

**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**  
**PWGSC/TPSGC Acquisitions**  
**1045 Main Street**  
**1st Floor, Lobby C**  
**Unit 108**  
**Moncton, NB E1C 1H1**  
**Bid Fax: (506) 851-6759**

**REQUEST FOR PROPOSAL**  
**DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**

<b>Title - Sujet</b> Marine Water Quality Monitoring		
<b>Solicitation No. - N° de l'invitation</b> K4B20-120110/A	<b>Date</b> 2012-07-09	
<b>Client Reference No. - N° de référence du client</b> K4B20-120110		
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$MCT-006-4489		
<b>File No. - N° de dossier</b> MCT-2-35055 (006)	<b>CCC No./N° CCC - FMS No./N° VME</b>	
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2012-08-20</b>		<b>Time Zone</b> <b>Fuseau horaire</b> Atlantic Daylight Saving Time ADT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>		
<b>Address Enquiries to: - Adresser toutes questions à:</b> Bourque, Annette		<b>Buyer Id - Id de l'acheteur</b> mct006
<b>Telephone No. - N° de téléphone</b> (506) 851-2325 ( )		<b>FAX No. - N° de FAX</b> (506) 851-6759
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF THE ENVIRONMENT Water Science & Technology Environmental Science Centre Morton &University Moncton NB E1A 3E9 Canada		

**Instructions: See Herein**

**Instructions: Voir aux présentes**

**Vendor/Firm Name and Address**

**Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

## TABLE OF CONTENTS

### PART 1 - GENERAL INFORMATION

1. Introduction
2. Summary
3. Debriefings

### PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions
2. Submission of Bids
3. Enquiries - Bid Solicitation
4. Applicable Laws

### PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

### PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures
2. Basis of Selection

### PART 5 - CERTIFICATIONS

1. Certifications Precedent to Contract Award

### PART 6 - FINANCIAL AND OTHER REQUIREMENTS

1. Financial Capability
2. Insurance Requirements

### PART 7 - RESULTING CONTRACT CLAUSES

1. Statement of Work
2. Standard Clauses and Conditions
3. Term of Contract
4. Authorities
5. Payment
6. Invoicing Instructions
7. Certifications
8. Applicable Laws
9. Priority of Documents
10. SACC Manual Clauses
11. Insurance Requirements

#### List of Annexes:

- Annex "A" Statement of Work (Appendices 1 to 6)  
Annex "B" Basis of Payment  
Annex "C"- Technical Evaluation Criteria

## PART 1 - GENERAL INFORMATION

### 1. Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

#### The Annexes include:

- Annex "A" Statement of Work (Appendices 1 to 6)
- Annex "B" Basis of Payment
- Annex "C" Technical Evaluation Criteria

### 2. Summary

- (i) To carry out annual bacteriological water quality and shoreline sanitary surveys of bivalve molluscan shellfish growing areas in order to evaluate whether the classified harvest areas continue to meet the Canadian Shellfish Sanitation Program (CSSP) and (American) National Shellfish Sanitation Program [NSSP] classification standards. This requirement requires surveying in selected shellfish growing areas throughout northeastern New Brunswick from New Mills to Portage Island.

The initial proposed period of work for northeastern New Brunswick would be from date of contract award (estimated around early September, 2012) to March 31, 2013. Environment Canada may extend and expand the mandate of this requirement for an extra two years (April 1st 2013 to March 31st, 2014 and April 1st 2014 to March 31st, 2015).

During each survey season ( i.e., 2012, 2013 & 2014), samples are to be collected at 368 discrete monitoring sites on five (5) occasions (one sample per station per sampling run) in twenty-six (26) shellfish growing area sub-sectors principally from May to November, except for 2012 when sampling will occur mainly between September and November ( Appendix 1). Two of the latter subsectors may be sampled only twice per year, in accord with the CSSP Remote Area policy.

Locations and descriptions of the shellfish growing area sample sites are provided as Appendices 2 and 3. Additional sampling runs could be added, in consultation with the contractor, to the initial sampling plan if required in order to respond to evolving program needs. Collection, analysis and submission of all water quality data are to be completed and provided to Environment Canada by February 28th each year.

All details are outlined in the Annex A - Statement of. The contractor will be paid in accordance with the Basis of Payment at Annex B, and the bidder must meet the technical evaluation described at Annex C.

- (ii) The requirement is subject to the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Agreement on Internal Trade (AIT), the Canada-Peru FTA, and the Canada-Columbia Free Trade Agreement (FTA).

### 3. Debriefings

After contract award, bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

## PART 2 - BIDDER INSTRUCTIONS

### 1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions* (<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>) Manual issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2012/03/02) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: one hundred twenty (120) days

### 2. Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

**Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.**

### 3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to

enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

#### 4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of New Brunswick.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

#### 5. Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least ten (10) days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

### PART 3 - BID PREPARATION INSTRUCTIONS

#### 1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (two (2) hard copies)  
 Section II: Financial Bid (two (2) hard copies)  
 Section III: Certifications (one (1) hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders are encouraged to :

- 1) use paper containing fibre certified as originating from a sustainably-managed forest and/or containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

### **Section I: Technical Bid**

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

#### **1.1 Substantial Information**

Bidders must demonstrate their compliance with the following sections of the bid solicitation by providing substantial information describing completely and in detail how the requirement is met or addressed. Bidders must provide with their technical bid, a document indicating clearly where the substantial information for each of the sections identified in Annex C - Technical Evaluation Criteria can be found.

### **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Pricing Sheet in Annex "B". The total amount of Goods and Services Tax or Harmonized Sales Tax must be shown separately, if applicable.

#### **1.1 SACC Manual Clauses**

C3011T (11/01/2010), Exchange Rate Fluctuation

### **Section III: Certifications**

Bidders must submit the certifications required under Part 5.

## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **1. Evaluation Procedures**

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

#### **1.1 Technical Evaluation**

Mandatory and point rated technical evaluation criteria are included in Annex C.

## 1.2 Financial Evaluation

The evaluated cost/total bid price will be based on the aggregate of the total estimated cost for the period of the contract and the two one year optional periods detailed at Annex B - Basis of Payment.

## 2. Basis of Selection

1. To be considered responsive, a bid must:
  - (a) meet all the mandatory requirements of this solicitation; and
  - (b) obtain the required **minimum of 70 percent** of the points for the criteria specified in this solicitation, which are subject to point rating. The rating is performed on a scale of **300** points.
2. Bids not meeting (a) or (b) above will be given no further consideration.
3. The bids considered responsive after the evaluation of the mandatory requirements and point rating of the technical criteria will then be subject to a combined rating of technical merit and price.
  - (a) Technical Merit will be given a weighing value of 60 percent and Price will be given a weighing value of 40 percent.
  - (b) The highest point rated technically compliant proposal is allocated the maximum points of 60 and the other technical proposals are prorated accordingly.
  - (c) The lowest priced technically compliant proposal is allocated the maximum points of 40 and the other price proposals are prorated accordingly.
4. The proposal with the highest total score, when adding the technical points and the price points, is considered as the proposal representing the optimum value to the Crown and will be recommended for award of a contract,

### Example of Best Value Determination:

Bidders should be aware that the figures provided in the following example bear no relationship to the expectations of cost, bid prices, or the expected budget associated with these future requirements.

Calculations will be made by using a method of Highest Combined Point Rated Score:, with 60% weight on point rated score, and 40% weight on cost/price score.

Calculation Data:	Point Rated Score	Bidder Quote Price
<b>Bidder 1</b>	*88/100	\$60,000
<b>Bidder 2</b>	82/100	\$55,000
<b>Bidder 3</b>	76/100	**\$50,000

Final Calculation:	Point Rated Score	Price Score	TOTAL POINTS
<b>Bidder 1</b>	$88/88^* \times 60 = 60$	$(50^{**}/60) \times 40 = 33.33$	93.33
<b>Bidder 2</b>	$82/88^* \times 60 = 55.909$	$(50^{**}/55) \times 40 = 36.36$	92.269
<b>Bidder 3</b>	$76/88^* \times 60 = 51.818$	$(50^{**}/50) \times 40 = 40$	91.818

For the purposes of this example, assume that three responsive bids have been received, and that the maximum score which can be obtained is 100 points. The highest point rated proposal, and lowest priced proposal would receive the full percentage points possible (i.e., 60 and 40 respectively), with the scores of other proposals being pro-rated accordingly. Based on this example, contract award would be recommended to Bidder 1, whom obtained the highest overall score taking into consideration both technical/managerial merit, and the proposed price offered.

\*Represents the highest point rated score

\*\* Represents the lowest priced proposal

## PART 5 - CERTIFICATIONS

Bidders must provide the required certifications to be awarded a contract. Canada will declare a bid non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

### 1. Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

#### 1.1 Federal Contractors Program - \$200,000 or more

- The Federal Contractors Program (FCP) requires that some suppliers, including a supplier who is a member of a joint venture, bidding for federal government contracts, valued at \$200,000 or more (including all applicable taxes), make a formal commitment to implement employment equity. This is a condition precedent to contract award. If the Bidder, or, if the Bidder is a joint venture and if any member of the joint venture, is

subject to the FCP, evidence of its commitment must be provided before the award of the Contract.

Suppliers who have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

2. If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.
3. The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

- (a) ( ) is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
- (b) ( ) is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44;
- (c) ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC (having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached;
- (d) ( ) is subject to the FCP, and has a valid certificate number as follows: \_\_\_\_\_  
(e.g. has not been declared an ineligible contractor by HRSDC.)

Further information on the FCP is available on the HRSDC Web site.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## 1.2 Former Public Servant Certification

Contracts with former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In

order to comply with Treasury Board policies and directives on contracts with FPS, bidders must provide the information required below.

### Definitions

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- (a) an individual;
- (b) an individual who has incorporated;
- (c) a partnership made of former public servants; or
- (d) a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means, in the context of the fee abatement formula, a pension or annual allowance paid under the *Public Service Superannuation Act* (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the *Canadian Forces Superannuation Act*, R.S., 1985, c. C-17, the *Defence Services Pension Continuation Act*, 1970, c. D-3, the *Royal Canadian Mounted Police Pension Continuation Act*, 1970, c. R-10, and the *Royal Canadian Mounted Police Superannuation Act*, R.S., 1985, c. R-11, the *Members of Parliament Retiring Allowances Act*, R.S., 1985, c. M-5, and that portion of pension payable to the *Canada Pension Plan Act*, R.S., 1985, c. C-8.

### Former Public Servant in Receipt of a Pension

Is the Bidder a FPS in receipt of a pension as defined above?

YES ( ) NO ( )

If so, the Bidder must provide the following information:

- (a) name of former public servant;
- (b) date of termination of employment or retirement from the Public Service.

### Work Force Reduction Program

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of a work force reduction program?

YES ( ) NO ( )

If so, the Bidder must provide the following information:

- (a) name of former public servant;
- (b) conditions of the lump sum payment incentive;
- (c) date of termination of employment;
- (d) amount of lump sum payment;
- (e) rate of pay on which lump sum payment is based;
- (f) period of lump sum payment including start date, end date and number of weeks;
- (g) number and amount (professional fees) of other contracts subject to the restrictions of a work force reduction program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including the Goods and Services Tax or Harmonized Sales Tax.

### **Certification**

By submitting a bid, the Bidder certifies that the information submitted by the Bidder in response to the above requirements is accurate and complete.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

### **1.3 Status and Availability of Resources**

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/ her availability. Failure to comply with the request may result in the bid being declared non-responsive.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

### **1.4 Education and Experience**

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## PART 6 - FINANCIAL AND OTHER REQUIREMENTS

### 1 Financial Capability

SACC Manual clause A9033T (2011/05/16) Financial Capability

### 2 Insurance Requirements

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Part 7, Item 11.

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

## PART 7 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

### 1. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

### 2. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions (<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>) Manual issued by Public Works and Government Services Canada.

#### 2.1 General Conditions

2010C (2012/03/02) General Conditions - Services - Medium Complexity, apply to and form part of the Contract.

### 3 Term of Contract

#### 3.1 Period of the Contract

The period of the Contract is from date of Contract to 31 March 2013 inclusive

#### 3.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to two additional one year period(s) under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

### 4. Authorities

#### 4.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Annette Bourque  
Title: Supply Specialist

Public Works and Government Services Canada  
Acquisitions Branch

Address: 1045 Main Street, Unit 108  
Moncton, New Brunswick  
E1C 1H1

Telephone: 1-506-851-2325  
Facsimile: 1-506-851-6759

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

#### 4.2 Project Authority

The Project Authority for the Contract is:

**Details will be provided in any resulting contract**

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_-\_\_\_\_-\_\_\_\_

Facsimile: \_\_\_\_-\_\_\_\_-\_\_\_\_

E-mail address: \_\_\_\_\_

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority; however, the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

#### 4.3 Contractor's Representative (bidder please complete)

Name: \_\_\_\_\_

Telephone: \_\_\_\_ \_\_\_\_ \_\_\_\_

Facsimile: \_\_\_\_ \_\_\_\_ \_\_\_\_

E-mail address: \_\_\_\_\_

### 5. Payment

#### 5.1 Basis of Payment - Limitation of Expenditure

The Contractor will be reimbursed for the costs reasonably and properly incurred in the performance of the Work, as determined in accordance with the Basis of Payment in Annex B to a limitation of expenditure of \$ \_\_\_\_\_ (insert the amount at contract award). Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

#### 5.2 Minimum Work Guarantee - All the Work

1. In this clause,  
 "Maximum Contract Value" means the amount specified in the "Limitation of Expenditure" clause set out in the Contract; and  
  
 "Minimum Contract Value" means 20% (percent).
2. Canada's obligation under the Contract is to request Work in the amount of the Minimum Contract Value or, at Canada's option, to pay the Contractor at the end of the Contract in accordance with paragraph 3. In consideration of such obligation, the Contractor agrees to stand in readiness throughout the Contract period to perform the Work described in the Contract. Canada's maximum liability for work performed under the Contract must not exceed the Maximum Contract Value, unless an increase is authorized in writing by the Contracting Authority.
3. In the event that Canada does not request work in the amount of the Minimum Contract Value during the period of the Contract, Canada must pay the Contractor the difference between the Minimum Contract Value and the total cost of the Work requested.

4. Canada will have no obligation to the Contractor under this clause if Canada terminates the Contract in whole or in part for default.

