

**ENVIRONMENTAL ASSESSMENT  
REGISTRATION DOCUMENT**

**PENNECON LIMITED  
PROPOSED MAGNETITE QUARRY  
STEEL MOUNTAIN**

Prepared for:

Pennecon Ltd.  
1309 Topsail Road  
P.O. Box 8274, Station A  
St. John's, NL A1B 3N4

Prepared by:

LORAX Environmental Services  
Suite 504, Box 4, 215 Water Street  
St. John's, NL A1C 6C9

September 2009

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<b>1.0</b>	<b>NAME OF UNDERTAKING</b>	Steel Mountain Magnetite Quarry
<b>2.0</b> <b>PROPOONENT</b>		
2.1	<i>Name of Corporate Body</i>	Pennecon Limited
2.2	<i>Address</i>	1309 Topsail Road P.O. Box 8274, Station A St. John's, NL A1B 3N4
2.3	<i>Chief Executive Officer</i>	Larry Puddister, P.Eng. President and COO 1309 Topsail Road P.O. Box 8274, Station A St. John's, NL A1B 3N4 Tel: (709) 782-3404 Fax: (709) 782-0129
2.4	<i>Principal Contact Person</i>	Roderick Mercer, P. Geo. Aggregate and Mineral Resources Manager 1309 Topsail Road P.O. Box 8274, Station A St. John's, NL A1B 3N4 Tel: (709) 782-3404 Fax: (709) 782-0129

### **3.0 THE UNDERTAKING**

#### **3.1 Nature of the Undertaking**

The proposed project involves the reestablishment of an existing magnetite quarry site near Steel Mountain, approximately 25 km southeast of the town of Stephenville. Site access will be via the existing approximately 8 km access road. The quarry site currently consists of two previously-excavated pits and a series of basic access roads. The proponent proposes to redevelop the area as a quarry operation, mining and transporting materials for use as heavy ballast.

#### **3.2 Purpose/Rationale/Need for the Undertaking**

The purpose of this project is to produce a product (magnetite ballast) for future use in the local oil and gas industry.

## 4.0 DESCRIPTION OF THE UNDERTAKING

### 4.1 Geographic Location

The project is located in an area known as Steel Mountain, approximately 8 km east of the Trans Canada Highway near the St. George's Intersection on NTS Map Sheet 12B/08. Access to the site is via an 8 km resource road from the TCH. The site, as existing quarry, is approximately 10.8 hectares in size. The proponent proposes to re-establish the area as a quarry operation for the production of magnetite for use as heavy ballast. Refer to *Figure 1: Site Location* for details.

### 4.2 Physical Features

#### 4.2.1 Project Site Description

The primary physical feature for this project will be the quarry itself, which includes two existing pits. Access to the site will be by means of an existing resource road (~ 8 km) that will require minor upgrades. Additionally, access roads within the quarry property will be upgraded as necessary prior to and during operations. The quarry boundary is sited to ensure a minimum 50 m buffer zone around all water bodies and streams adjacent to the proposed site.

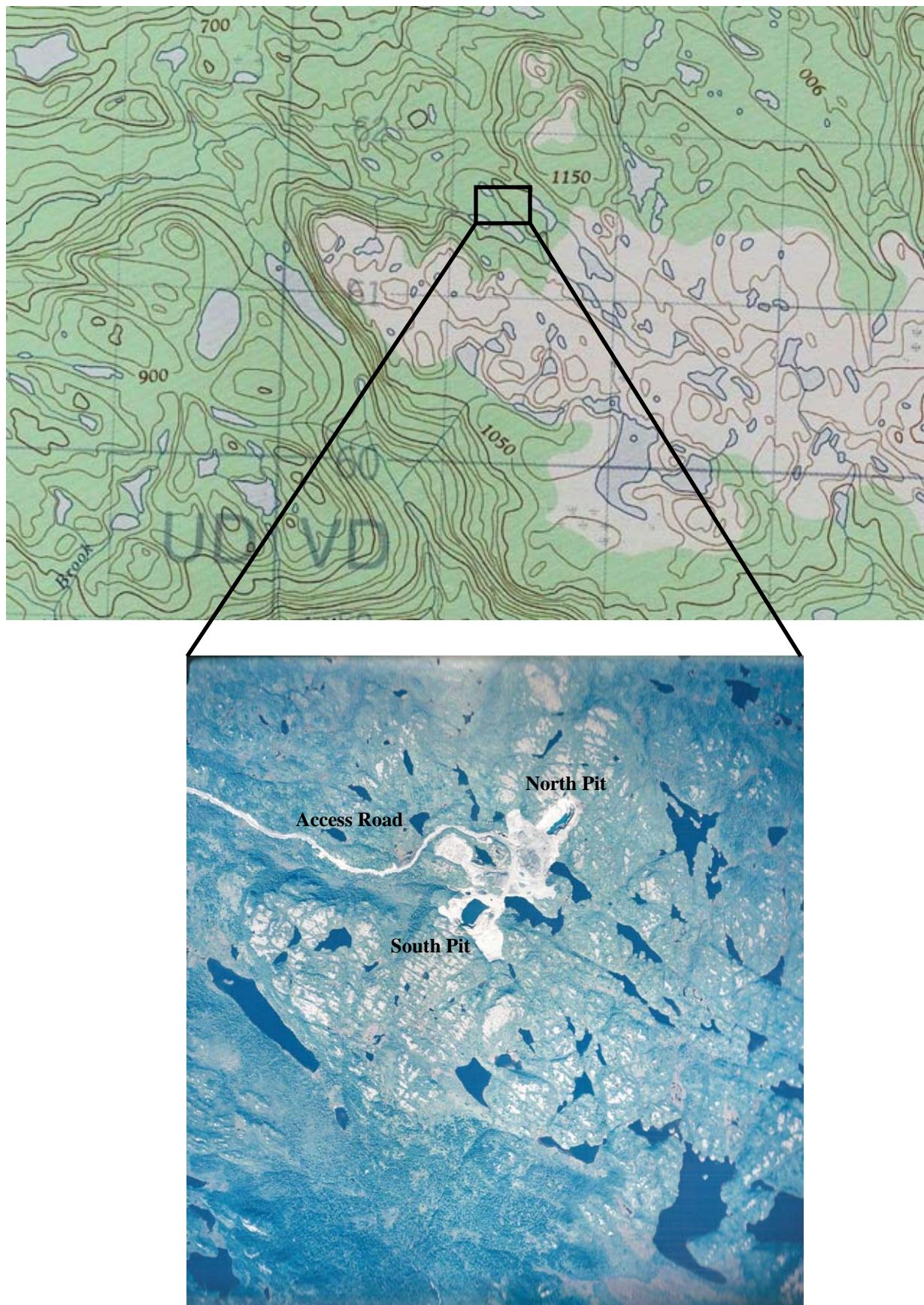
#### 4.2.2 Existing Biophysical Environment

The proposed site is located within the *Western Newfoundland Ecoregion*, St. George's Bay Subregion, and covers the west coast of Newfoundland, south of the Northern Peninsula and west of the barrens of the southern Long Range Mountains and the Buchans Plateau. Forestry, pulp and paper, farming, and fishing are the most common land-use activities. The major communities include Stephenville and Corner Brook. Serpentine and limestone barrens are common on exposed ultramafic (serpentine) and calcareous (limestone and dolomite) bedrock.

