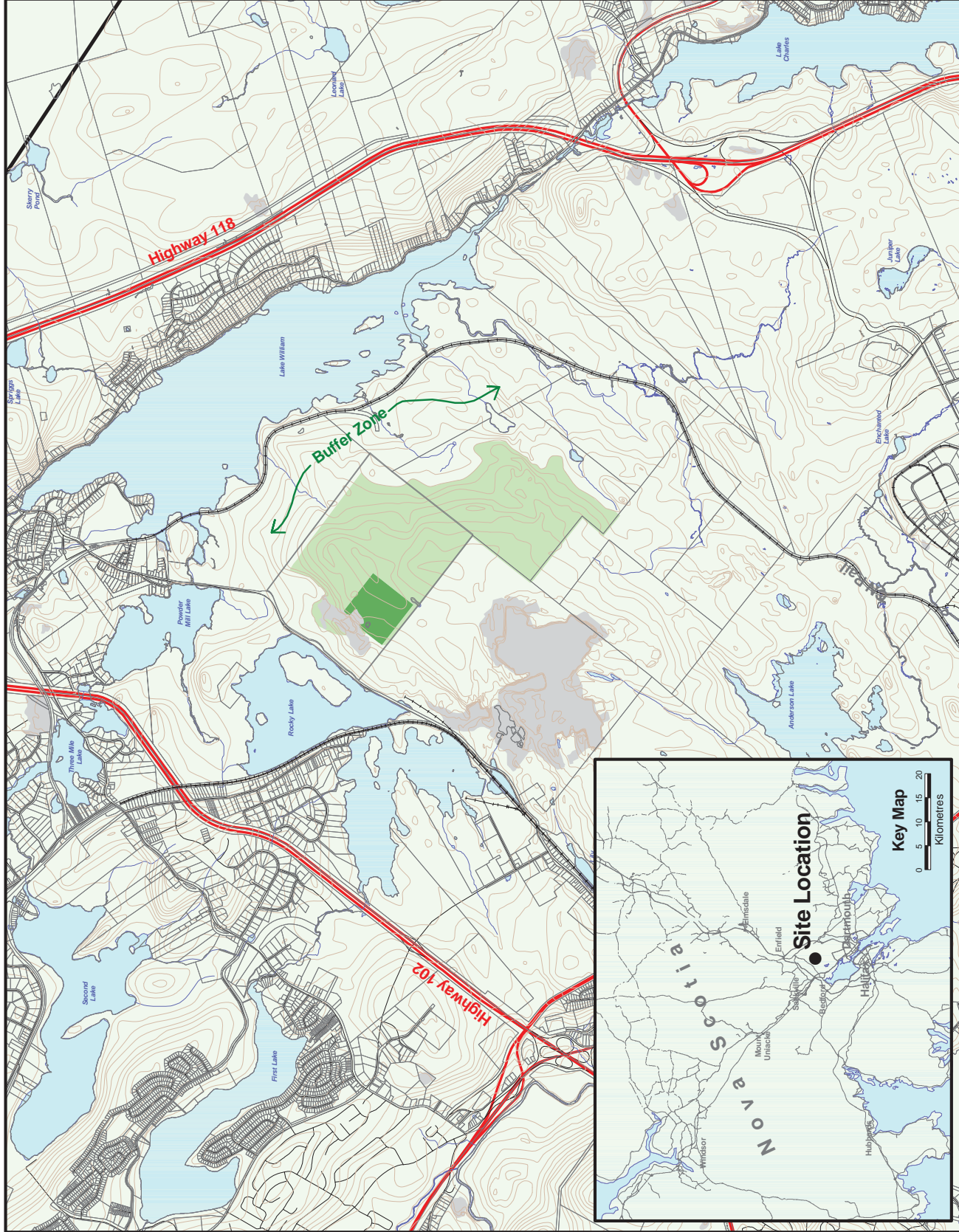
- Project Features**
- Proposed Sovereign Resources Quarry Modification Area
 - Approved Sovereign Resources Quarry
 - Existing Quarry

- Topographic Features**
- Elevation Contour (m)
 - Stream
 - Waterbody
 - Property Boundary

Topographic data Source: Nova Scotia Digital
Topographic database (NSDTB) from Service Nova Scotia.
Elevation contour data is at 5 metre intervals.



Map Parameters
Projection: 3° NUTM
Date: 01/25/17
Date: March 2005
Project: NSD17650



In addition to the design mitigation discussed above, Sovereign Resources undertook a comprehensive process to develop and confirm the proposed modification area (*i.e.*, proposed boundary of the quarry area). This process began considering all of the land owned by Sovereign Resources (see Figure 2.2). A large portion of the land was immediately eliminated due to the presence of and proximity to large surface water bodies (*i.e.*, area east of the proposed quarry area). A preliminary boundary was identified and a number of field studies were conducted (*e.g.*, flora and fauna, wetlands, hydrology, etc.). This preliminary quarry area was presented to NSEL and the Sovereign Resources Monitoring Board as part of the issues scoping exercise and public/stakeholder consultation program (see Section 4). The results of the field surveys and the above meetings led to the development of the currently proposed quarry modification area. This boundary was primarily developed in consideration of potential impacts to visual aesthetics (see Section 5.9); however, it also minimizes direct impacts on a number of wetlands (see Section 5.5).

2.3 Geographical Location

The Sovereign Resources quarry is located on the east side of Rocky Lake Drive between the communities of Bedford and Waverley in the Halifax Regional Municipality (HRM), Nova Scotia. It is situated immediately north of the Municipal Enterprises quarry (Rocky Lake quarry) also on Rocky Lake Drive. The proposed quarry area is contained within lands owned by Municipal Enterprises Group of companies. The boundary of the existing permitted area and the proposed modification to the boundaries are shown on Figure 2.2. The Project area is bounded by Rocky Lake Drive to the west and the Municipal Enterprises quarry to the south. A large undeveloped parcel of forested land immediately north of the proposed Project area, along Lake William, was recently purchased from Archibald Holdings by Sovereign Resources to prevent a high density residential development along the lake front. Upon approval of this proposed Project, it is intended that the lands acquired from Archibald Holdings remain as an undeveloped greenbelt for the duration of quarry operations on the Sovereign Resources site. Generally, the study area for the assessment is bounded by Rocky Lake to the northwest, Powder Mill Lake to the north and Lake William to the northeast.

The quarry is located on lands that are 90 m (295 feet) above sea level at the highest point. The nearest communities are Waverley, located north of the site along Rocky Lake Drive, and Lakeview located across Rocky Lake. The nearest residence is approximately 730 m from the boundary of the existing Sovereign Resources quarry. No additional residences are located within the 800 m setback distance as a result of the proposed Project. In accordance with the Pit and Quarry Guidelines (NSDOE 1999), an 800 m setback distance will be maintained between the working face and the nearest residence. More information on land use adjacent to the Project area is contained in Section 5.8.