### 5.3 SACC Manual clause

SACC Reference	Section	Date
H1001C	Multiple Payment	2008/05/12
A9117C	T1204 - Director Request by Customer Department	2007/11/30
D5328C	Inspection and Acceptance	2007/11/30

## 6. Invoicing Instructions

The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

## 7. Certifications

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

## 8. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of the province of New Brunswick.

## 9. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions 2010C (2012/03/02), General Conditions - Services - Medium Complexity;
- (c) Annex A, Statement of Work (Appendices 1 to 6);
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated \_\_\_\_\_ (*insert date of bid*) (*If the bid was clarified or amended, insert at the time of contract award.*), as clarified on \_\_\_\_\_ " **or** ", as amended on \_\_\_\_\_ " and *insert date(s) of clarification(s) or amendment(s)*).

## 10. SACC Manual Clauses

A2001C (16/06/2006) Foreign Nationals (Foreign Contractor)

A2000C (16/06/2006) Foreign Nationals (Canadian Contractor)

## 11. Insurance Requirements

The Contractor must comply with the insurance requirements specified herein. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

### **11.1 Commercial General Liability Insurance**

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability policy must include the following:
  - (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
  - (b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
  - (c) Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
  - (d) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
  - (e) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
  - (f) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
  - (g) Employees and, if applicable, Volunteers must be included as Additional Insured.

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- (h) Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program).
  - (i) Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
  - (j) Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
  - (k) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
  - (l) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
  - (m) n/a
  - (n) n/a
  - (o) n/a
  - (p) n/a
  - (q) n/a
  - (r) Litigation Rights: Pursuant to subsection 5(d) of the *Department of Justice Act*, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:  
 Director Business Law Directorate,  
 Quebec Regional Office (Ottawa),  
 Department of Justice,  
 284 Wellington Street, Room SAT-6042,  
 Ottawa, Ontario, K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

## 11.2 Errors and Omissions Liability Insurance

1. The Contractor must obtain Errors and Omissions Liability (a.k.a. Professional Liability) insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature but for not less than \$1,000,000 per loss and in the annual aggregate, inclusive of defence costs.
2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
3. The following endorsement must be included: Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

**Annex A  
Statement of Work**

**Marine Water Quality Monitoring Atlantic Region  
Annual Sampling Requirement for  
Northeastern New Brunswick,  
2012 – 2015**

**1. Introduction**

The Canadian Shellfish Sanitation Program (CSSP) has the primary objective of protecting public health from the consumption of contaminated bivalve molluscan shellfish by controlling harvesting of shellfish in Canada. It is the first point of sanitary control. Under the CSSP, commercially harvested shellfish growing areas require annual review of sanitary conditions and bacteriological water quality sampling at key monitoring stations. A minimum of five water samples must be collected at each station.

Public health protection is required due to the filter-feeding mechanism of bivalve molluscs (clams, oysters, mussels, etc.) which can concentrate, in their meats, potentially pathogenic bacteria and viruses found in growing waters polluted by fecal matter of human or animal origin. Many consumers prefer to eat shellfish that are partially cooked, such as steamed clams, or raw, as in the case of oysters. Thus, elevated concentrations of live and potentially harmful microorganisms may be ingested.

A bilateral Memorandum of Understanding between Canada and the United States of America on sanitary control of shellfish was signed in 1948 to ensure wholesomeness of shellfish harvested in both countries. Whereas the CSSP Manual currently requires shellfish growing areas to be surveyed triennially for water quality, the CSSP would like to move towards annual surveys of all classified shellfish harvesting areas. This shellfish growing area survey and classification work is the responsibility of Environment Canada's Marine Water Quality Monitoring Section.

**2. General objective**

To carry out annual bacteriological water quality and shoreline sanitary surveys of bivalve molluscan shellfish growing areas in order to evaluate whether the classified harvest areas continue to meet the Canadian Shellfish Sanitation Program (CSSP) and (American) National Shellfish Sanitation Program [NSSP] classification standards. This requirement requires surveying in selected shellfish growing areas throughout northeastern New Brunswick from New Mills to Portage Island.

The initial proposed period of work for northeastern New Brunswick would be from date of contract award (estimated around early September, 2012) to March 31, 2013. Environment Canada may extend and expand the mandate of this requirement for an extra two years (April 1st 2013 to March 31st, 2014 and April 1<sup>st</sup> 2014 to March 31st, 2015).

During each survey season ( i.e., 2012, 2013 & 2014), samples are to be collected at 368 discrete monitoring sites on five (5) occasions (one sample per station per sampling run) in twenty-six (26) shellfish growing area sub-sectors principally from May to November, except for 2012 when sampling will occur mainly between September and November ( Appendix 1). Two of the latter subsectors may be sampled only twice per year, in accord with the CSSP Remote Area policy.

Locations and descriptions of the shellfish growing area sample sites are provided as Appendices 2 and 3. Additional sampling runs could be added, in consultation with the contractor, to the initial sampling plan if required in order to respond to evolving program needs. Collection, analysis and submission of all water quality data are to be completed and provided to Environment Canada by February 28th each year.

## **Annex A**

### **Statement of Work**

### **3. Particular objectives**

The work includes the following specific deliverables:

- collection of marine water samples ;
- bacteriological analyses of water samples for fecal coliform bacteria by an approved CSSP or ISO/IEC 17025 Accredited Laboratory ; utilizing the Fecal Coliform Direct Test, A-1 Medium (Reference method can be found in : Standard Methods for the Examination of Water and Wastewater, APHA, 2005, 21st Ed. Section 9221 E, 2).
- measurement of various physical and meteorological factors ;
- enter survey data and analytical results onto Environment Canada supplied laboratory data sheets and also onto the EC Shellfish Growing Area Database (ASGAD) computer software (software to be supplied by EC). Paper copies of laboratory data sheets are to be provided to EC each week; Electronic copies of ASGAD data files are to be provided every two weeks.
- verification of sampling station position accuracy by plotting GPS datatracks from each sampling run onto an electronic station map and by reporting any significant variance in position (i.e., > 10m).

### **4. Statement of work**

#### **4.1 Working team**

The composition of the working team is presented in Appendix 4. Environment Canada will require that only one person (project manager) from the working team be responsible for communication with the EC Project Authority.

The members of the working team (project manager, laboratory manager and field leader) proposed by the contractor are expected to remain in their positions for the whole term of the contract. Any change in any of these three persons (project leader, laboratory manager and field leader) must be approved by the PWGSC Contracting Authority. All modifications in the team composition must also be approved by the PWGSC Contracting Authority.

#### **4.2 Water Quality Sampling**

The 2012 deliverables will include approximately 1831 water quality samples from twenty-six (26) shellfish growing areas as outlined in Appendix 1. This mandate may be expanded for two additional years (2013 and 2014). In addition, up to 25 water samples will be collected and analyzed for fecal coliform bacteria in support of the Baie de Caraquet conditional area management plan ( 4 stations per sampling day). The total yearly deliverable is therefore around 1856 samples collected and analysed.

The contractor must provide all equipment, as listed in detail in the contractor's proposal, and materials to conduct the work. It is anticipated that the water quality sampling contractor will need to be on the water 1 - 3 hours per sampling day.

Shellfish subsector boundary descriptions and the number of water quality stations to sample are presented in Appendix 1. These subsectors will be the focus of detailed classification and must be sampled principally from September to November 2012, and May to November each additional year of the contract, according to a survey schedule established in consultation with the Project Authority. Subsector maps showing sampling station locations are provided as Appendix 2. Sampling station descriptions and geographic coordinates are provided as Appendix 3.

## Annex A Statement of Work

If additional sampling runs are to be added to the present plan, the Project Authority will submit to the PWGSC Contracting Authority a document detailing the supplementary sampling required. Upon its receipt from the PWGSC Contracting Authority, the contractor will submit a confirmation of capability and cost to the PWGSC Contracting Authority for the additional sampling runs.

### 4.2.1 Water Sampling Procedure

Water samples will be collected at the surface (20 cm) at each station according to strict EC sampling protocols (see Appendix 5). Water samples are to be collected and analyzed preferably within an eight hour period. THIS IS A VERY IMPORTANT REQUIREMENT. If an extension to the eight hour sampling time period is anticipated, the contractor is required to obtain approval from the Project Authority prior to the sampling run. Sample holding times are a critical quality control point. Under all circumstances, sample analysis is to be performed as soon as possible after samples are received at the laboratory.

When planning a sampling program the contractor is required to take various factors into consideration. The shellfish areas will be sampled according to a randomly selected pre-determined schedule (weather permitting). A consistent method of dealing with variations to the sampling schedule will be carried out as detailed in the contractor's proposal. Utilizing a randomized schedule will make it possible to encounter various hydrological, meteorological, or land-use conditions. Moreover, a 2-3 week minimum period should be respected between each sampling run in a same area, unless specifically authorised or requested by the Project Authority. Given the late start of the 2012 field season, less time lapse between sample runs will be accepted in 2012.

Sample station location maps will be provided by EC and all stations must be verified utilising a Global Positioning System (GPS) and relevant visual reference points. Acceptable coordinate systems shall be either UTM Grid Reference or Lat/Long (in decimal degree). The contractor is required to validate the correct position of each sampling station utilising a GPS device during every sampling run in each survey area. Changes to locations of sampling stations will be authorised only in consultation with the Project Authority.

For verification purposes, all sampling runs must be tracked by GPS, and each sample station tagged (with a corresponding waypoint clearly labelled) at the time of sampling. **The sampling run data track must be subsequently downloaded to a computer and the points sampled compared for precision against an electronic map (or database) of pre-established sampling station locations.** Any position variances greater than 10 metres are to be reported to the Scientific Authority before the next scheduled sampling run.

A field log book must be used to record field observations and information relative to each sampling run as per the EC Sampling Protocol (Appendix 5). All field log books must be kept and provided to Environment Canada at the end of each sampling season.

### 4.2.2 Survey Procedure Evaluation

Sampling quality control will be conducted by Environment Canada. Training and "onboard" field audits of water quality sampling activities will be scheduled in consultation with the contractor. The CSSP Evaluation Report of Field Activity is included in Appendix 6, and Environment Canada reserves the right to add other control points as required.

## **Annex A**

### **Statement of Work**

#### **4.2.3 Health and Safety**

For safety reasons, EC requires that each boat have 2 properly trained crew members onboard at all times during surveys: a chief operator and a sampler. All chief boat operators must be licensed for and be familiar with small craft operation in coastal waters. They must also be proficient in reading marine charts, radio operation, Atlantic coast weather report interpretation and routine boat/motor maintenance. In the event of mechanical break-downs, the chief operator must be prepared to expedite repairs or acquire a replacement boat so that sampling will proceed uninterrupted. The sampler must also be familiar with the above procedures in the event that the operator is not capable of performing them. All boat operators must meet Transport Canada regulations that pertain to the activity and class of vessel utilised to conduct the work. Proof of boat operator certification will be provided to EC prior to the commencement of sampling.

While conducting this work on behalf of EC, the contractor and employees will be expected to respect "rules of the road" as applied to appropriate boating behavior. This includes speed restrictions in harbours and in the vicinity of Aquaculture sites and other floating operations. Common sense must be applied to the behavior carried out by the sampling crews while conducting work on behalf of Environment Canada.

It is to be anticipated that unfavourable weather conditions will be encountered periodically during the course of conducting surveys. The decision to suspend a sampling run, due to dangerous weather conditions or any other potentially hazardous condition lies completely with the contractor and the chief boat operator. If a sampling run is rescheduled due to inclement weather or unforeseen mechanical difficulties, this decision should be communicated to the Project Authority as soon as possible.

Past experience of EC field staff conducting sampling in northeastern New Brunswick would suggest the sampling conditions (extent of survey area, influence of tide & wind, and the need to navigate in very shallow nearshore waters) favours the use of a shallow draught 4.3 metre (14 ft) to 6.1 metre (19 ft) runabout or rigid hull inflatable watercraft equipped with a 50 to 90-HP motor. Deep-V cruisers are not suitable for this type of work as most sample sites are located in the intertidal zone. All boats are to be capable of being trailered with vehicles provided by the contractor. The craft used must be fitted with all equipment required by Canadian Laws, according to its class and commercial use.

The contractor must demonstrate to the EC Project Authority that all water craft used for sampling and for the quality control audit have been inspected by Transport Canada (Notice of inspection for small vessels) and will satisfy TC standards to assure the security of everyone on board.

Marine safety information can be found on the following Transport Canada Internet sites:

<http://www.tc.gc.ca/eng/marinesafety/menu.htm> (general information on small vessels),

<http://www.tc.gc.ca/eng/marinesafety/svcp-menu-3633.htm> and <http://www.tc.gc.ca/eng/marinesafety/tp-tp15111-menu-3955.htm> (Small Vessel Compliance Program).

#### **4.3 Laboratory Analysis**

Water quality samples must be processed in an ISO/ IEC 17025:2005 accredited laboratory. The contractor shall demonstrate in the proposal submission which laboratory facility will be used and provide copies of relevant laboratory accreditation certificates. For laboratories awaiting their accreditation certificates, the contractor will provide proof of accreditation inspection and a written letter from the accrediting body confirming that certificates will be issued before contract award date.

## **Annex A Statement of Work**

The following web sites could be consulted as references: Standards Council of Canada <http://www.scc.ca/en/home> and Canadian Association for Laboratory Accreditation-CALA (<http://www.cala.ca/>).

The contractor will be responsible for paying all costs associated with the water sample collection, transportation, and analysis.

### **4.3.1 Methodology**

The conventional bacteriological analysis method of fifteen fermentation tubes with three dilutions (5-5-5), using A-1 culture medium, will be employed (APHA, 2005, 21<sup>st</sup> Ed. Standard Methods for the Examination of Water and Wastewater Section 9221 E, 2. Fecal Coliform Direct Test (A-1 Medium) p. 9-56 to 9-57). The indicator to be measured is the most probable number (MPN) fecal coliform level per 100 mL of sample water. The laboratory must ensure the quality of its analyses by performing a method validation, various internal quality controls and participation in an external proficiency testing program. Laboratories must meet the quality control requirements outlined in the CSSP checklist, Appendix 6 or ISO /IEC 17025 Standard. in accordance with guidelines included in the following manuals: Recommended Procedures for the Examination of Sea Water and Shellfish (Fourth Ed., 1970) and Standard Methods for the Examination of Water and Wastewater (APHA, 2005, 21st Ed. Section 9221 E, 2.).

### **4.3.2 Quality Assurance Program**

ISO/ IEC 17025:2005 requires laboratories to implement and maintain a Laboratory Quality Assurance Program.. In addition, the laboratory must participate in an external Proficiency Testing program at least once a year, and within the first two months of processing samples. Results of this participation must be provided to the EC Project Authority for review.

### **4.3.3 Laboratory Space and Equipment**

The contractor must provide sufficient laboratory space and necessary equipment to carry out the present requirement. All laboratory facilities and equipment must meet requirements as per ISO/IEC 17025:2005 Standards.

Supplies, material and personal protective equipment necessary for sampling and bacteriological analysis will be provided by the contractor.