This ecoregion is characterized by cool summers and cold winters with plenty of snow. The mean annual temperature is around 4°C, with a mean summer temperature of 12°C and a mean winter temperature of -3.5°C. The mean annual precipitation ranges from 1000 mm to 1200 mm. Elevations range from sea level to just over 800 m above sea level (Lewis Hills, the highest point north of Stephenville).

#### Vegetation

The St. George's Bay subregion is dominated by balsam fir with a wood fern understory. Black spruce occur in poorly drained areas or in areas of exposed bedrock. On flat coastal areas, extensive plateau bogs occur, while slope fens and alder swamps are the dominant wetland types on slopes and valleys. Two types of alder swamps occur nowhere else on the Island except the Western Newfoundland Ecoregion: golden rod/alder and bracken/fern/alder swamps. Both types of alder swamps are found where the soil is water-logged or poorly drained, and therefore high in nutrients. Maple thickets, unique to the western portion of the province, are also known to form in some of these nutrient-rich areas. Several species, including the yellow birch, white pine, red maple, and trembling aspen are at their northern limits for the Island in this ecoregion.



**Figure 1.** Site Location

### Wildlife

Several mammal species occur in this ecoregion, including black bear, moose, snowshoe hare, beaver, muskrat, otter, red fox, marten, mink, and lynx. Other mammals, including the little brown bat, eastern chipmunk, short-tailed weasel, masked shrew and red-squirrel, are also known to occur in the area.

Bird species found in forested areas include osprey, finches, woodpeckers, thrushes, marblers, and yellow-bellied and alder flycatchers. American bittern, song sparrow, bobolink and Lincoln's sparrow are found in marshes, bogs and shrublands. Aquatic bird species found in the ecoregion include black ducks, green-winged teal and American widgeon; scoters, oldsquaw and common eiders are also abundant. Nesting shorebirds include greater yellowlegs, common snipe, spotted sandpiper and willets. The endangered piping plover has been observed nesting in the Flat Island area of the ecoregion, though in very small numbers. Flat Island is also home to a colony of common terns, arctic terns, ring-billed gulls and black-backed gulls.

### Inland Fish

The rivers and ponds of the St. George's Bay subregion are host to a number of fish species, including stickleback (black-spotted, three-spine and nine-spine), arctic char, brook trout, rainbow smelt, mummichog, American eel, and Atlantic salmon. In addition, the banded killifish, which is designated “special concern” in Newfoundland, is also found in this subregion.

### Reptile/Amphibians

There are no reptiles recorded for this ecoregion. A number of introduced amphibians inhabit the area, including the green frog.

## 4.3 Construction

As the site is an existing quarry, no construction is necessary other than minor upgrades to the access road. As a result, potential sources of pollution are limited to those associated with typical heavy equipment use, *i.e.* dust, noise, and spills of petroleum products.

### 4.3.1 Potential Sources of Pollution during Construction

All equipment will have appropriate emission controls. All vehicles will follow a designated project route and be properly maintained to minimize noise. All vehicles will have exhaust systems regularly inspected and mufflers operating properly. Dust control measures, such as water applications, will be provided on an as-required basis. Petroleum products will not be stored on site during construction; petroleum products will be handled as per *Storage and Handling of Gasoline and Associated Products Regulations*.

### 4.3.2 Potential Resource Conflicts during Operation

Resource conflicts are not expected as the site is an existing quarry in close proximity to a waste disposal facility (incinerator). A literature review did not reveal reference to historic sites in the area. If, however, historic resources are encountered, work in the area of the discovery will stop and the foreman will notify the proper authorities.

#### 4.4 Operation

The operational phase will consist of typical hard-rock quarrying operations: a combination of magnetite and waste rock will be drilled and blasted from the quarry, material will then be crushed, magnetically separated and screened to produce a stable magnetite ballast. All processing will be done outdoors, on site with mobile equipment. Quarry dewatering will occur as required. Water quality has been tested (see APPENDIX A) and meets guidelines for de-watering (*Environmental Control Water and Sewage Regulations, 2003*).

The grounds and facilities will be maintained according to environmental health and safety standards and regulations. The blasting operations will be conducted by licensed blasters. The explosives will not be manufactured on site but will be ordered on a regular basis from reputable suppliers.

The quarry operation will typically run from May to November, in accordance with demand for the product. The quarry will potentially operate for 5 years.

##### 4.4.1 Potential Sources of Pollution during Operation

The potential sources of pollution will be blasting materials (ANFO), dust, noise, site run-off, or an accidental spill of fuel.

##### Dust and Noise

All equipment will have appropriate emission controls. All vehicles will follow a designated project route and be properly maintained to minimize noise. All vehicles will have exhaust systems regularly inspected and mufflers operating properly. Dust control measures, such as water applications, will be provided on an as-required basis.

##### Site Run-off

Where possible, run-off will be directed to vegetated areas within the project area, which will filter any potential suspended solids. Adsorbents will be used to recover any hydrocarbon sheen in the pit water.

The use of ANFO explosives has the potential to produce ammonia blast residue in the pit water. Although elevated levels of ammonia are toxic to some aquatic life, the discharge to vegetated areas will encourage bio- and chemical degradation of ammonia.

Sewage will be handled by an approved portable facility during operation. The holding tanks will be emptied by a pump truck on a regular basis and disposed of in an appropriate manner.

All fuel handling and storage will comply with the *Storage and Handling of Gasoline and Associated Products Regulations*. Vehicles and mechanical equipment will be maintained in good working order to prevent leaks and spills. There will be no on-site bulk storage of fuel or oil. All waste oil generated at the quarry will be disposed of by a licensed disposal agent.

### Waste and Litter

During operation, domestic garbage will be collected and hauled to the local waste disposal facility in accordance with the *Waste Material Disposal Act*. Any food or organic garbage onsite will be held in animal-proof containers to prevent attracting wildlife.

#### 4.4.2 Decommissioning/rehabilitation

Site decommissioning and rehabilitation shall be in accordance with standard quarry operations, including:

- Upon completion of all quarrying activities, all pit and quarry slopes shall be graded to less than 20° or to the slope confirming to that existing prior to quarrying;
- Waster overburden will be used for sloping;
- Stockpiled topsoil or other organic material will be spread over the entire quarried area and seeding will be completed to produce plant growth.

#### 4.5 *Occupations*

Site construction and operations for the proposed quarry will include the following occupations, classified as per *National Occupational Classification, 2006*, and equipment.

##### Construction Phase

1 Site Foreman/Supervisor (7217)  
1 Heavy Equipment Operator (7421)

##### Quarry Operations

1 Quarry Manager (0811)  
1 Quarry Foreman/supervisor (8221)  
7 Heavy Equipment Operators – 2 Excavators, 1 Loader, 2 Crushers, 2 Magnetic Separators (7421)  
6 Truck Drivers (7411)  
2 Heavy Equipment Mechanics (7312) – located offsite

#### 4.6 *Project Related Documents*

Pit water quality has been assessed for the purposes of obtaining a *Permit to Alter a Water Body* (APPENDIX A). In addition, a quarry permit application has been submitted to the Department of Natural Resources for approval (APPENDIX B).

## **5.0 APPROVAL OF THE UNDERTAKING**

*Environmental Protection Act – Assessment Regulations: Permit to Proceed*  
*Quarry Materials Act and Quarry Minerals Regulations: Quarry Permit*

## **6.0 SCHEDULE**

Registration Document Submission	September, 2009
Government Review and Decision	October, 2009
Access Road Upgrades	May 2010
Quarry Operations	May 2010

## **7.0 FUNDING**

The funding for this project will be provided by Pennecon Limited.

## **8.0 SUBMISSION**

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*Date*

*Name:* Roderick Mercer, P. Geo.

*Position:* Aggregate and Mineral Resources Manager

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**APPENDIX A**  
**A1: Permit to Alter a Water Body**  
**A2: Water Chemistry**



Government of Newfoundland and Labrador  
Department of Environment and Conservation  
Water Resources Management Division

## PERMIT TO ALTER A BODY OF WATER

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, Section(s) 48

Date: AUGUST 06, 2009

File No: 526  
Permit No: ALT4759

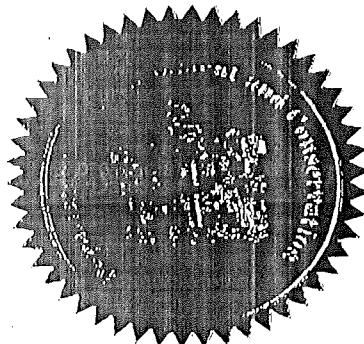
Proponent: Pennecon Limited  
PO Box 8274, Station 'A'  
1309 Topsail Road  
St. John's NL A1B 3N4

Attention: Roderick Mercer

Re: Bay St. George - Quarry Dewatering

Permission is hereby given for: placement of rock mattress at the discharge point of the pumps to dewater two (2) quarry pits to facilitate quarry assessment in the Bay St. George area, with reference to the application dated August 4, 2009.

- This permit does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies.
- This permit is subject to the terms and conditions indicated in Appendix A (attached).
- It should be noted that prior to any significant changes in the design or installation of the proposed works, or in event of changes in ownership or management of the project, an amendment to this permit must be obtained from the Department of Environment and Conservation under Section 49 of the *Water Resources Act*.
- Failure to comply with the terms and conditions will render this permit null and void, place the proponent and their agent(s) in violation of the *Water Resources Act* and make the proponent responsible for taking any remedial measures as may be prescribed by this Department.



  
MINISTER

cc: Mr. Calvin Payne (W)  
Regional Lands Manager  
Department of Environment and Conservation  
Norton Building  
PO Box 2006  
Corner Brook NL A2H 6J8

Permit No: ALT4759

cc: Manager (W)  
Area Habitat Biologist  
Department of Fisheries and Oceans  
1 Regent Square, Suite 201  
Corner Brook NL A2H 7K6

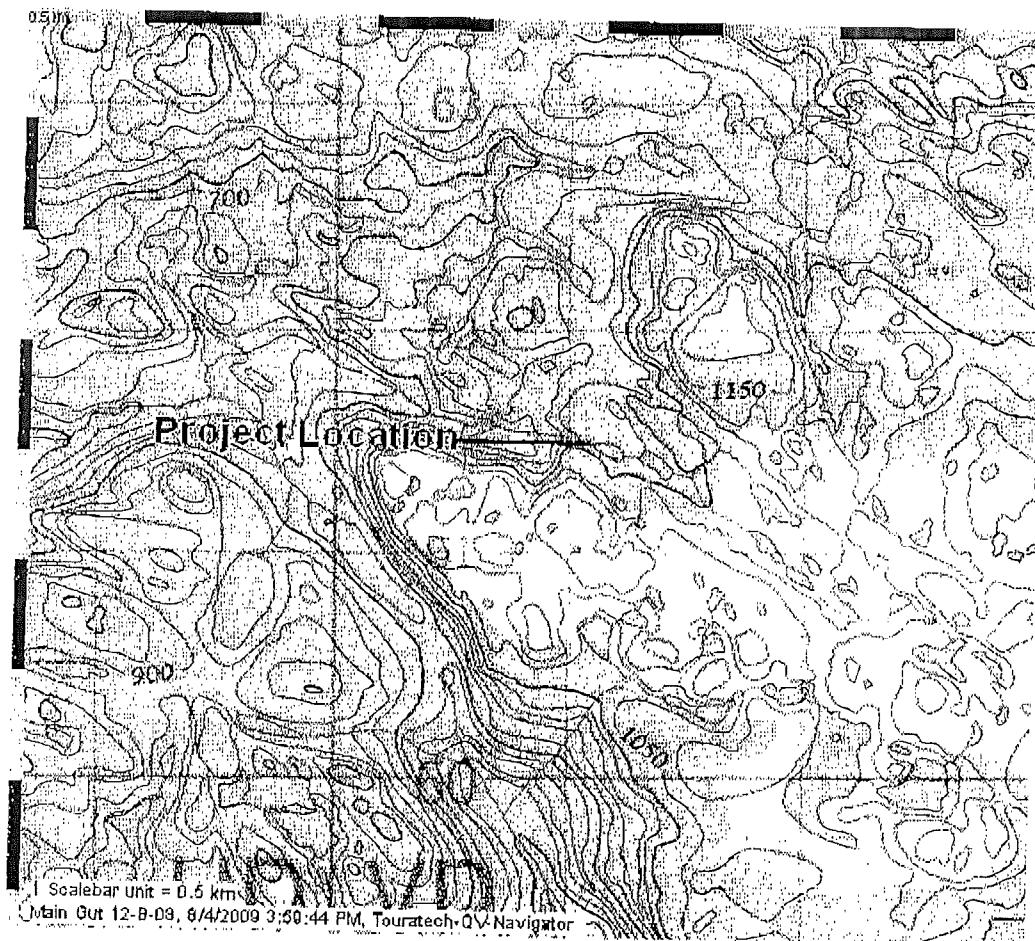
cc: File Copy for Binder

cc: Ms. Michelle Roberge  
Section Head, Habitat Planning and Operations  
Marine Environment and Habitat Management Division  
Department of Fisheries and Oceans  
PO Box 5667  
St. John's NL A1C 5X1

cc: Mr. Clyde McLean, P. Eng.  
Manager, Water Investigations Section  
Water Resources Management Division  
Department of Environment and Conservation

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR  
Department of Environment and Conservation

Permit No: ALT4759

APPENDIX C  
Location Map for Environmental Permit

GOVERNMENT OF NEWFOUNDLAND AND LABRADORS  
Department of Environment and Conservation

Permit No: ALT4759

APPENDIX A  
Terms and Conditions for Environmental Permit

## Bay St. George - Quarry Dewatering

**General Alterations**

1. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
2. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
3. Water pumped from excavations or work areas, or any runoff or effluent directed out of work sites, must have silt and turbidity removed by settling ponds, filtration, or other suitable treatment before discharging to a body of water. Effluent discharged into receiving waters must comply with the *Environmental Control Water and Sewage Regulations, 2003*.
4. All operations must be carried out in a manner that prevents damage to land, vegetation, and watercourses, and which prevents pollution of bodies of water.
5. The use of heavy equipment in streams or bodies of water is not permitted. The operation of heavy equipment must be confined to dry stable areas.
6. All vehicles and equipment must be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality.
7. Any areas adversely affected by this project must be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if considered necessary in the opinion of the Department.
8. The bed, banks and floodplains of watercourses, or other vulnerable areas affected by this project, must be adequately protected from erosion by seeding, sodding or placing of rip-rap.
9. All waste materials resulting from this project must be disposed of at a site approved by the regional Government Service Centre of the Department of Government Services.
10. Rock fill material must be obtained from an approved quarry site. It must not be taken from beaches or streams, and must not be dredged from a body of water.
11. Sediment and erosion control measures must be installed before starting work. All control measures must be inspected regularly and any necessary repairs made if damage is discovered.
12. Rock fill material must be of good quality, free of fines or other substances including metals, organics, or chemicals that may be harmful to the receiving waters.
13. The attached Completion Report (Appendix B) for Permit No. 4759 must be completed and returned to this Department upon completion of the approved works.
14. This Permit is valid for two years from the date of issue. Work must be completed by that date or the application and approval procedure must be repeated.
15. The location of the work is highlighted on the Location Map for this Permit attached as Appendix C.