### **4.3.4 Disposal of Waste and Biohazardous Material**

When disposing of used or unused culture media and contaminated laboratory materials the contractor must ensure all waste is sterilized / neutralized and confined (bagged/ boxed) before disposing according to local waste disposal regulations. The contractor should use environmentally safe and recyclable products where possible.

**Annex A**  
**Statement of Work**

#### **4.3.5 Laboratory location**

Water samples should be collected and analyzed within an eight hour period. Sample analysis is to be performed as soon as possible after samples are received at the laboratory. This is a very important requirement.

The laboratory water supply must meet Canadian drinking water standards (CDWS). To meet this requirement, the contractor must provide proof that the supplied water meets the CDWS. In addition, the contractor must provide the Project Authority with a report of chemical analyses of the reagent grade water at the discharge outlet of the laboratory's water purification / treatment system, one month after the start of the field sampling work; in each year of the contract. The chemical analysis must be conducted by an accredited laboratory for trace dissolved metals (specifically chromium, cadmium, copper, nickel lead and zinc), and heavy metals.

Reagent grade water must also be tested routinely for chlorine, conductivity, pH and heterotrophic plate count.

#### **4.3.6 Laboratory Evaluation/ Audit**

Laboratory evaluations will be carried out by Environment Canada or ISO/ IEC 17025 auditors (as appropriate) at least once a year. Additional control points and/ or inspections can be added by Environment Canada, if deemed necessary.

### **4.4 Data compilation and survey reports**

#### **4.4.1 Sampling Plan**

An annual sampling plan on field and laboratory activities must be provided to the Project Authority at least 2 weeks prior to the commencement of each field season. If, for reasons beyond the control of the field team, the survey area scheduled to be sampled cannot be carried out as planned, a notice of this situation must be given to the Project Authority by telephone on the same day.

In addition, the contractor must provide a list of georeferenced launching sites to be used for sampling each subsector.

#### **4.4.2 Report and Data Entry**

The laboratory bacteriological results sheets for each sampling run will be provided to the Project Authority weekly by e-mail (scan), fax or in person. This laboratory information, together with any supporting field notes, must be entered into the Atlantic Shellfish Growing Area Database (ASGAD) management system. Environment Canada will provide this software to the contractor to use exclusively for the purpose of the contract. Environment Canada will retain all rights, ownership and exclusive control of this software. Electronic updates of the ASGAD data files must be provided every two weeks to the Project Authority. Water quality data will be in ASGAD database ( \*.dbf) format.

**Annex A**  
**Statement of Work**

**5. Delivery product and deadline**

<b><u>Product</u></b>	<b><u>Deadline 2012</u></b>	<b><u>Deadline 2013</u></b>	<b><u>Deadline 2014</u></b>
Annual sampling plan	within 1 week of contract award	Mid April 2013	Mid April 2014
Laboratory results data sheets of individual sampling runs	Weekly	Weekly	Weekly
Data entry on ASGAD database and electronic copy to Project Authority	Monthly. Final dataset 2 weeks after end of water sampling, or December 15 <sup>th</sup> , whichever is sooner.	Monthly. Final dataset 2 weeks after end of water sampling, or December 15 <sup>th</sup> , whichever is sooner.	Monthly. Final dataset 2 weeks after end of water sampling, or December 15 <sup>th</sup> , whichever is sooner.
Comment period ends	February 15, 2013	February 15, 2014	February 15, 2015
Final verified data	February 28, 2013	February 28, 2014	February 28, 2015

**Annex A**  
**Statement of Work**

**6. Various**

- All the meetings will be held in French or English and all the written reports must be presented in English.
- Project monitoring will be ensured through periodic meetings or conference-calls at which time work progress will be presented: before work begins, during the sampling period, and upon completion of the field work. Other meetings or conference-calls may be added as the project progresses.
- Environment Canada reserves the right to modify the sampling of certain subsectors and to redistribute the work to other subsectors to be done in the same area while respecting the sampling schedule and the need to prevent any additional cost.
- Environment Canada reserves the right to reduce the number of samples in a given sampling plan during the course of the mandate. This may occur if the allocated financial resources of the program are reduced. The total cost of the contract will be reduced accordingly.
- Bacteriological analysis results and any other information obtained from the surveys are confidential and remain the property of Environment Canada.
- Should additional sampling surveys be added to the planned schedule, each additional sample will be paid in accordance with the contract's Basis of Payment.

**7. Bibliographical references**

- APHA (American Public Health Association) 1970. Recommended Procedures for the Examination of Seawater and Shellfish, Fourth Edition, Greenberg, A.E. et D.A. Hunt (ed.), Washington, D.C., 144 pages.
- Official Methods of Analysis of the Association of Official Analytical Chemistry, Thirteenth Edition, 1980, AOAC.
- Standard Methods for the Examination of Water and Wastewater, APHA, 2005, 21<sup>st</sup> Ed. Section 9221 E, 2.
- Canadian Shellfish Sanitation Program, Manual of Operations, Government of Canada, 2003, <http://www.inspection.gc.ca/english/fssa/fispoi/man/cssppccsm/cssppccsme.shtml>

## ANNEX "B"

### BASIS OF PAYMENT

You will be paid your costs reasonably and properly incurred for the performance of the work as follows;

1.	<b>For the period from the date of the contract to 31 March 2013</b>	<b>Extended Price (sample rate x estimated number of samples)</b>
	\$ _____ per water sample (sampled, analyzed and reported) for an estimated 1856 samples	\$ _____
	<b>Total Estimated Cost: Contract award date to 31 March 2013</b>	<b>\$ _____</b>

2.	<b>For the option period from 1 April 2013 to 31 March 2014</b>	<b>Extended Price (sample rate x estimated number of samples)</b>
	\$ _____ per water sample (sampled, analyzed and reported) for an estimated 1856 samples	\$ _____
	<b>Total Estimated Cost: 1 April 2013 to 31 March 2014</b>	<b>\$ _____</b>

3.	<b>For the option period from 1 April 2014 to 31 March 2015</b>	<b>Extended Price (sample rate x estimated number of samples)</b>
	\$ _____ per water sample (sampled, analyzed and reported) for an estimated 1856 samples	\$ _____
	<b>Total Estimated Cost: 1 April 2014 to 31 March 2015</b>	<b>\$ _____</b>

The sum of all periods will be used for evaluation purposes.

## Annex C - Technical Evaluation Criteria K4B20-120110

### Title - Collect and Analyze Marine Water Samples

#### Mandatory Evaluation Criteria

1. Proposals MUST meet all of the following mandatory requirements. Proposals must be supported by proper and adequate detail, particularly where a mandatory item requires supporting evidence. Those not meeting all of these mandatory requirements will be given no further consideration.
2. The mandatory evaluation criteria are:

**ATTENTION BIDDERS: WRITE THE RELEVANT PAGE NUMBER (S) FROM YOUR PORPOSAL WHICH ADDRESSES THE ISSUE BESIDE THE CRITERIA BELOW.**

<b>Mandatory Evaluation Criteria</b>	<b>Page</b>	<b>Met</b>	<b>Not Met</b>	<b>Evaluator's Comments</b>
<p>M1. Watercraft has Transport Canada safety inspection certification (Proof of safety inspection must be submitted. A photocopy of the document is acceptable).</p> <p>Bidders should submit supporting documentation with their bid. If the documentation is not submitted with the bid, the Contracting Authority will request the information from the Bidder and provide the Bidder with a time frame within which to submit the documentation. Failure to comply with the request of the Contracting Authority within the time frame and submit the information will render the bid non-responsive.</p>				
<p>M2. Lab has ISO 17025 certification with scope to perform fecal coliform analysis using A-1 culture medium in fifteen tube, three dilutions (5-5-5) method as per statement of work section 4.3.1 (Proof of ISO 17025 certification must be submitted. A photocopy of the document is acceptable).</p> <p>Bidders should submit supporting documentation with their bid. If the documentation is not submitted with the bid, the Contracting Authority will request the information from the Bidder and provide the Bidder with a time frame within which to submit the documentation. Failure to comply with the request of the Contracting Authority within the time frame and submit the information will render the bid non-responsive.</p>				
<p>M3. Working team as defined in Appendix 4 of Annex A - Mandatory requirements 1-5 Supporting documentation confirming the working team compliance to mandatory requirements 1-5 must be provided at time of bid closing.</p>				

**Annex C - Technical Evaluation Criteria K4B20-120110**

M4. Entire subsector must be sampled same day as proposed in Appendix 1 ( no splitting ).					
<b>Supporting documentation confirming the same day sampling of entire subsector must be provided at time of bid closing.</b>					
M5. Lab must have capacity to analyse full subsector sample number per day					
<b>Supporting documentation confirming the capacity to analyse full subsector sample number per day must be provided at time of bid closing.</b>					

## **Annex C - Technical Evaluation Criteria K4B20-120110**

### **Point-Rated Evaluation Criteria**

1. In addition to meeting all of the mandatory requirements, the proposal will be evaluated and scored in accordance with specific evaluation criteria as detailed in this section.
2. When citing past projects as examples, details should be including information such as:
  - a. Project descriptions and overview of deliverables;
  - b. Start and end time (month / year) of the project and specify actual time period (months, years) (if applicable) spent on the project;
  - c. Role and responsibilities of your company within the project, including a description of the services provided to the client and type of deliverables; and
  - d. Identify the client organization (provide references). Include the client contact name for which the work was directly performed and contact information. Note that contact information for any reference cited should include contact name, title and current telephone number
3. Personnel resumes used within the context of the proposal should provide detail regarding the qualifications, relevant experience, and expertise of the proposed team member(s), including a summary/description of their past projects. Note that contact information for any reference cited should include contact name, title, and current e-mail address and telephone number.
4. Note that in support of paragraphs 2 and 3 above, the evaluation team reserves the right to contact any reference provided.
5. The point-rated evaluation criteria are:

**ATTENTION BIDDERS: WRITE THE RELEVANT PAGE NUMBER (S) FROM YOUR PORPOSAL WHICH ADDRESSES THE ISSUE BESIDE THE CRITERIA BELOW.**

## Annex C - Technical Evaluation Criteria K4B20-120110

Point Rated Evaluation Criteria ( max 300 points/ min 210 points overall )	Page	Max Value	Score	Evaluator's Comments
<b>I- UNDERSTANDING OF MANDATE 150 points/ Min 105)</b> <b>a) Demonstrate understanding of scope &amp; objectives (20 points / min 14)</b> 1. General background of CSSP and public health implications of shellfish contamination 2. Environmental factors affecting survey delivery and data quality 3. Importance for data quality of minimizing time delay between sampling & analysis <b>b) Work plan feasibility, approach, schedule... (80 points/ min 56)</b> <b>i) Field Work ( 60 points / min 42)</b> 1. Organization & coordination of field team(s) work 2. Coordination of field and lab team (incl. communication plan & late sample arrival at lab) 3. Flexibility of field crew to work after normal hours in response to changing conditions 4. Contingency to reschedule lost sampling days without affecting entire schedule by domino effect 5. Provides details on sampling approach & schedule (daily); i.e., realistic sampling plan coverage per day 6. Provides details on delivering samples to lab within prescribed 8 hour sampling requirement - Details on delivery within 6 hours of collection ( full points ) - Details on delivery within 8 hours of collection ( 32 points ) - Details on delivery between 8 and 10 hours of collection ( 28 points ) - Details on delivery between 10 and 24 hours of collection ( 22 points ) - Delivery beyond 24 hours of collection ( 0 points ) - Reject Bid <b>ii) Lab Work ( 20 points / min 14)</b> Lab must provide details on ability to process field samples soon after delivery, on flexible schedule, and on customer priority basis 1. Flexibility of lab to work after normal hours in response to unforeseen field delays 2. Analysis of samples soon after reception by laboratory - Analysis within 2 hours of reception ( full points ) - Analysis within 4 hours of reception ( 5 points ) - Analysis beyond 4 hours after reception ( 0 points ) - Reject Bid 3. Planning media preparation & workload in anticipation of field sampling (communication) 4. Critical equipment on emergency power to reduce probability of sample loss 5. Provide details on laboratory equipment		6.0 8.0 6.0  3.0 1.0 5.0 1.0  10.0 40.0 - 0.0 -8.0 -12.0 -18.0 -40.0  5.0 10.0 - 0.0 -5.0 -10.0 2.0 2.0 1.0		

### Annex C - Technical Evaluation Criteria K4B20-120110

	Page	Max Value	Score	Evaluator's Comments
<b>c) Recognition of direct &amp; peripheral problems, sol's proposed (30pts /min 21)</b> 1. Provide contingency plan for personnel issues such as vacation, sick leave, termination i) Field personnel ii) Lab personnel 2. Identify potential field related problems and possible solutions i) Equipment problems ( eg., outboard failure; flat tire, trailer wheel hub failure, ...) ii) Field conditions (eg., wind, tides, fog, lightning, traffic, delayed arrival at lab...) 3. Provides types of lab related problems and possible solutions i) Equipment problems - eg., break down, power failure, circulator low water shut off ii) Media & Culture problems - eg., cultures 24h at 35°C due to circulator low water shut off (sol'n: re-inoculate pos. & reincubate at 44.5°C) - eg., media failure due to failed water quality test (sol'n: prepare media well ahead of time)		5.0 5.0 5.0 5.0 4.0 3.0 3.0		
<b>d) Appropriate equipment for the task (20 points/ min 14)</b> 1. Must provide details on sampling equipment (type & size of boat, outboard motors, etc) i) Boat(s) capable of sampling very shallow waters ( near shore) yet of sufficient speed to meet the < 8 hour sampling requirement, and sufficiently sea worthy to occasionally sample during rough sea conditions. ii) Boat design allows one to safely take water samples from the bow area.		15.0 5.0		
<b>II- STAFF EXPERIENCE AND STABILITY ( 90 points/ Min 63)</b> <b>i ) Project manager ( 30 points / 21 min)</b> 1. Project manager education & qualifications - University degree ( 6 points ) - University degree in science field with recognized knowledge of biology ( 4 point ) - Experience coordinating & managing projects of comparable scope ( 6 points ) - Experience in supervising work teams ( 5 points ) - Experience supervising work teams in the marine environment ( 5 points ) 2. Length of time within the organisation - > 3 Years ( Full points) - 2 - 3 Years ( 2 points) - 1 - 2 Years ( 1 point) - < 1 Year ( 0 points)		6.0 4.0 6.0 5.0 5.0 4.0		

# Annex C - Technical Evaluation Criteria K4B20-120110

	Page	Max Value	Score	Evaluator's Comments
<b>ii ) Field personnel capability ( 30 points / 21 min )</b> <b>1. Field leader ( field technician ) ( 25 points / 17.5 min )</b> a) Qualifications & experience <ul style="list-style-type: none"> <li>- Collegial diploma ( or higher ) ( 5.0 points )</li> <li>- Experience handling motor boats in the marine environment</li> <li>- Experience in supervision of field teams</li> <li>- Experience in material and sampling management</li> <li>- Experience in water quality sampling</li> </ul> b) Length of time within the organisation <ul style="list-style-type: none"> <li>- &gt; 3 Years ( Full points )</li> <li>- 2 - 3 Years ( 1 point )</li> <li>- 1 - 2 Years ( 0.5 points )</li> <li>- &lt; 1 Year ( 0 points )</li> </ul> <b>2. Assistant technician ( 5 points / 3.5 min )</b> <ul style="list-style-type: none"> <li>- Experience in marine water quality sampling (full points)</li> <li>- Experience of field work in the marine environment (3.5 points)</li> </ul>		5.0 5.0 5.0 5.0 3.0 2.0  5.0		
<b>iii ) Laboratory personnel capability ( 30 points / 21 min )</b> <b>1. Laboratory manager ( 20 points / 14 min )</b> a) Qualifications & experience <ul style="list-style-type: none"> <li>- University degree in sciences ( 3.0 points )</li> <li>- University degree in biology / microbiology ( 2.0 points )</li> <li>- Relevant practical experience in laboratory analysis ( 3.0 points )</li> <li>- Relevant practical experience in laboratory management ( 3.0 point )</li> <li>- Relevant practical experience in personnel supervision ( 2.0 point )</li> <li>- Experience with ISO 17025 ( 4.0 points )</li> </ul> b) Length of time within the organisation <ul style="list-style-type: none"> <li>- &gt; 3 Years ( Full points )</li> <li>- 2 - 3 Years ( 2 points )</li> <li>- 1 - 2 Years ( 1 points )</li> <li>- &lt; 1 Year ( 0 points )</li> </ul> <b>2. Laboratory technician ( 10 points / 7 min )</b> <ul style="list-style-type: none"> <li>- Qualification in microbiology laboratory techniques ( 6.0 points )</li> <li>- Relevant experience in laboratory work ( 2 points )</li> <li>- Experience with ISO 17025 ( 2.0 points )</li> </ul>		3.0 2.0 3.0 3.0 2.0 4.0 3.0  6.0 2.0 2.0		

	Page	Max Value	Score	Evaluator's Comments
<b>III- COMPANY CAPABILITY &amp; EXPERIENCE (50 points/ min 35 points)</b> <b>a ) Company capability ( 30 points / 21 min)</b> Provides examples of previous experience related to similar projects - Proven success completing two or more, similar large scope projects in marine water quality monitoring and analysis - References checked ( 25 -30 points) - Demonstrated success completing at least one, similar large scope project in marine water quality monitoring and analysis - References checked ( 21 - 24 points) - Limited directly related projects with references checked ( 21 points) - No directly related projects or no references ( 0 points)		<b>30.0</b>		
<b>b) Company stability (years in business) (10 points / 7 min ).</b> - 1 - 5 Years ( Two points per year) - < 1 Year ( 0 points)		<b>10.0</b>		
<b>c ) Adequacy of team ( 10 points / 7 min)</b> 1. Provides assurance of planned field team personnel availability 2. Provides details on field personnel back-up capability 3. Provides assurance of planned lab personnel availability 4. Provides details on lab personnel back-up capability		<b>2.5</b> <b>2.5</b> <b>2.5</b> <b>2.5</b>		
<b>IV- ENVIRONMENTAL QUALITY OF OPERATION (10 points/ 7 min )</b> 1. Company has environmental policy statement 2. Use of eco-friendly practices & products such as: - Use of high test gasoline in vehicles & outboard motors - Four cycle outboards or 2 stroke equivalent re 5 star environmental performance ( i.e., California) - Use of recycled products (paper, motor oil, etc) - Waste reduction practices - Use of energy efficient lighting		<b>2.0</b> <b>8.0</b>		

( Scoring of 2 points per significant category, to max. of 8 points)

Appendix 1

## Identification of Sampling Areas - Northeastern New Brunswick

Shellfish Area Designation	Growing Area Name	Coastline Description	Water Sampling Frequency (Runs / year)	Water Quality Sample Stations	Number of Samples per year
NB-01-020-003	New Mills	Hamilton Point to Black point	5	12	60
NB-01-020-004	Heron Island	Waters of Heron Island and Shoal Bay	5	12	60
NB-01-030-001	Nash Creek	Black Point to Fenderson Beach	5	10	50
NB-01-030-002	Armstrong Brook / Jacquet River	Fenderson Beach to Little Belldune Point	5	2	10
NB-02-010-004	Beresford Beach	North Nigadoo to Youghall Beach	5	5	25
NB-02-020-001	Bathurst Harbour	Youghall Beach to Belloni Point	5	6	30
NB-02-030-002	Stonehaven	Cranberry Cape to Grindstone Point	2	2	4
NB-02-040-002	Anse Bleue	W. end of Hwy 320 to N/E of Pte Maissonnette	2	1	2
NB-03-010-001	Baie de Caraquet	N/E of Pte de Maissonnette to Pte near Le Bouthillier	5	42	210
NB-03-010-002	Bas-Caraquet	Pte near Le Bouthillier to Pte des Blanchard	5	22	110
NB-03-020-001	Pokesudie Island	Pte Des Blanchard to Pte à Mailloux	5	11	55
NB-03-020-002	Baie St-Simon (North)	Pte à Mailloux to Pte aux Bouleaux	5	15	75
NB-03-020-003	Baie St-Simon (South)	Pte aux Bouleaux to east of Pte Brûlé	5	18	90
NB-03-020-004	Havre de Shippagan	East of Pte Brûlé to N.E of Pte à Peinture	5	21	105
NB-03-030-001	Baie de Lamèque	N.E. of Pte à Peinture to N of Pte Alexandre	5	16	80
NB-03-030-002	Baie de Petite-Lamèque	N. of Pte Alexandre to Pte de Petite Lamèque	5	9	45
NB-03-030-003	Grande Batture	Pte de Petite Lamèque to E. of L. Shippegan	5	11	55
NB-03-030-004	Miscou Harbour	E. of L. Shippegan to Harper Point	5	14	70
NB-03-040-001	Shippagan Beach	Shippegan Gully to Petit-Pokemouche Gully	5	2	10
NB-03-040-002	Baie de Pokemouche	Petit-Pokemouche Gully to Green Point	5	8	40
NB-03-050-001	Baie de Tracadie	Green Pt to Pte-à-Bouleaux	5	19	95
NB-03-050-002	Grande Rivière Tracadie	Pte-à-Bouleaux to Pte-à-Barreau	5	20	100
NB-04-010-001	Tabusintac Bay	Pte-à-Barreau to Old Sea Gully	5	38	190
NB-04-020-001	Neguac Bay	Old Sea Gully to S.-W. shore Hay Island	5	34	170
NB-04-020-002	Burnt Church	S.-W. shore Hay Island to Rocky Point	5	10	50
NB-04-020-003	Portage Island	All surrounding waters	5	8	40
TOTAL				368	1831

K4B20-12-0110

**APPENDIX 2**

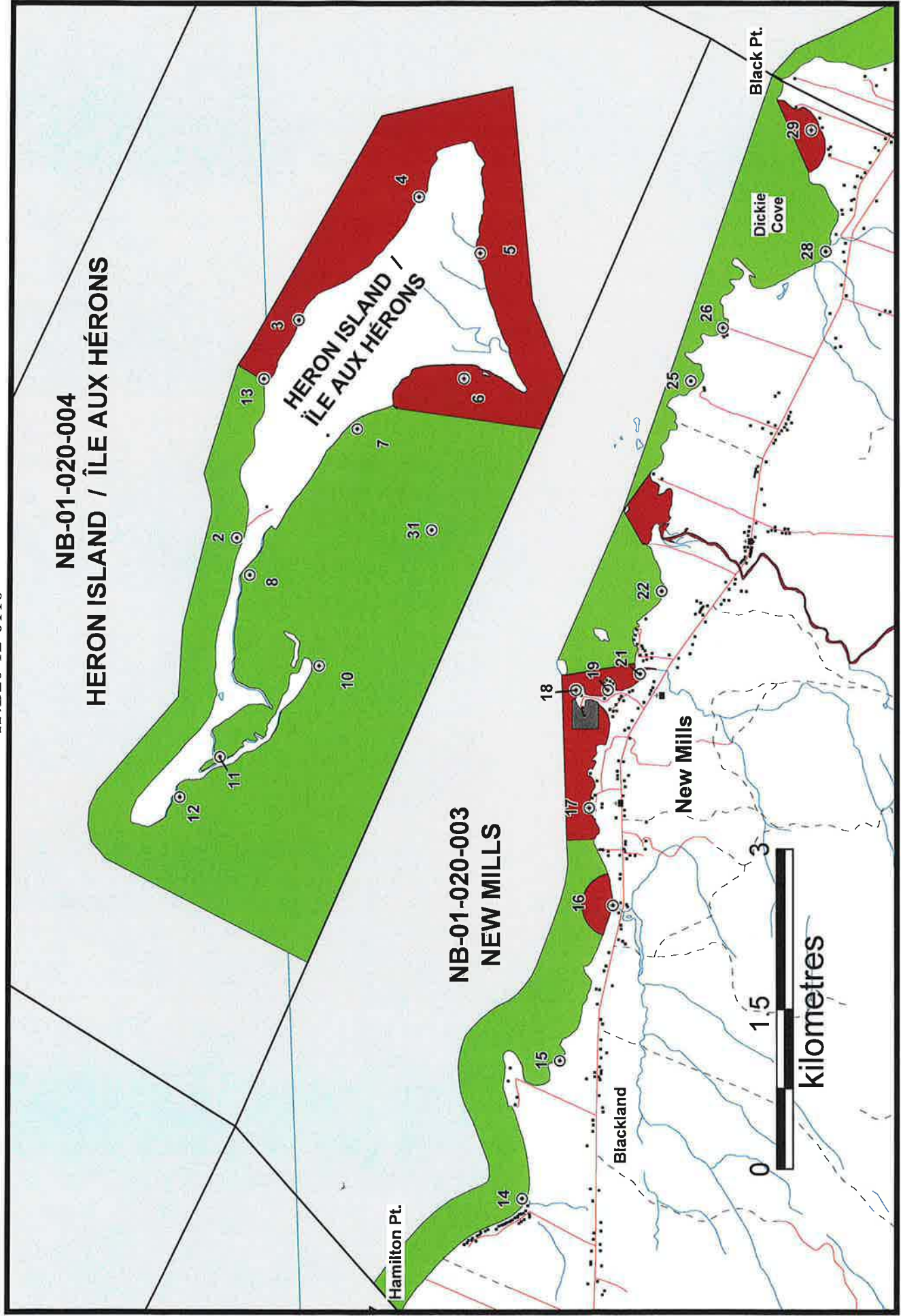
**EC MARINE SAMPLING STATION MAPS  
FOR NORTH-EAST NEW BRUNSWICK**

**ANNEXE 2**

**CARTES D'ÉCHANTILLONNAGE DE STATIONS MARINES  
POUR LE NORD-EST DU N.-B.**

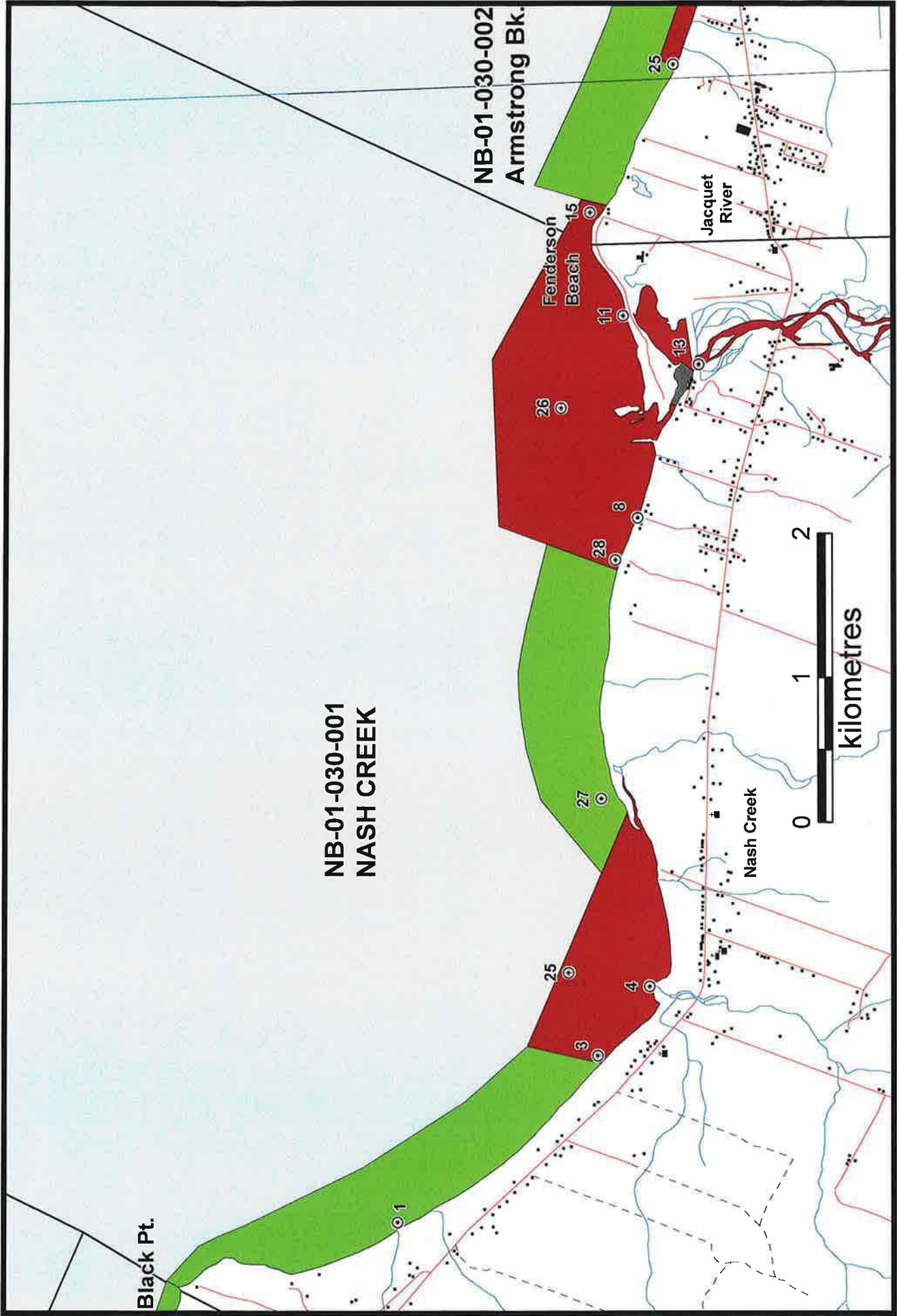
**NB-01-020-004**  
**HERON ISLAND / ÎLE AUX HÉRONS**