Government of Newfoundland and Labrador  
Department of Environment and Conservation  
Water Resources Management Division

## Appendix B - Completion Report

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, Section(s) 48

Date: **AUGUST 06, 2009** File No: **526**  
Proponent: **Pennecon Limited** Permit No: **ALT4759**  
PO Box 8274, Station 'A'  
1309 Topsail Road  
St. John's NL A1B 3N4

Attention: **Roderick Mercer**

Re: **Bay St. George - Quarry Dewatering**

Permission was given for: placement of rock mattress at the discharge point of the pumps to dewater two (2) quarry pits to facilitate quarry assessment in the Bay St. George area, with reference to the application dated August 4, 2009.

*I (the proponent named above) do hereby certify that the project described above was completed in accordance with the plans and specifications submitted to the Department of Environment and Conservation and that the work was carried out in strict compliance with the terms and conditions of the Permit issued for this project.*

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

This completion report must be completed and forwarded to the following address upon completion of the approved work.

Department of Environment and Conservation  
Water Resources Management Division  
PO Box 8700  
St. John's NL A1B 4J6

Your Project #: D327  
 Your C.O.C. #: 24155

**Attention: Deidre Puddister**

Lorax Environmental Services Ltd.  
 215 Water Street  
 Suite 504, Box 4  
 St. John's, NL  
 CANADA A1C 6C9

**Report Date: 2009/08/13**

This report supersedes all previous reports with the same Maxxam job number

**CERTIFICATE OF ANALYSIS**
**MAXXAM JOB #: A991176**
**Received: 2009/07/18, 11:52**

Sample Matrix: Water

# Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory	Method Reference
Carbonate, Bicarbonate and Hydroxide	2	N/A	2009/07/27		
Alkalinity	2	N/A	2009/07/27	ATL SOP 00013 R4	Based on EPA310.2
Chloride	2	N/A	2009/07/27	ATL SOP 00014 R6	Based on SM4500-Cl
Colour	2	N/A	2009/07/27	ATL SOP 00020 R3.	Based on SM2120C
Conductance - water	2	N/A	2009/07/27	ATL SOP 00004 R4/00006 R4	Based on SM2510B
Hardness (calculated as CaCO3)	2	N/A	2009/07/29	ATL SOP 00048	Based on SM2340B
Mercury - Total (CVAA,LL)	2	N/A	2009/08/04	ATL SOP 00026 R5	Based on EPA245.1
Metals Water Total OES - Partial Scan	2	N/A	2009/07/28	ATL SOP 00025 R4	Based on EPA200.7
Metals Water Total MS	2	N/A	2009/07/22	ATL SOP 00024 R4	Based on EPA6020A
Ion Balance (% Difference)	2	N/A	2009/07/29		
Anion and Cation Sum	2	N/A	2009/07/29		
Nitrogen Ammonia - water	2	N/A	2009/07/23	ATL SOP 00015 R5	Based on USEPA 350.1
Nitrogen - Nitrate + Nitrite	2	N/A	2009/07/28	ATL SOP 00016 R4	Based on USGS - Enz.
Nitrogen - Nitrite	2	N/A	2009/07/27	ATL SOP 00017 R4	Based on USEPA 354.1
Nitrogen - Nitrate (as N)	2	N/A	2009/07/28	ATL SOP 00018 R3	Based on ASTM D3867
pH	2	N/A	2009/07/27	ATL SOP 00003 R5/00005 R6	Based on EPA150.1
Phosphorus - ortho	2	N/A	2009/07/28	ATL SOP 00021 R3	Based on USEPA 365.1
Sat. pH and Langelier Index (@ 20C)	2	N/A	2009/07/29		
Sat. pH and Langelier Index (@ 4C)	2	N/A	2009/07/29		
Reactive Silica	2	N/A	2009/07/27	ATL SOP 00022 R3	Based on EPA 366.0
Sulphate	2	N/A	2009/07/27	ATL SOP 00023 R3	Based on EPA 375.4
Radium 226 in W (Sub from Bedford) (1)	2	2009/07/22	2009/08/13		
Total Dissolved Solids (TDS calc)	2	N/A	2009/07/29		
Organic carbon - Total (TOC)	2	N/A	2009/08/04	ATL SOP 00037 R3	Based on SM5310C
Total Suspended Solids	1	N/A	2009/07/21	ATL SOP 00007 R3	based on EPA 160.2
Total Suspended Solids	1	N/A	2009/07/22	ATL SOP 00007 R3	based on EPA 160.2
Turbidity	2	N/A	2009/07/29	ATL SOP 00011 R4	based on EPA 180.1

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bedford to SRC Subcontract

. /2

Your Project #: D327  
Your C.O.C. #: 24155

**Attention: Deidre Puddister**

Lorax Environmental Services Ltd.  
215 Water Street  
Suite 504, Box 4  
St. John's, NL  
CANADA A1C 6C9

**Report Date: 2009/08/13**

This report supersedes all previous reports with the same Maxxam job number

**CERTIFICATE OF ANALYSIS**

-2-

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MAJA MALBASIC, Project Manager  
Email: Maja.Malbasic.Reports@MaxxamAnalytics.com  
Phone# (902) 420-0203

=====  
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 2

Page 2 of 12

This document is in electronic format, hard copy is available on request.

**ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)**

Maxxam ID		DD0973		DD0985		
Sampling Date		2009/07/14 9:00		2009/07/15 10:00		
COC Number		24155		24155		
Units	QUARRY 1**	RDL	QUARRY 2**	RDL	QC Batch	

<b>Calculated Parameters</b>						
Anion Sum	me/L	2.13	N/A	0.580	N/A	1883871
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	78	1	19	1	1883867
Calculated TDS	mg/L	120	1	35	1	1883874
Carb. Alkalinity (calc. as CaCO3)	mg/L	ND	1	ND	1	1883867
Cation Sum	me/L	2.14	N/A	0.630	N/A	1883871
Hardness (CaCO3)	mg/L	95	1	23	1	1883869
Ion Balance (% Difference)	%	0.230	N/A	4.13	N/A	1883870
Langelier Index (@ 20C)	N/A	-0.0160		-1.92		1883872
Langelier Index (@ 4C)	N/A	-0.266		-2.18		1883873
Nitrate (N)	mg/L	0.40	0.05	0.10	0.05	1883896
Saturation pH (@ 20C)	N/A	7.97		9.15		1883872
Saturation pH (@ 4C)	N/A	8.22		9.41		1883873
<b>Inorganics</b>						
Total Alkalinity (Total as CaCO3)	mg/L	79	5	19	5	1889485
Dissolved Chloride (Cl)	mg/L	5	1	5	1	1889487
Colour	TCU	ND	5	67	30	1889490
Nitrate + Nitrite	mg/L	0.40	0.05	0.10	0.05	1889492
Nitrite (N)	mg/L	ND	0.01	ND	0.01	1889493
Nitrogen (Ammonia Nitrogen)	mg/L	ND	0.05	ND	0.05	1887222
Total Organic Carbon (C)	mg/L	1.6	0.5	5.6	0.5	1896639
Orthophosphate (P)	mg/L	ND	0.01	ND	0.01	1889491
pH	pH	7.95	N/A	7.23	N/A	1889503
Reactive Silica (SiO2)	mg/L	5.9	0.5	3.2	0.5	1889489
Dissolved Sulphate (SO4)	mg/L	19	2	2	2	1889488
Turbidity	NTU	0.6	0.1	0.6	0.1	1891977
Conductivity	uS/cm	200	1	69	1	1889505
<b>Metals</b>						
Total Calcium (Ca)	mg/L	31	0.1	7.2	0.1	1890958
Total Magnesium (Mg)	mg/L	4.1	0.1	1.2	0.1	1890958
Total Phosphorus (P)	mg/L	ND	0.1	ND	0.1	1890958
Total Potassium (K)	mg/L	2.1	0.1	0.5	0.1	1890958
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: A991176  
Report Date: 2009/08/13