**NB-01-020-003**  
**NEW MILLS**



K4B20-12-0110

**Figure 1 New Mills & Heron Island / Île aux Hérons ( NB-01-020-003 & NB-01-020-004 )**



**Figure 2 Nash Creek (NB-01-030-001) & Ruis. Armstrong Brook (NB-01-030-002)**

K4B20-12-0110

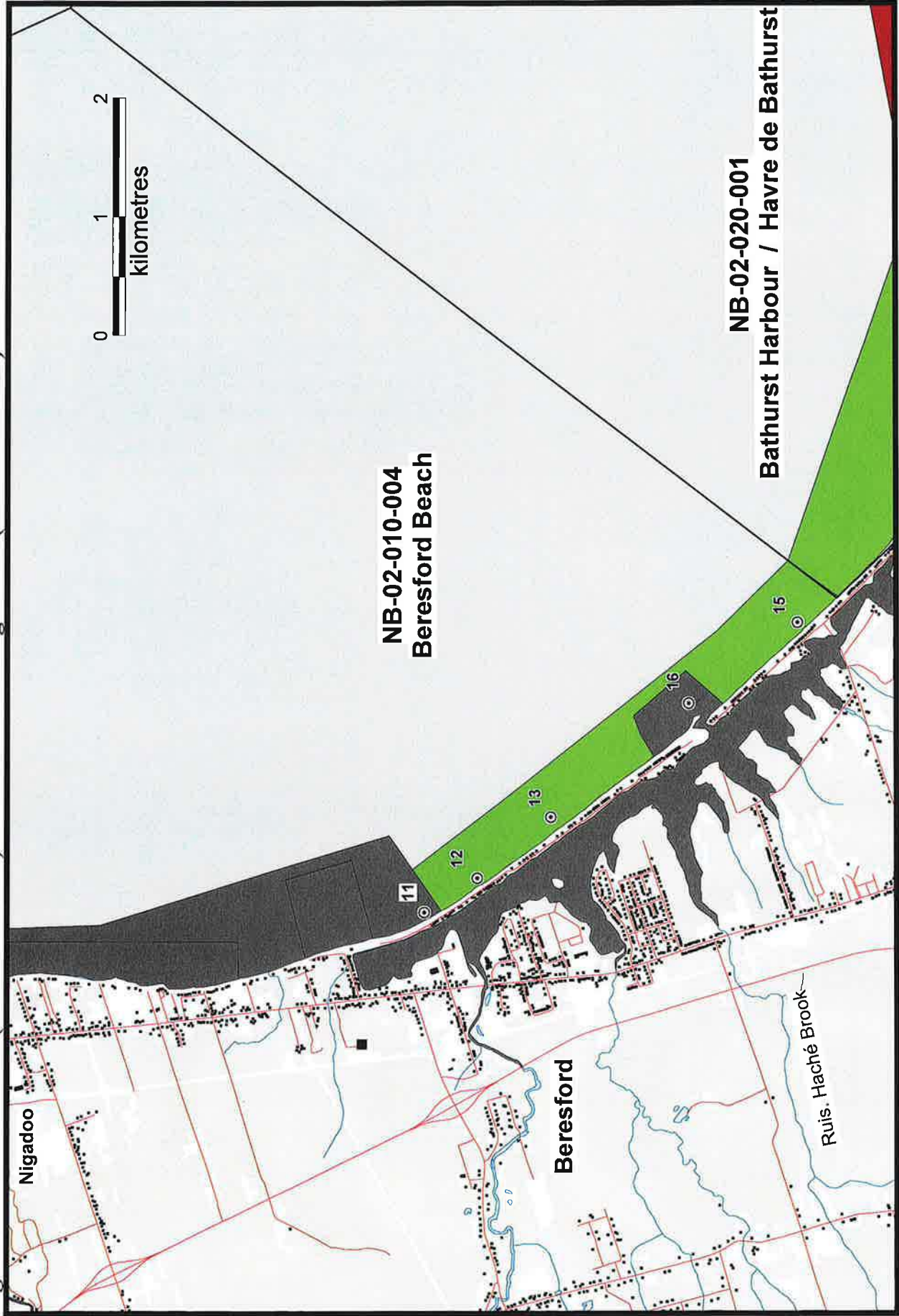
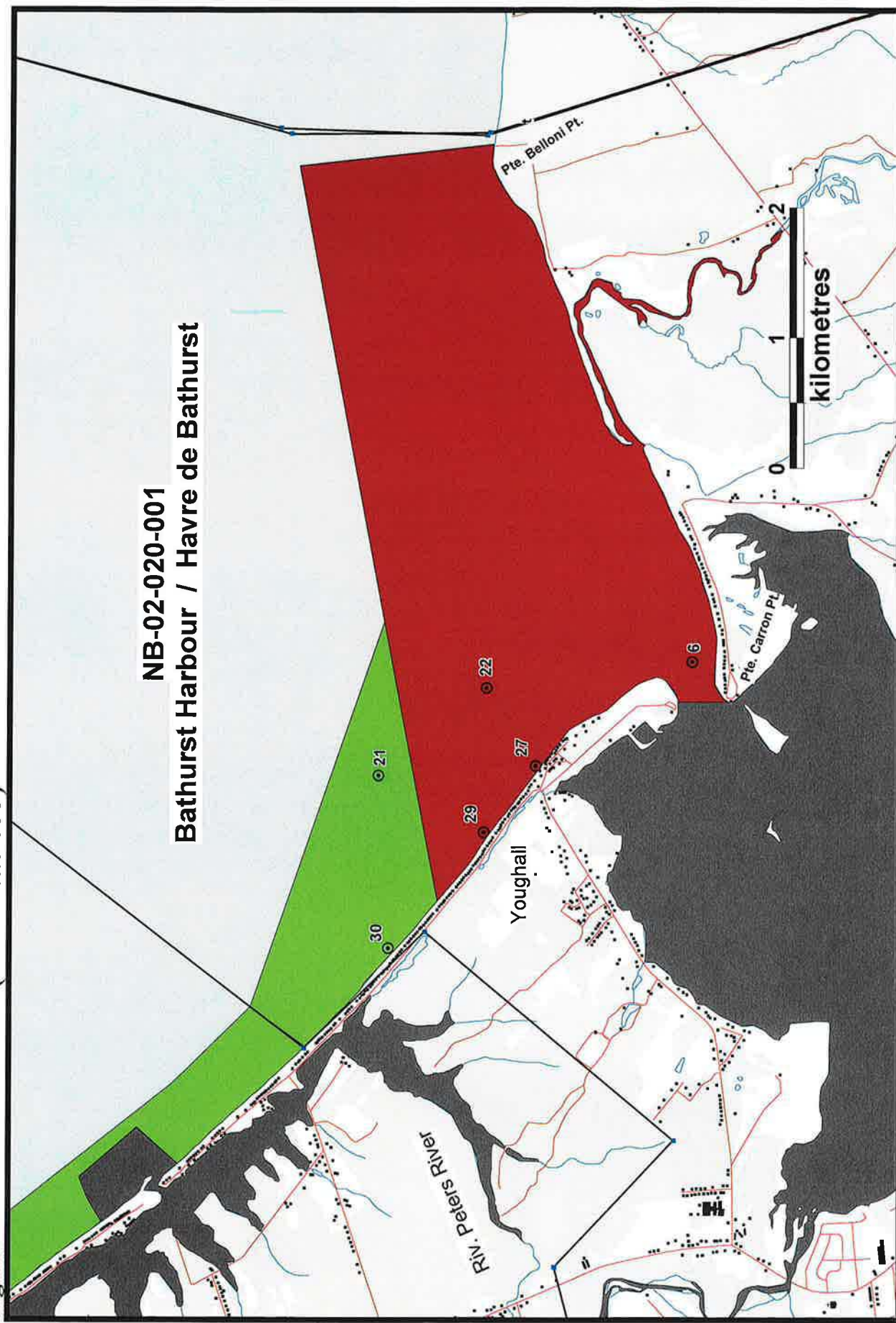
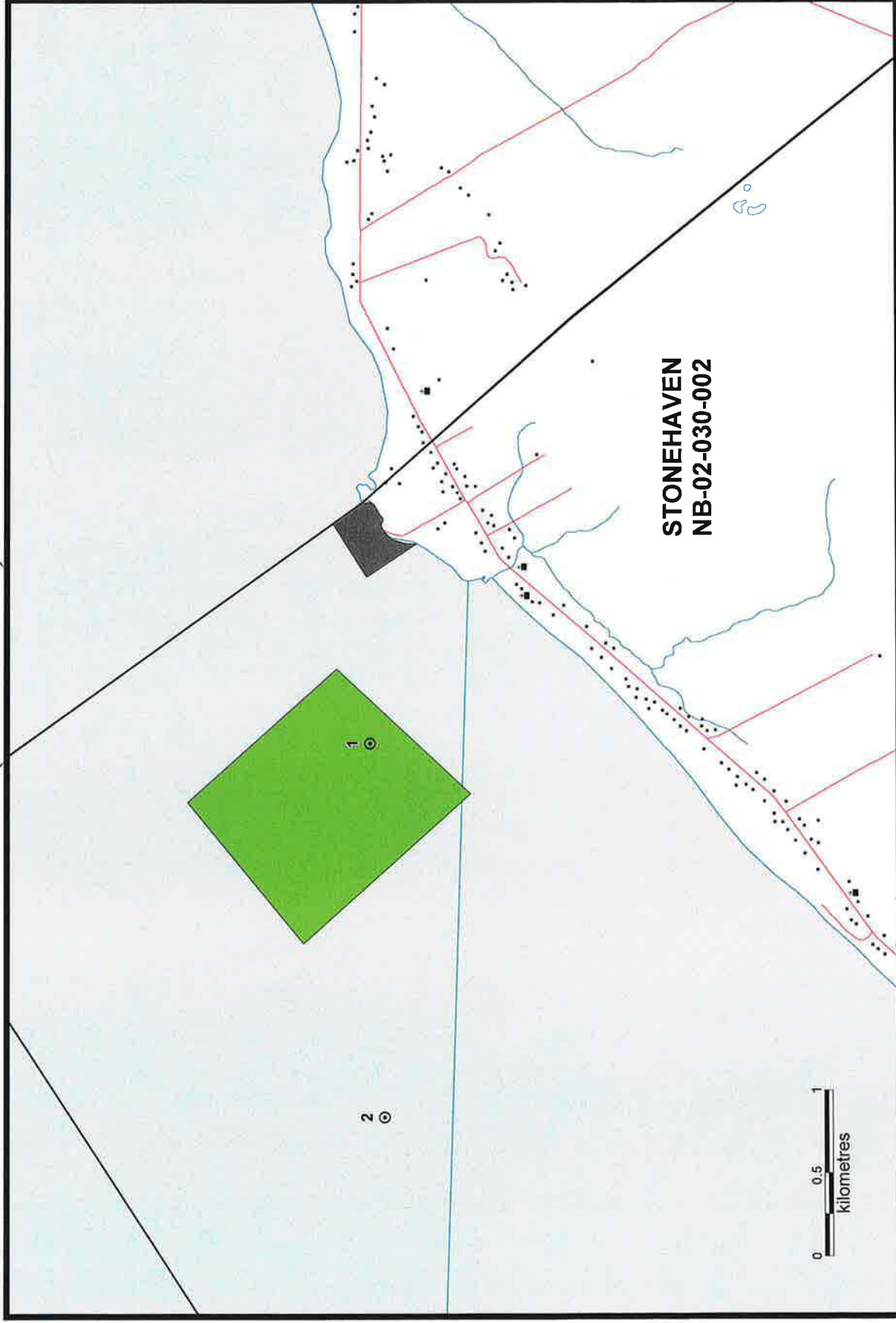


Figure 3 Beresford Beach ( NB-02-010-004 )

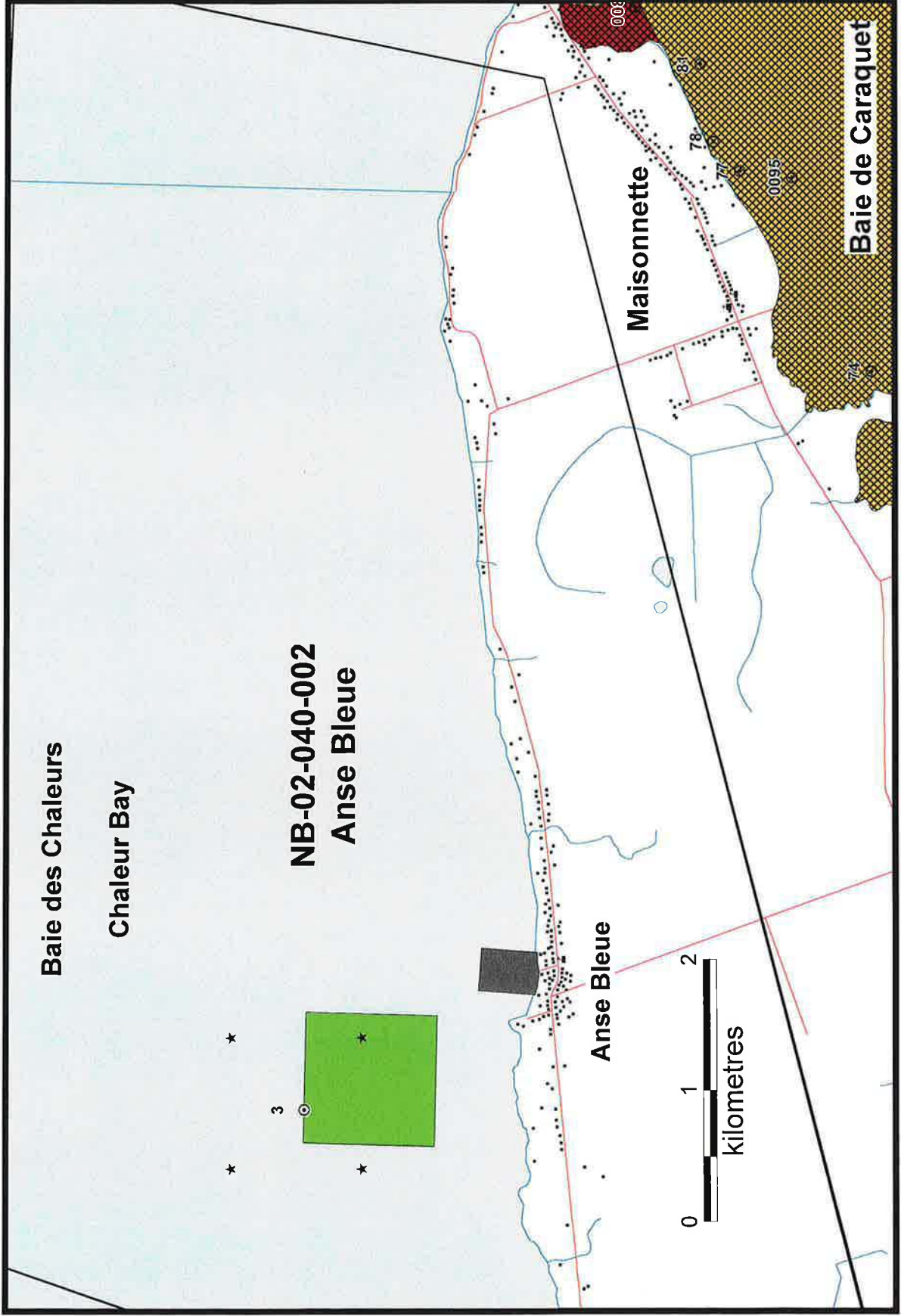


**figure 4    Bathurst Harbour / havre de Bathurst ( NB-02-020-001 )**

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**Figure 5    Stonehaven (NB-02-030-002 )**



**Figure 6    Anse-Bleue ( NB-02-040-002 )**

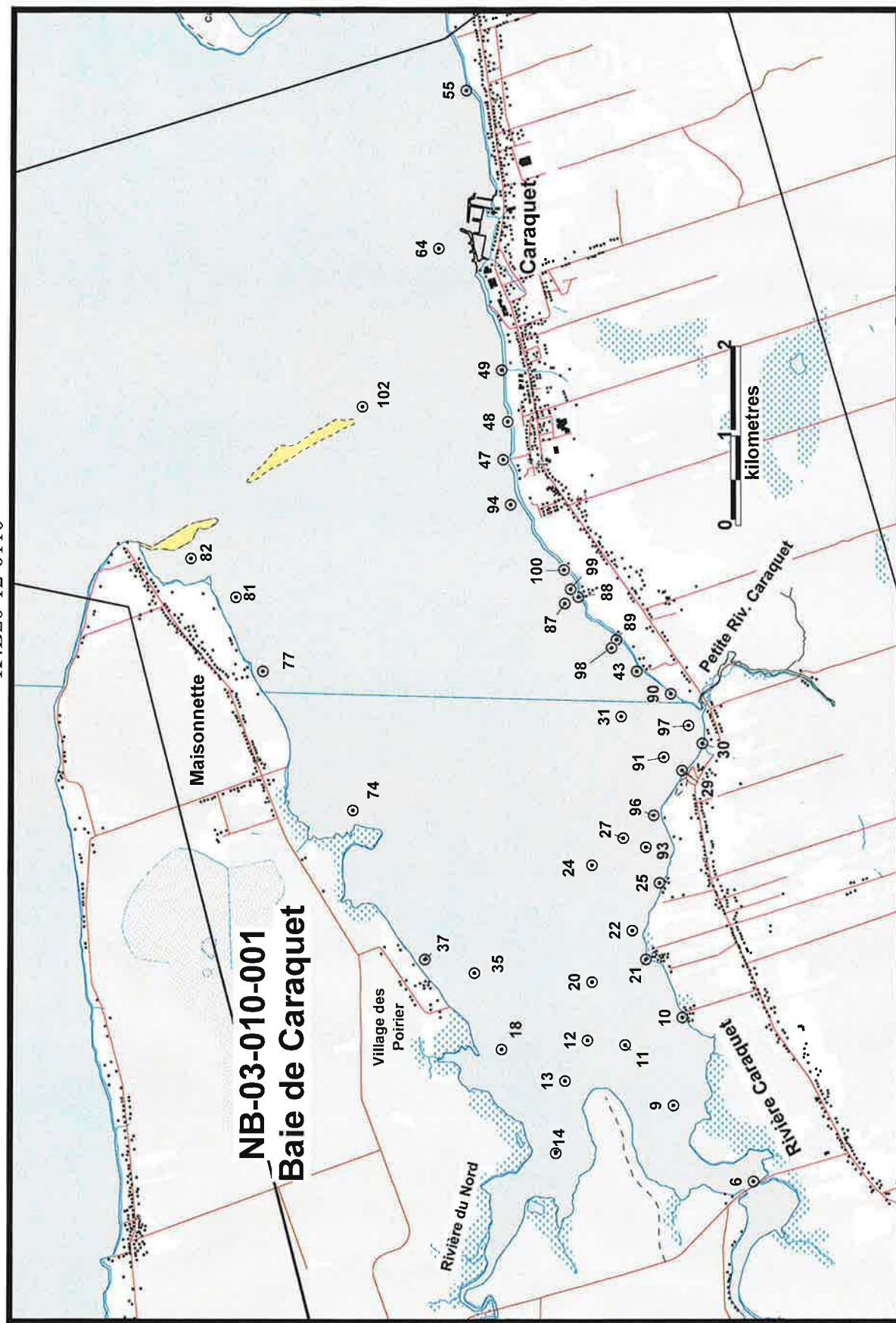


Figure 7 Baie de Caraquet / Caraquet Bay ( NB-03-010-001 )

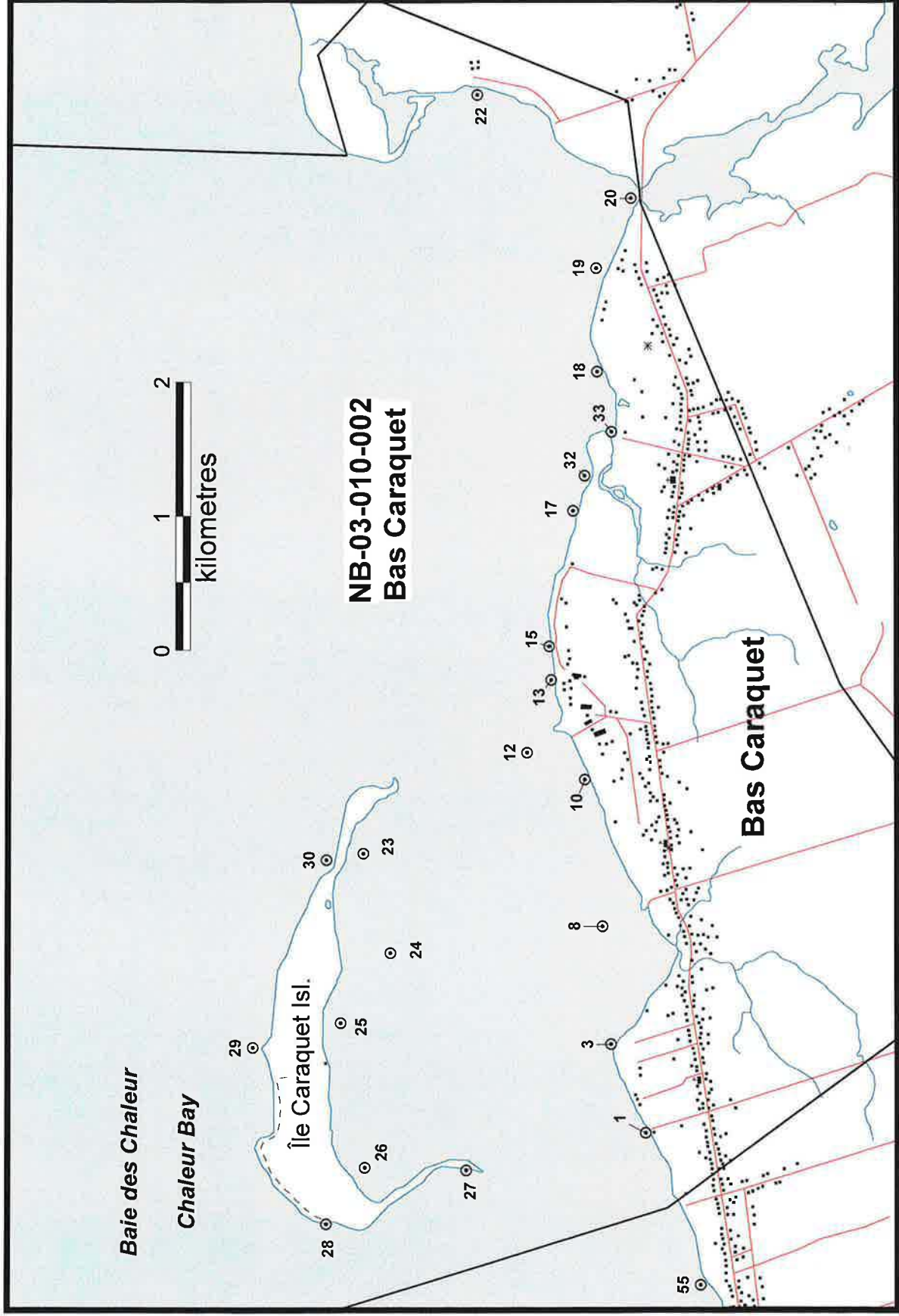


Figure 8 Bas-Caraquet ( NB-03-010-002 )