Lorax Environmental Services Ltd.  
Client Project #: D327

**ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)**

Maxxam ID		DD0973		DD0985		
Sampling Date		2009/07/14 9:00		2009/07/15 10:00		
COC Number		24155		24155		
	Units	QUARRY 1**	RDL	QUARRY 2**	RDL	QC Batch

Total Sodium (Na)	mg/L	4.3	0.1	3.6	0.1	1890958
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RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: A991176  
Report Date: 2009/08/13

Lorax Environmental Services Ltd.  
Client Project #: D327

### RESULTS OF ANALYSES OF WATER

Maxxam ID		DD0973		DD0985		
Sampling Date		2009/07/14 9:00		2009/07/15 10:00		
COC Number		24155		24155		
	Units	QUARRY 1**	QC Batch	QUARRY 2**	RDL	QC Batch

<b>Inorganics</b>						
Total Suspended Solids	mg/L	1	1883821	ND	1	1885087
<b>Subcontracted Analysis</b>						
Subcontract Parameter	N/A	ATTACHED	1885474	ATTACHED	N/A	1885474

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: A991176  
Report Date: 2009/08/13

Lorax Environmental Services Ltd.  
Client Project #: D327

**MERCURY BY COLD VAPOUR AA (WATER)**

Maxxam ID		DD0973	DD0985		
Sampling Date		2009/07/14 9:00	2009/07/15 10:00		
COC Number		24155	24155		
	<b>Units</b>	<b>QUARRY 1**</b>	<b>QUARRY 2**</b>	<b>RDL</b>	<b>QC Batch</b>

Metals					
Total Mercury (Hg)	ug/L	ND	ND	0.013	1896777

ND = Not detected

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

**ELEMENTS BY ICP/MS (WATER)**

Maxxam ID		DD0973	DD0985		
Sampling Date		2009/07/14 9:00	2009/07/15 10:00		
COC Number		24155	24155		
Units	<b>QUARRY 1**</b>	<b>QUARRY 2**</b>	<b>RDL</b>	<b>QC Batch</b>	

Metals					
Total Aluminum (Al)	ug/L	31	150	10	1886419
Total Antimony (Sb)	ug/L	ND	ND	2	1886419
Total Arsenic (As)	ug/L	5	ND	2	1886419
Total Barium (Ba)	ug/L	14	6	5	1886419
Total Beryllium (Be)	ug/L	ND	ND	2	1886419
Total Bismuth (Bi)	ug/L	ND	ND	2	1886419
Total Boron (B)	ug/L	ND	ND	5	1886419
Total Cadmium (Cd)	ug/L	ND	ND	0.3	1886419
Total Chromium (Cr)	ug/L	ND	ND	2	1886419
Total Cobalt (Co)	ug/L	ND	ND	1	1886419
Total Copper (Cu)	ug/L	ND	ND	2	1886419
Total Iron (Fe)	ug/L	ND	ND	50	1886419
Total Lead (Pb)	ug/L	ND	ND	0.5	1886419
Total Manganese (Mn)	ug/L	ND	ND	2	1886419
Total Molybdenum (Mo)	ug/L	ND	ND	2	1886419
Total Nickel (Ni)	ug/L	3	ND	2	1886419
Total Selenium (Se)	ug/L	ND	ND	2	1886419
Total Silver (Ag)	ug/L	ND	ND	0.5	1886419
Total Strontium (Sr)	ug/L	66	19	5	1886419
Total Thallium (Tl)	ug/L	ND	ND	0.1	1886419
Total Tin (Sn)	ug/L	ND	ND	2	1886419
Total Titanium (Ti)	ug/L	ND	ND	2	1886419
Total Uranium (U)	ug/L	1.5	ND	0.1	1886419
Total Vanadium (V)	ug/L	4	ND	2	1886419
Total Zinc (Zn)	ug/L	8	10	5	1886419
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: A991176  
Report Date: 2009/08/13

Lorax Environmental Services Ltd.  
Client Project #: D327

**GENERAL COMMENTS**

**Results relate only to the items tested.**

Lorax Environmental Services Ltd.  
 Attention: Deidre Puddister  
 Client Project #: D327  
 P.O. #:  
 Project name:

Quality Assurance Report  
 Maxxam Job Number: DA991176

QA/QC Batch Num/Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1883821 ZZH	QC Standard	Total Suspended Solids	2009/07/21	99	%	80 - 120	
	Method Blank	Total Suspended Solids	2009/07/21	ND, RDL=1	mg/L		
	RPD	Total Suspended Solids	2009/07/21	3.6	%	25	
1885087 ZZH	QC Standard	Total Suspended Solids	2009/07/22	97	%	80 - 120	
	Method Blank	Total Suspended Solids	2009/07/22	ND, RDL=1	mg/L		
1886419 KGU	QC Standard	Total Aluminum (Al)	2009/07/22	101	%	80 - 120	
		Total Antimony (Sb)	2009/07/22	104	%	80 - 120	
		Total Arsenic (As)	2009/07/22	96	%	80 - 120	
		Total Barium (Ba)	2009/07/22	98	%	80 - 120	
		Total Beryllium (Be)	2009/07/22	104	%	80 - 120	
		Total Boron (B)	2009/07/22	94	%	80 - 120	
		Total Cadmium (Cd)	2009/07/22	96	%	80 - 120	
		Total Chromium (Cr)	2009/07/22	96	%	80 - 120	
		Total Cobalt (Co)	2009/07/22	102	%	80 - 120	
		Total Copper (Cu)	2009/07/22	99	%	80 - 120	
		Total Iron (Fe)	2009/07/22	119	%	80 - 120	
		Total Lead (Pb)	2009/07/22	97	%	80 - 120	
		Total Manganese (Mn)	2009/07/22	99	%	80 - 120	
		Total Molybdenum (Mo)	2009/07/22	101	%	80 - 120	
		Total Nickel (Ni)	2009/07/22	101	%	80 - 120	
		Total Selenium (Se)	2009/07/22	87	%	80 - 120	
		Total Strontium (Sr)	2009/07/22	100	%	80 - 120	
		Total Thallium (Tl)	2009/07/22	108	%	80 - 120	
		Total Uranium (U)	2009/07/22	78 (1)	%	80 - 120	
		Total Vanadium (V)	2009/07/22	98	%	80 - 120	
		Total Zinc (Zn)	2009/07/22	95	%	80 - 120	
Spiked Blank	QC Standard	Total Aluminum (Al)	2009/07/22	109	%	80 - 120	
		Total Antimony (Sb)	2009/07/22	96	%	80 - 120	
		Total Arsenic (As)	2009/07/22	94	%	80 - 120	
		Total Barium (Ba)	2009/07/22	100	%	80 - 120	
		Total Beryllium (Be)	2009/07/22	101	%	80 - 120	
		Total Bismuth (Bi)	2009/07/22	97	%	80 - 120	
		Total Boron (B)	2009/07/22	96	%	80 - 120	
		Total Cadmium (Cd)	2009/07/22	93	%	80 - 120	
		Total Chromium (Cr)	2009/07/22	100	%	80 - 120	
		Total Cobalt (Co)	2009/07/22	99	%	80 - 120	
		Total Copper (Cu)	2009/07/22	102	%	80 - 120	
		Total Lead (Pb)	2009/07/22	99	%	80 - 120	
		Total Manganese (Mn)	2009/07/22	99	%	80 - 120	
		Total Molybdenum (Mo)	2009/07/22	99	%	80 - 120	
		Total Nickel (Ni)	2009/07/22	100	%	80 - 120	
		Total Selenium (Se)	2009/07/22	91	%	80 - 120	
		Total Silver (Ag)	2009/07/22	100	%	80 - 120	
		Total Strontium (Sr)	2009/07/22	98	%	80 - 120	
		Total Thallium (Tl)	2009/07/22	99	%	80 - 120	
Method Blank	QC Standard	Total Tin (Sn)	2009/07/22	95	%	80 - 120	
		Total Titanium (Ti)	2009/07/22	102	%	80 - 120	
		Total Uranium (U)	2009/07/22	97	%	80 - 120	
		Total Vanadium (V)	2009/07/22	101	%	80 - 120	
		Total Zinc (Zn)	2009/07/22	100	%	80 - 120	
Method Blank	Method Blank	Total Aluminum (Al)	2009/07/22	ND, RDL=10	ug/L		
		Total Antimony (Sb)	2009/07/22	ND, RDL=2	ug/L		
		Total Arsenic (As)	2009/07/22	ND, RDL=2	ug/L		
		Total Barium (Ba)	2009/07/22	ND, RDL=5	ug/L		
		Total Beryllium (Be)	2009/07/22	ND, RDL=2	ug/L		