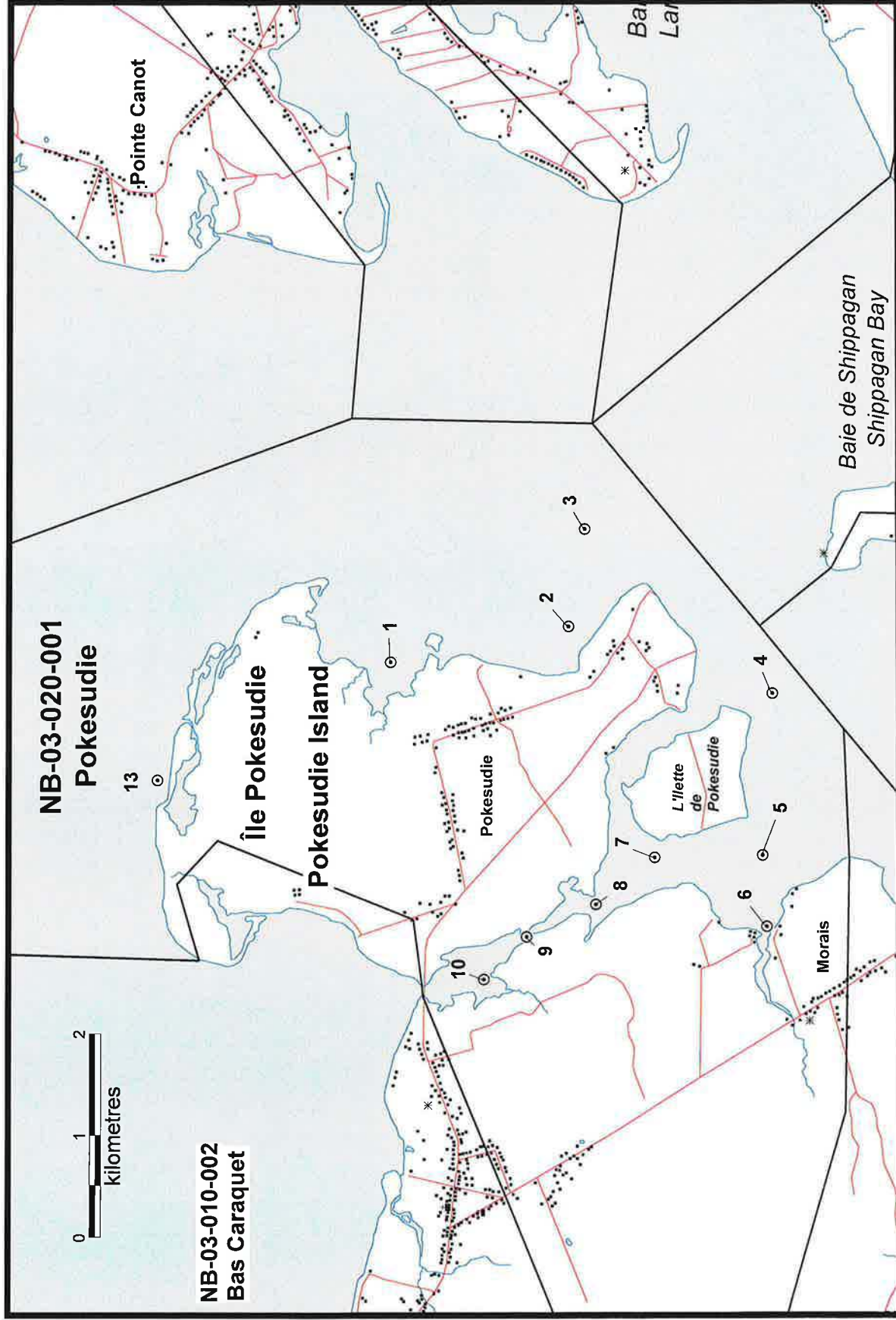
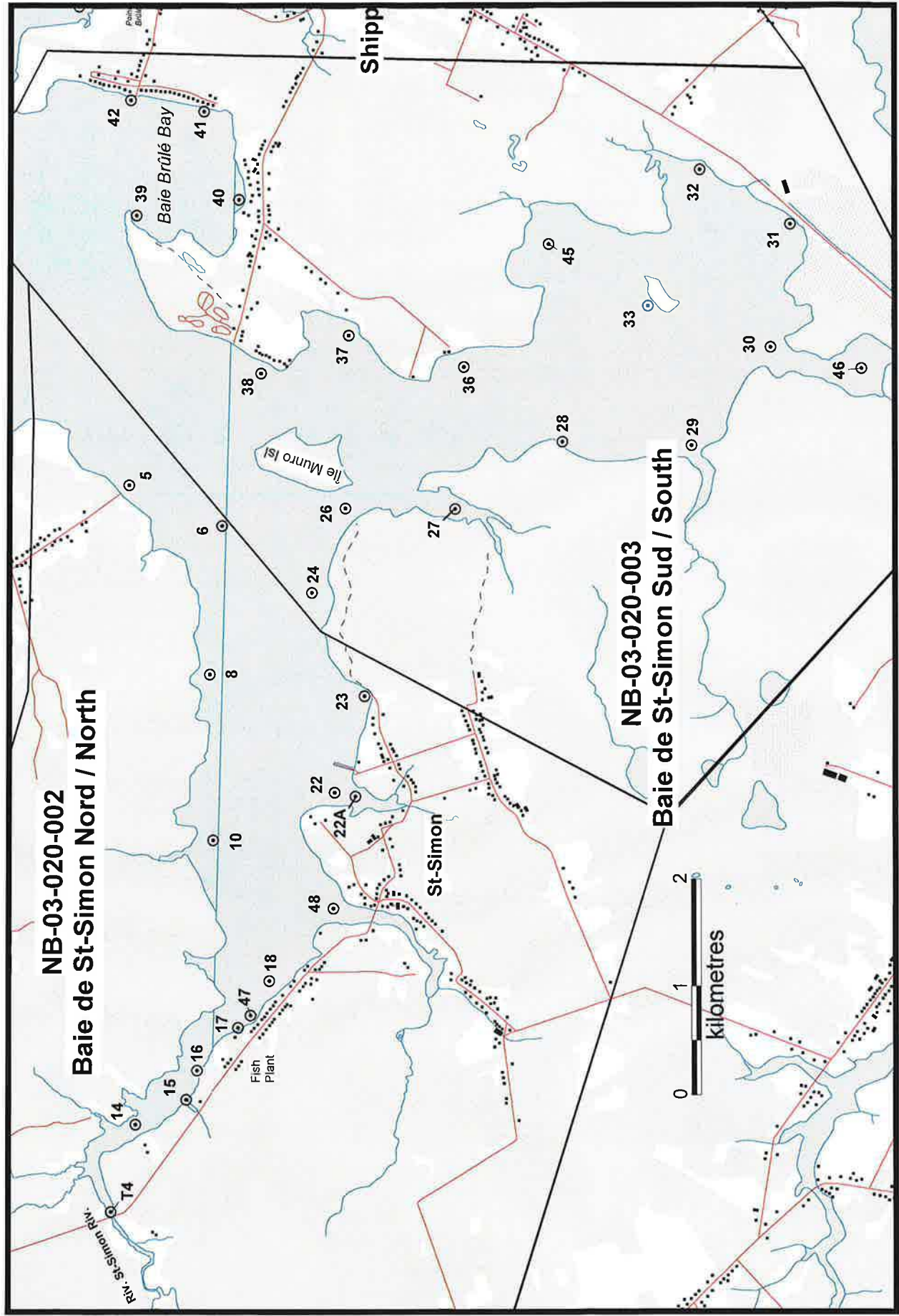
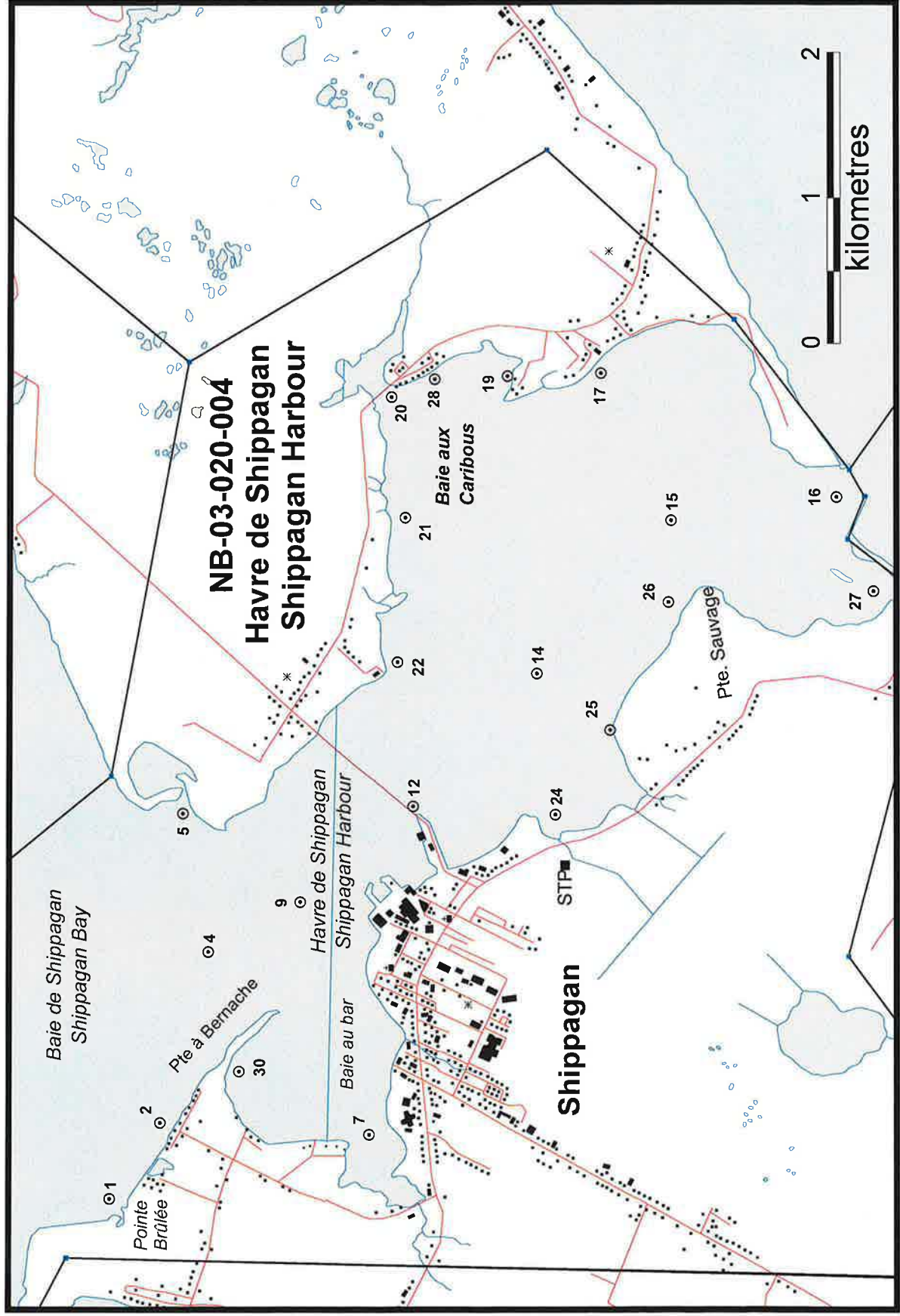


Figure 9 Île Pokesudie Island ( NB-03-020-001 )



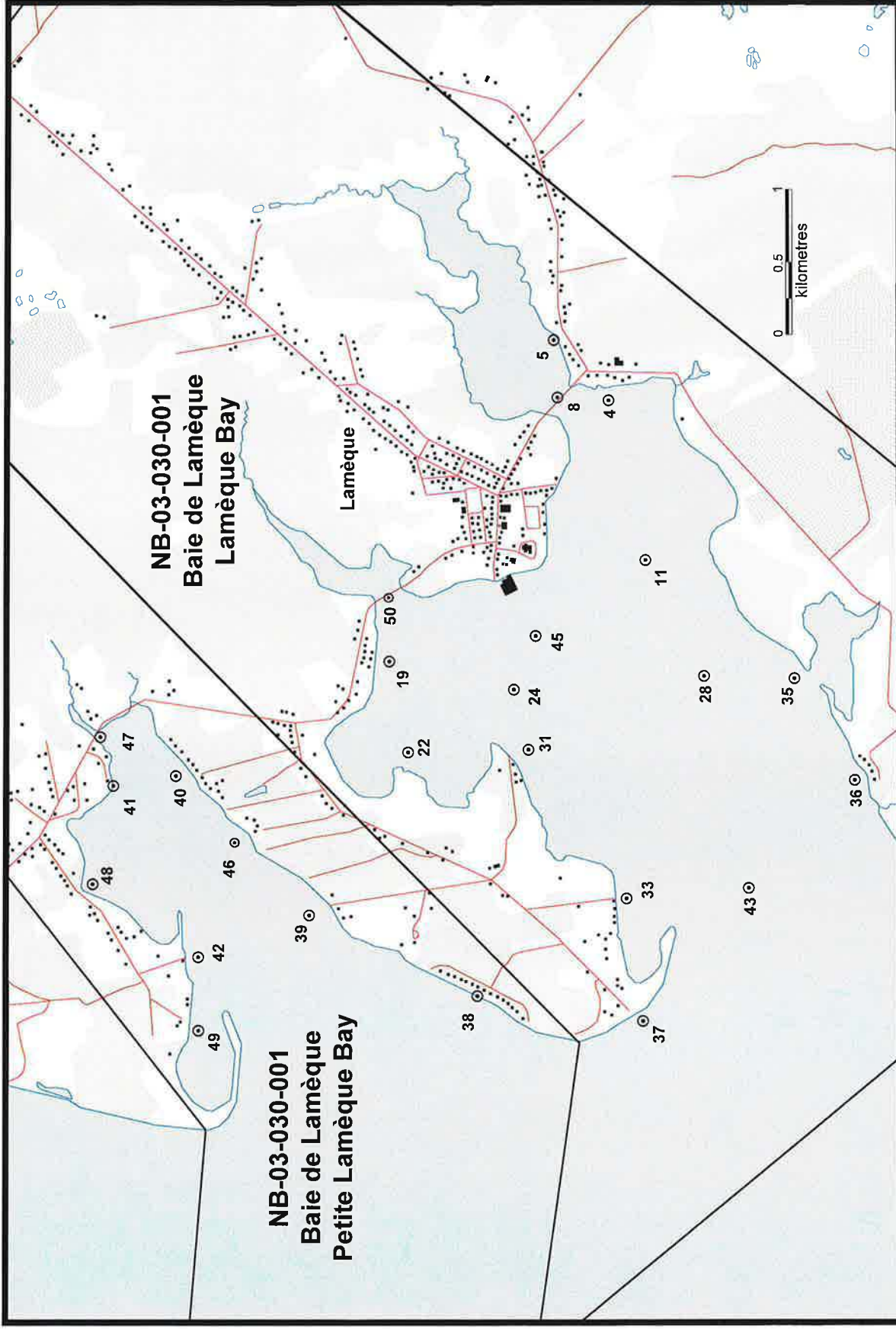
**Figure 10**      **Baie St-Simon Nord & Sud / St-Simon Bay North & South (NB-03-020-003)**

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K4B20-12-0110

**Figure 11    Havre de Shippagan / Shippagan Harbour ( NB-03-020-004 )**



**Figure 12 Baie de Lamèque / Lamèque Bay ( NB-03-030-001 ) &  
Baie de Petite Lamèque / Petite Lamèque Bay (NB 03-030-002)**