Lorax Environmental Services Ltd.  
 Attention: Deidre Puddister  
 Client Project #: D327  
 P.O. #:  
 Project name:

### Quality Assurance Report (Continued)

Maxxam Job Number: DA991176

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1886419	KGU	Method Blank	Total Bismuth (Bi)	2009/07/22	ND, RDL=2	ug/L	
			Total Boron (B)	2009/07/22	ND, RDL=5	ug/L	
			Total Cadmium (Cd)	2009/07/22	ND, RDL=0.3	ug/L	
			Total Chromium (Cr)	2009/07/22	ND, RDL=2	ug/L	
			Total Cobalt (Co)	2009/07/22	ND, RDL=1	ug/L	
			Total Copper (Cu)	2009/07/22	ND, RDL=2	ug/L	
			Total Iron (Fe)	2009/07/22	ND, RDL=50	ug/L	
			Total Lead (Pb)	2009/07/22	ND, RDL=0.5	ug/L	
			Total Manganese (Mn)	2009/07/22	ND, RDL=2	ug/L	
			Total Molybdenum (Mo)	2009/07/22	ND, RDL=2	ug/L	
			Total Nickel (Ni)	2009/07/22	ND, RDL=2	ug/L	
			Total Selenium (Se)	2009/07/22	ND, RDL=2	ug/L	
			Total Silver (Ag)	2009/07/22	ND, RDL=0.5	ug/L	
			Total Strontium (Sr)	2009/07/22	ND, RDL=5	ug/L	
			Total Thallium (Tl)	2009/07/22	ND, RDL=0.1	ug/L	
			Total Tin (Sn)	2009/07/22	ND, RDL=2	ug/L	
			Total Titanium (Ti)	2009/07/22	ND, RDL=2	ug/L	
			Total Uranium (U)	2009/07/22	ND, RDL=0.1	ug/L	
			Total Vanadium (V)	2009/07/22	ND, RDL=2	ug/L	
			Total Zinc (Zn)	2009/07/22	ND, RDL=5	ug/L	
1887222	DLB	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2009/07/24	99	%	80 - 120
		QC Standard	Nitrogen (Ammonia Nitrogen)	2009/07/23	105	%	80 - 120
		Spiked Blank	Nitrogen (Ammonia Nitrogen)	2009/07/23	101	%	80 - 120
		Method Blank	Nitrogen (Ammonia Nitrogen)	2009/07/23	ND, RDL=0.05	mg/L	
		RPD	Nitrogen (Ammonia Nitrogen)	2009/07/24	NC	%	25
1889485	MCN	Matrix Spike	Total Alkalinity (Total as CaCO3)	2009/07/27	NC	%	80 - 120
		QC Standard	Total Alkalinity (Total as CaCO3)	2009/07/27	102	%	80 - 120
		Spiked Blank	Total Alkalinity (Total as CaCO3)	2009/07/27	108	%	80 - 120
		Method Blank	Total Alkalinity (Total as CaCO3)	2009/07/27	ND, RDL=5	mg/L	
		RPD	Total Alkalinity (Total as CaCO3)	2009/07/27	NC	%	25
1889487	MCN	Matrix Spike	Dissolved Chloride (Cl)	2009/07/27	103	%	80 - 120
		QC Standard	Dissolved Chloride (Cl)	2009/07/27	106	%	80 - 120
		Spiked Blank	Dissolved Chloride (Cl)	2009/07/27	103	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2009/07/27	ND, RDL=1	mg/L	
		RPD	Dissolved Chloride (Cl)	2009/07/27	6.4	%	25
1889488	JOA	Matrix Spike	Dissolved Sulphate (SO4)	2009/07/27	94	%	80 - 120
		QC Standard	Dissolved Sulphate (SO4)	2009/07/27	93	%	80 - 120
		Spiked Blank	Dissolved Sulphate (SO4)	2009/07/27	95	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2009/07/27	ND, RDL=2	mg/L	
		RPD	Dissolved Sulphate (SO4)	2009/07/27	NC	%	25
1889489	MCN	Matrix Spike	Reactive Silica (SiO2)	2009/07/27	NC	%	80 - 120
		QC Standard	Reactive Silica (SiO2)	2009/07/28	101	%	75 - 125
		Spiked Blank	Reactive Silica (SiO2)	2009/07/28	100	%	80 - 120
		Method Blank	Reactive Silica (SiO2)	2009/07/28	ND, RDL=0.5	mg/L	
		RPD	Reactive Silica (SiO2)	2009/07/27	1.4	%	25
1889490	MCN	QC Standard	Colour	2009/07/27	105	%	80 - 120
		Method Blank	Colour	2009/07/27	ND, RDL=5	TCU	
		RPD	Colour	2009/07/27	NC	%	25
1889491	JOA	Matrix Spike	Orthophosphate (P)	2009/07/28	95	%	80 - 120
		QC Standard	Orthophosphate (P)	2009/07/28	98	%	80 - 120
		Spiked Blank	Orthophosphate (P)	2009/07/28	95	%	80 - 120
		Method Blank	Orthophosphate (P)	2009/07/28	ND, RDL=0.01	mg/L	
		RPD	Orthophosphate (P)	2009/07/28	NC	%	25
1889492	JOA	Matrix Spike	Nitrate + Nitrite	2009/07/28	95	%	80 - 120
		QC Standard	Nitrate + Nitrite	2009/07/28	98	%	80 - 120

Lorax Environmental Services Ltd.  
 Attention: Deidre Puddister  
 Client Project #: D327  
 P.O. #:  
 Project name:

## Quality Assurance Report (Continued)

Maxxam Job Number: DA991176

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1889492 JOA	Spiked Blank	Nitrate + Nitrite	2009/07/28	97	%	80 - 120	
	Method Blank	Nitrate + Nitrite	2009/07/28	ND, RDL=0.05	mg/L		
	RPD	Nitrate + Nitrite	2009/07/28	NC	%	25	
1889493 MCN	Matrix Spike	Nitrite (N)	2009/07/27	97	%	80 - 120	
	QC Standard	Nitrite (N)	2009/07/27	100	%	80 - 120	
	Spiked Blank	Nitrite (N)	2009/07/27	104	%	80 - 120	
	Method Blank	Nitrite (N)	2009/07/27	ND, RDL=0.01	mg/L		
	RPD	Nitrite (N)	2009/07/27	NC	%	25	
1889503 ARS	QC Standard	pH	2009/07/27	101	%	80 - 120	
	Method Blank	pH	2009/07/27	5.96, RDL=0	pH		
	RPD [DD0985-01]	pH	2009/07/27	1.4	%	25	
1889505 ARS	QC Standard	Conductivity	2009/07/27	105	%	80 - 120	
	Method Blank	Conductivity	2009/07/27	ND, RDL=1	uS/cm		
	RPD [DD0985-01]	Conductivity	2009/07/27	0.6	%	25	
1890958 SSI	Matrix Spike	Total Calcium (Ca)	2009/07/28	96	%	80 - 120	
		Total Magnesium (Mg)	2009/07/28	94	%	80 - 120	
		Total Phosphorus (P)	2009/07/28	102	%	80 - 120	
		Total Potassium (K)	2009/07/28	103	%	80 - 120	
		Total Sodium (Na)	2009/07/28	NC	%	80 - 120	
		Total Calcium (Ca)	2009/07/28	99	%	80 - 120	
		Total Magnesium (Mg)	2009/07/28	96	%	80 - 120	
		Total Phosphorus (P)	2009/07/28	99	%	80 - 120	
		Total Potassium (K)	2009/07/28	103	%	80 - 120	
	QC Standard	Total Sodium (Na)	2009/07/28	102	%	80 - 120	
		Total Calcium (Ca)	2009/07/28	97	%	80 - 120	
		Total Magnesium (Mg)	2009/07/28	94	%	80 - 120	
		Total Phosphorus (P)	2009/07/28	101	%	80 - 120	
		Total Potassium (K)	2009/07/28	101	%	80 - 120	
		Total Sodium (Na)	2009/07/28	101	%	80 - 120	
		Total Calcium (Ca)	2009/07/28	ND, RDL=0.1	mg/L		
		Total Magnesium (Mg)	2009/07/28	ND, RDL=0.1	mg/L		
		Total Phosphorus (P)	2009/07/28	ND, RDL=0.1	mg/L		
1891977 JRC	Method Blank	Total Potassium (K)	2009/07/28	ND, RDL=0.1	mg/L		
		Total Sodium (Na)	2009/07/28	ND, RDL=0.1	mg/L		
		Total Calcium (Ca)	2009/07/28	1.2	%	25	
	RPD	Total Magnesium (Mg)	2009/07/28	0.7	%	25	
		Total Phosphorus (P)	2009/07/28	NC	%	25	
		Total Potassium (K)	2009/07/28	0.8	%	25	
	Turbidity	Total Sodium (Na)	2009/07/28	1.8	%	25	
		Turbidity	2009/07/29	99	%	80 - 120	
		Turbidity	2009/07/29	ND, RDL=0.1	NTU		
1896639 KMC	Matrix Spike	Turbidity	2009/07/29	NC	%	25	
	QC Standard	Total Organic Carbon (C)	2009/08/04	124	%	75 - 125	
	Spiked Blank	Total Organic Carbon (C)	2009/08/04	116	%	80 - 120	
	Method Blank	Total Organic Carbon (C)	2009/08/04	106	%	75 - 125	
	RPD	Total Organic Carbon (C)	2009/08/04	ND, RDL=0.5	mg/L		
1896777 AMC	Matrix Spike	Total Organic Carbon (C)	2009/08/04	NC	%	25	
	QC Standard	Total Mercury (Hg)	2009/08/04	99	%	80 - 120	
	Spiked Blank	Total Mercury (Hg)	2009/08/04	101	%	80 - 120	
	Method Blank	Total Mercury (Hg)	2009/08/04	89	%	80 - 120	
	RPD	Total Mercury (Hg)	2009/08/04	ND, RDL=0.013	ug/L		
		Total Mercury (Hg)	2009/08/04	NC	%	25	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Lorax Environmental Services Ltd.  
Attention: Deidre Puddister  
Client Project #: D327  
P.O. #:  
Project name:

### Quality Assurance Report (Continued)

Maxxam Job Number: DA991176

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) Typical recovery for RM matrix.

**SRC ANALYTICAL**

422 Downey Road  
Saskatoon, Saskatchewan, S7N 4N1  
(306) 933-6932 or 1-800-240-8808  
Fax: (306) 933-7922

Maxxam Analytics  
200 Bluewater Road  
Halifax / Bedford, Nova Scotia B4B 1G9  
Attn: Subcontract Coordinator

Date Samples Received: Jul-22-2009 Client P.O.: JOB#A991176

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Analysis has been reviewed by:

  
\_\_\_\_\_  
Dave Chorney  
Radiochemistry and SLOWPOKE II Supervisor

- \* Test methods and data are validated by the laboratory's Quality Assurance Program.
- \* Routine methods follow recognized procedures from sources such as
  - \* Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF
  - \* Environment Canada
  - \* US EPA
  - \* CANMET
- \* The results reported relate only to the test samples as provided by the client.
- \* Samples will be kept for 30 days after the final report is sent. Please contact the lab if you have any special requirements.
- \* Additional information is available upon request.

**SRC ANALYTICAL**

422 Downey Road  
Saskatoon, Saskatchewan S7N 4N1  
(306) 933-6932 1-800-240-8808

Maxxam Analytics  
200 Bluewater Road  
Halifax / Bedford, Nova Scotia B4B 1G9  
Attn: Subcontract Coordinator

Aug-06-2009

Date Samples Received: Jul-22-2009 Client P.O.: JOB#A991176

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SAMPLE	CLIENT DESCRIPTION
32262 7/14/2009	DD0973-02R\QUARRY 1** *WATER*

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ANALYTE	UNITS	RESULT
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## RADIO CHEMISTRY

Radium-226	Bq/L	<0.005
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"<": not detected at level stated above

***SRC ANALYTICAL***

Maxxam Analytics

Aug-06-2009

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SAMPLE	CLIENT DESCRIPTION
32263	7/15/2009 DD0985-02R\QUARRY 2** *WATER*

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ANALYTE	UNITS	RESULT
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## RADIO CHEMISTRY

Radium-226	Bq/L	0.01
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MAXXAM ANALYTICS  
200 Bluewater Road  
Bedford, Nova Scotia, B4B 1G9  
Phone: (902) 420-0203  
Fax: (902) 420-8612



Page #: 1

Maxxam PM Maja Malbasic

**To: Bedford to SRC Subcontract**

**Job# A991176**

Yes  No Charge us Rush charges (If rush charges are required to meet due date and Yes box is not checked, please call us)  
 Yes  No International Sample/BioHazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)  
 Yes  No Special Protocol (if yes, Protocol \_\_\_\_\_)

Received @ Subcontract Lab by (sign) \_\_\_\_\_ (print) \_\_\_\_\_

Received @ Subcontract Lab (Date) \_\_\_\_\_ (Time) \_\_\_\_\_

Received Lab's Job # \_\_\_\_\_ Inspected by (print) \_\_\_\_\_

Upon receipt, record 3 temperatures for **each** package/cooler. If required by contract or legal sample, indicate if custody sealed.

Temp1 \_\_\_\_\_ Temp2 \_\_\_\_\_ Temp3 \_\_\_\_\_ Custody sealed \_\_\_\_\_

<u>Sample ID</u>	<u>Matrix</u>	<u>Test(s) Required</u>	<u>Container</u>	<u>Date Sampled</u>	<u>Date Required</u>
DD0973-02R \ QUARRY 1**	W	Radium 226 in W (Sub from Bedford)	2	2009/07/14	2009/08/12
DD0985-02R \ QUARRY 2**	W	Radium 226 in W (Sub from Bedford)	2	2009/07/15	2009/08/12

**NOTES:**

- 1) Please call us if due date cannot be met. Please reference Sample ID on your report.
- 2) Include copy of this completed form & signed final report to [Maja.Malbasic.Reports@MaxxamAnalytics.com](mailto:Maja.Malbasic.Reports@MaxxamAnalytics.com), and to [Bedford.SubContract@MaxxamAnalytics.com](mailto:Bedford.SubContract@MaxxamAnalytics.com)

Correct Location  Hold times okay  
 Bottle types added  Shipping Inst OK  
 Correct Tests vs COC  recorded in log  
 Rush okayed by lab  correct Ids vs COC  
Checker MC

**SHIPPING INSTRUCTIONS**

Ship Immediately (highlight Yellow)  
 Requires 9am  
 Requires Sat. Delivery  
 Regular Ship next available day  
Sender (Print) Maja Malbasic Initial MC

Ship Cold  
 Ship Room Temp  
 Ship Frozen

**SHIPPING DEPARTMENT CHECKLIST**

Correct Shipping location  
 Correct Sample Ids (Paperwork vs Bottles)  
 Yes  No Special-Cooler, Ice, Tape-custody seal, Date&Sign  
Date Shipped \_\_\_\_\_  
Shipper (Print) \_\_\_\_\_ Initial \_\_\_\_\_

**APPENDIX B**  
**B1: Quarry Permit Application**

APPLICATION FOR A QUARRY PERMIT

I/We Pennecon Limited  
Address 1309 Topsail Road P.O.Box 8274 St John's Postal Code A1B 3N4  
HEREBY APPLY FOR A QUARRY PERMIT for 10.8 hectares for 12 months under the terms and conditions of the *Quarry Materials Act, 1998, SNL1998.*

Have you had permits for this site before? NO If yes, list permit numbers \_\_\_\_\_

If you are applying for a permit to the same area you held under permit last year complete this section only .

File # \_\_\_\_\_ Previous Permit # \_\_\_\_\_

I certify that there are no changes or modifications to the size, boundary or location of the existing quarry permit area, or to the method of removal or processing planned at the location.

**Note:** *If there are any changes to the size of the quarry, the method of removal or processing, a new application must be completed for the site.*

Date: \_\_\_\_\_ Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Position: \_\_\_\_\_

Complete this section if the material is needed for a specific contract.

Agency awarding contract \_\_\_\_\_  
Address \_\_\_\_\_ Phone No. \_\_\_\_\_  
Contract No. \_\_\_\_\_ Tender closing date \_\_\_\_\_  
Anticipated starting date \_\_\_\_\_ Anticipated completion date \_\_\_\_\_  
Amount of material req'd: Class "A" \_\_\_\_\_ Class "B" \_\_\_\_\_  
Asphalt aggregate \_\_\_\_\_ Other (specify) \_\_\_\_\_

Proposed end use of material Heavy Ballast

Location of end use material Local and national markets

FOR THE PURPOSE OF REMOVING:

- Sand
- Gravel
- Rock
- Borrow Material
- Fuel Peat
- Horticulture Peat
- Stockpiled Material
- Other (Specify) Magnetite

THE QUARRY OPERATION WILL INVOLVE:

- Drilling and Blasting
- Ripping
- Crushing
- Screening
- Washing
- Use of Settling Ponds
- Pit run removal
- Asphalt Batch Plant
- Concrete Batch Plant
- Other (Specify) Magnetic Separation

Ownership of land to the best of your knowledge  Crown  Private

If Private, complete the following and attach a letter from the owner authorizing you to occupy the property for the purpose of removing quarry material; confirmation of title and ownership must be included.

Name of Owner \_\_\_\_\_  
Address \_\_\_\_\_ Phone No. \_\_\_\_\_

Form of Title

Crown Grant \_\_\_\_\_, Date Issued \_\_\_\_\_, Volume \_\_\_\_\_, Folio \_\_\_\_\_  
Crown Lease \_\_\_\_\_, Date Issued \_\_\_\_\_, Number \_\_\_\_\_  
Other (Specify) \_\_\_\_\_

At the time of application, the site being applied for must be clearly marked on the ground using 2 x 4 posts, with a company sign and flagging to mark the corners, and to outline the area.

Is the site visible from nearby highways or main roads? NO

Is there an existing access to the quarry site? YES

Describe the type of vegetation cover over the area to be quarried (forest, scrub, barren, etc.)

Barrens

Describe marking if any in addition to the above required markings \_\_\_\_\_

Is the site being applied for an existing quarry? YES If yes, what are the dimensions of the quarry?

Width 50 Length 150 Average height of quarry faces 10 m

Are there any structures (house, fence, pole line, etc.) within the boundaries of the quarry site? NO

If yes, describe the structures and give their distance from the site. \_\_\_\_\_

Are there any brooks, rivers, ponds or streams within the boundaries of the quarry site? NO

If yes, specify type of water body \_\_\_\_\_

Are there any brooks, rivers, ponds or streams within a 200 metre radius of the boundaries of the quarry site? YES

If yes, specify type of water body and give its distance from the site Small pond and stream

Is any of the land within a 300 metre radius of the boundaries of the quarry site being used? NO

If yes, describe the land use and give the distance from the site \_\_\_\_\_

Describe the location of the proposed Quarry with reference to the UTM grid (NAD 1927) on the 1:50,000 Topographic Map. Description must include NTS Map Sheet, zone and the co-ordinates. The UTM co-ordinate should be taken at the entrance to the quarry.

401 450 E 5361 700 N Zone 21 Map Sheet 123/8

Describe the location of the proposed Quarry with reference to nearby prominent landmarks (road intersections, bridges, etc.) to nearest tenth of a kilometre 8 Km East of the St. George's Intersection

The information in this section can be completed by using a Global Positioning System. Inaccurate information will cause delays.

### SKETCH OF QUARRY SITE

In the space below, draw a sketch showing the boundaries and distance between corners of the site being applied for, outline of existing quarry if one exists, distances of all features within the quarry site and all features within a 300 metre radius of the boundaries of the quarry site. That is, the location of the features listed in Section 7 of this application. Also, show the proposed access to the site, the distance the quarry site is setback from the highways or main roads. The location where the UTM co-ordinates was taken should be shown.

*See Attached  
Figures*

Sketch map can be a detailed survey of the area of the permit; location of the permit on a detailed cadastral or forest inventory map; or a detailed aerial photograph, can be used instead of a sketch to show the location and boundaries of the area being applied for, and features within 300 m.

I certify that the information contained in this application is correct.

Name: Roderick Mercer

Phone No. Business: 709 782 3404

Signature: Roderick Mercer

Fax No.: 782 0129

Position: Aggregate Manager

E-mail Address: rmercer@pennicon.com

Date: July 3/09



Area Applied For