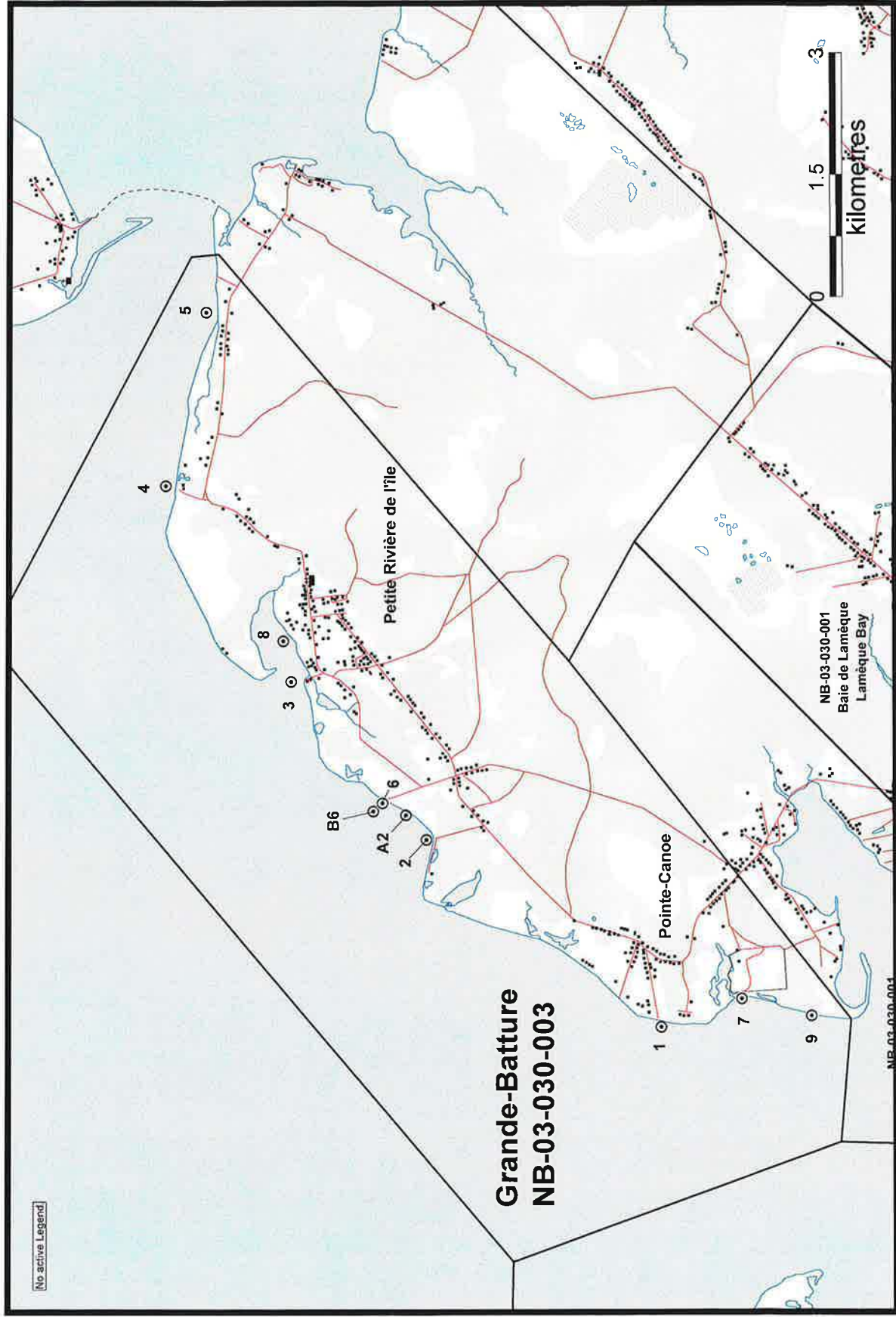
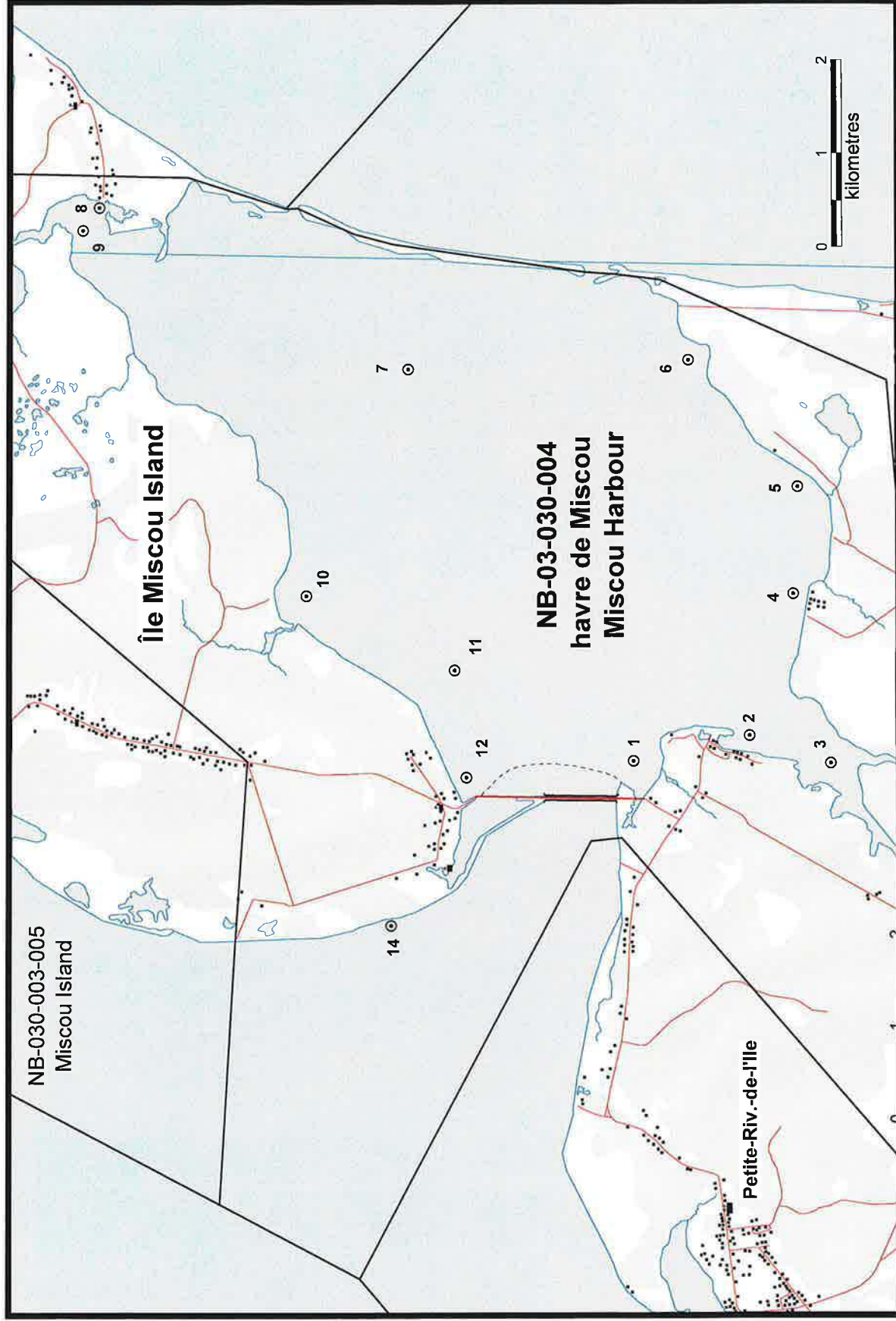
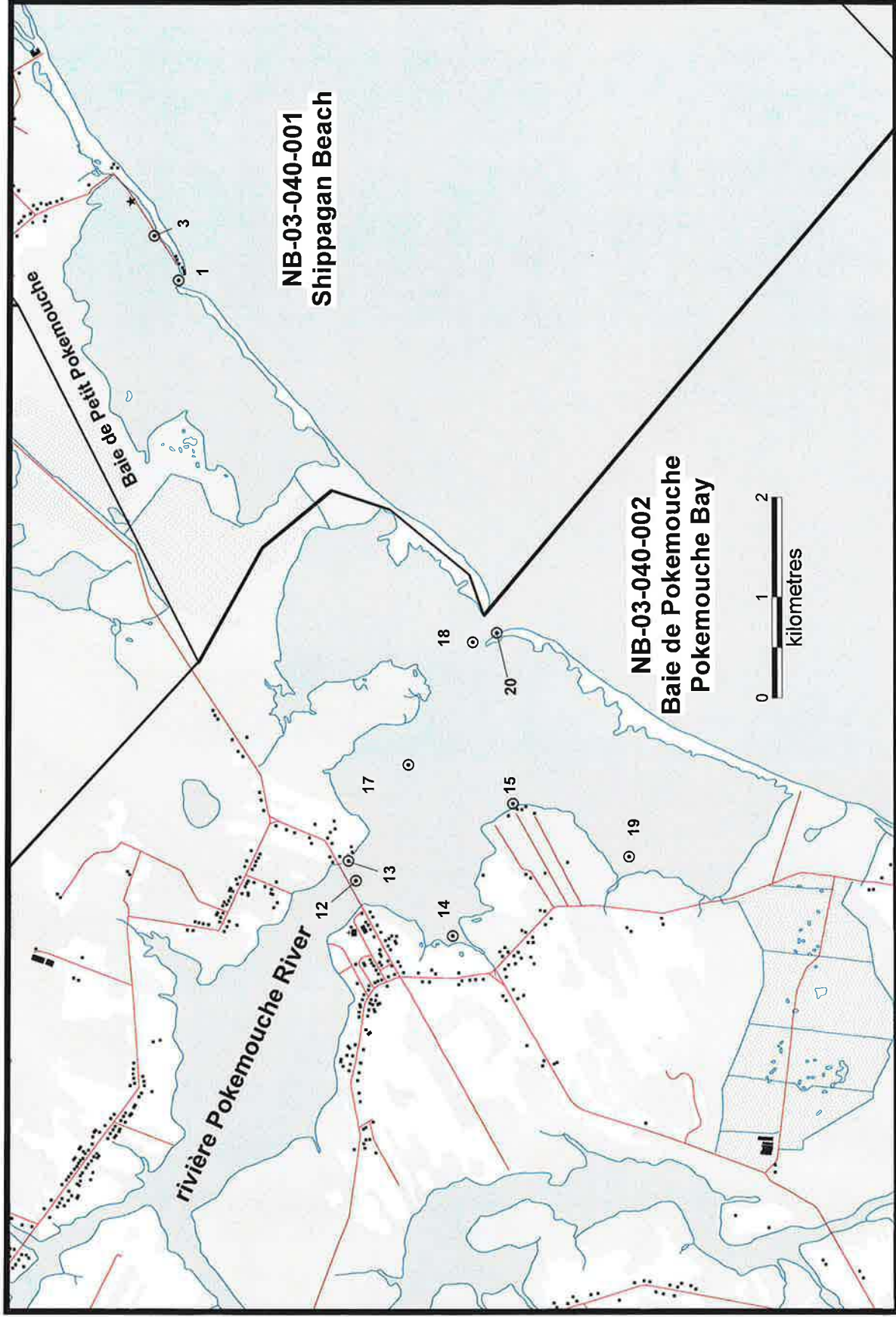


Figure 13 Grande Batture (NB-03-030-003)



**Figure 14** Havre Miscou / Miscou Harbour (NB-03-030-004)



**Figure 15 Shippagan Beach (NB 03-040-001) & Baie de Pokemouche Bay (NB-03-040-002)**

K4B20-12-0110

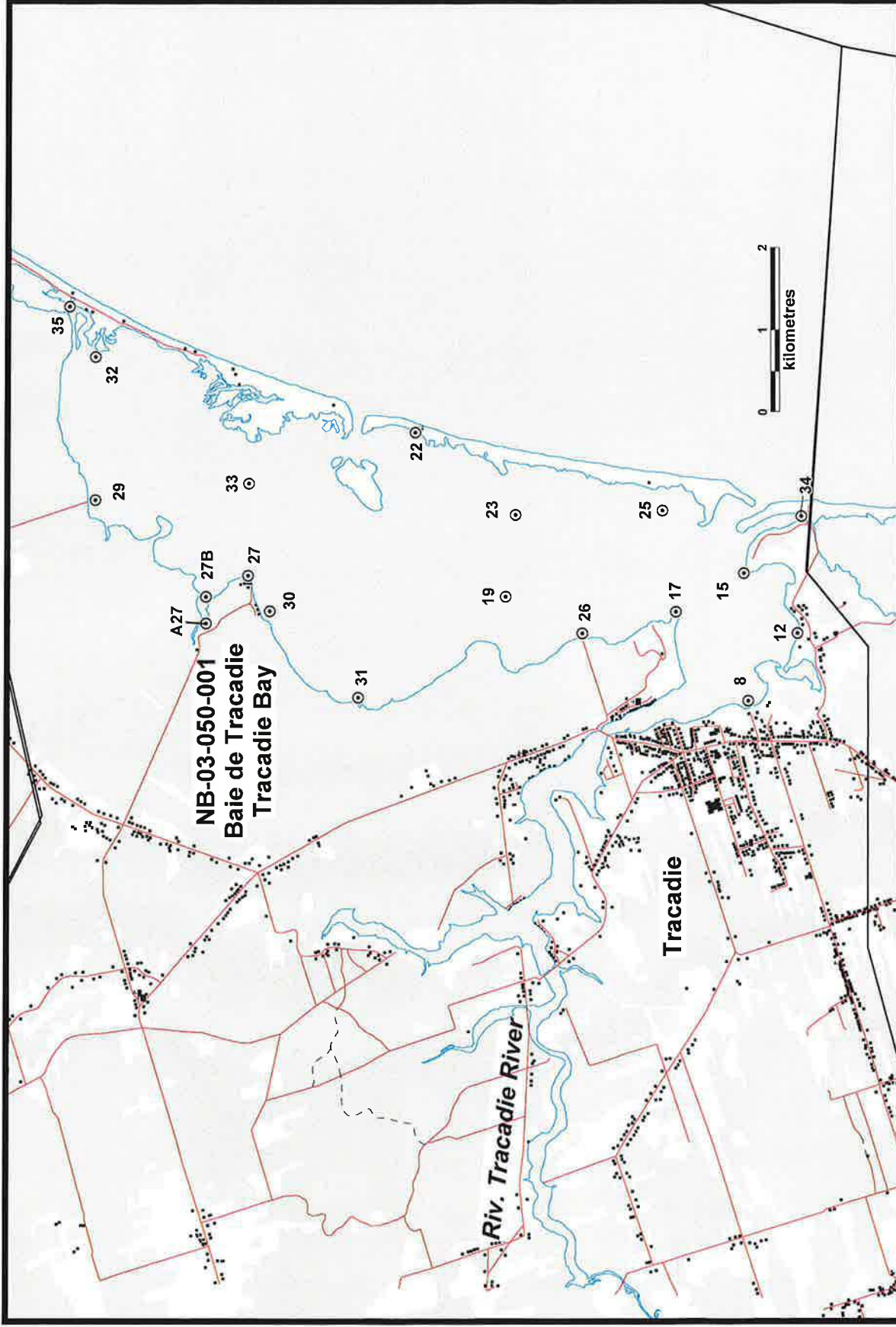
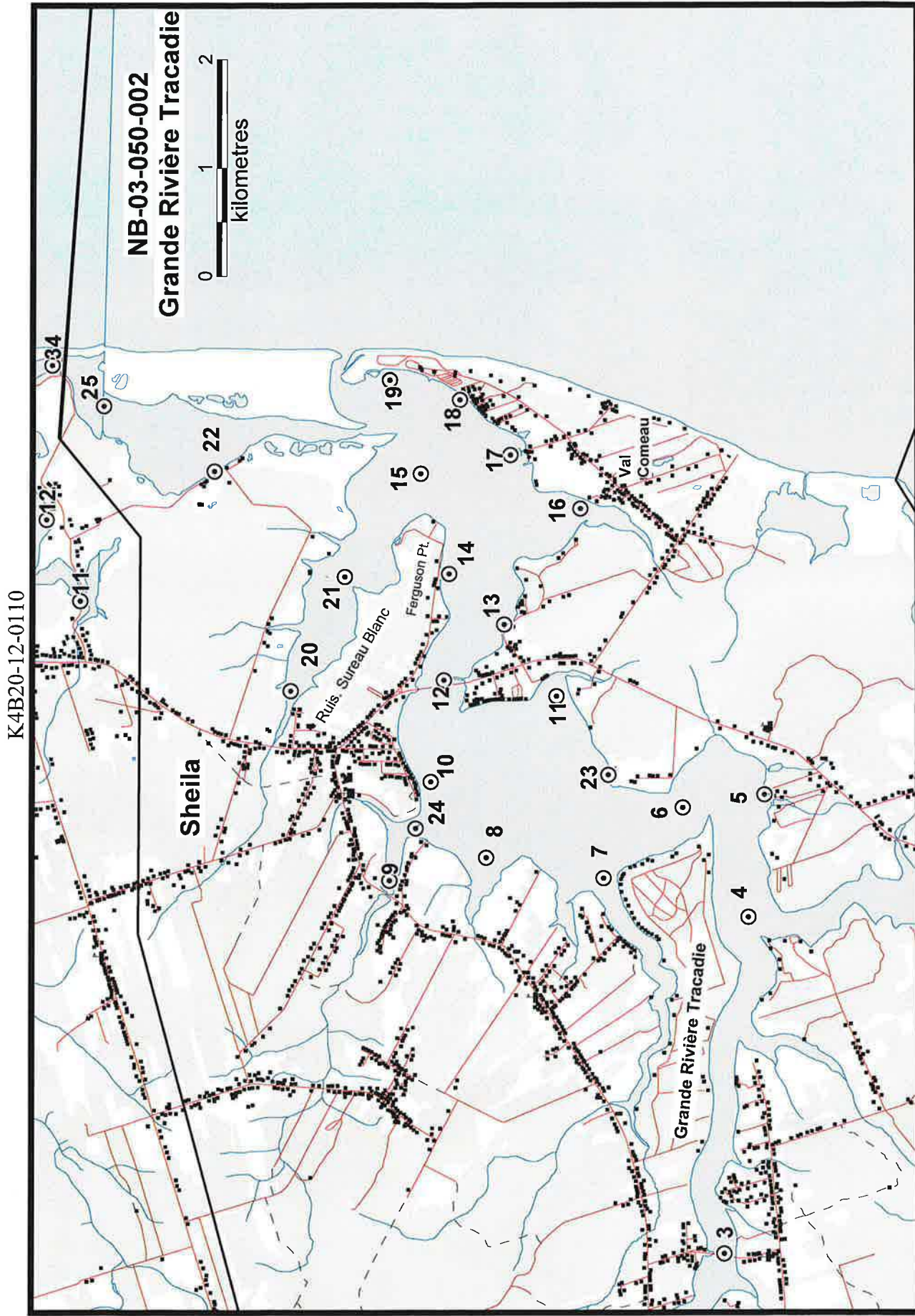


Figure 16 Baie de Tracadie / Tracadie Bay (NB-03-050-001)



**Figure 17** Grande Rivière de Tracadie / Big Tracadie River (NB-03-050-002)

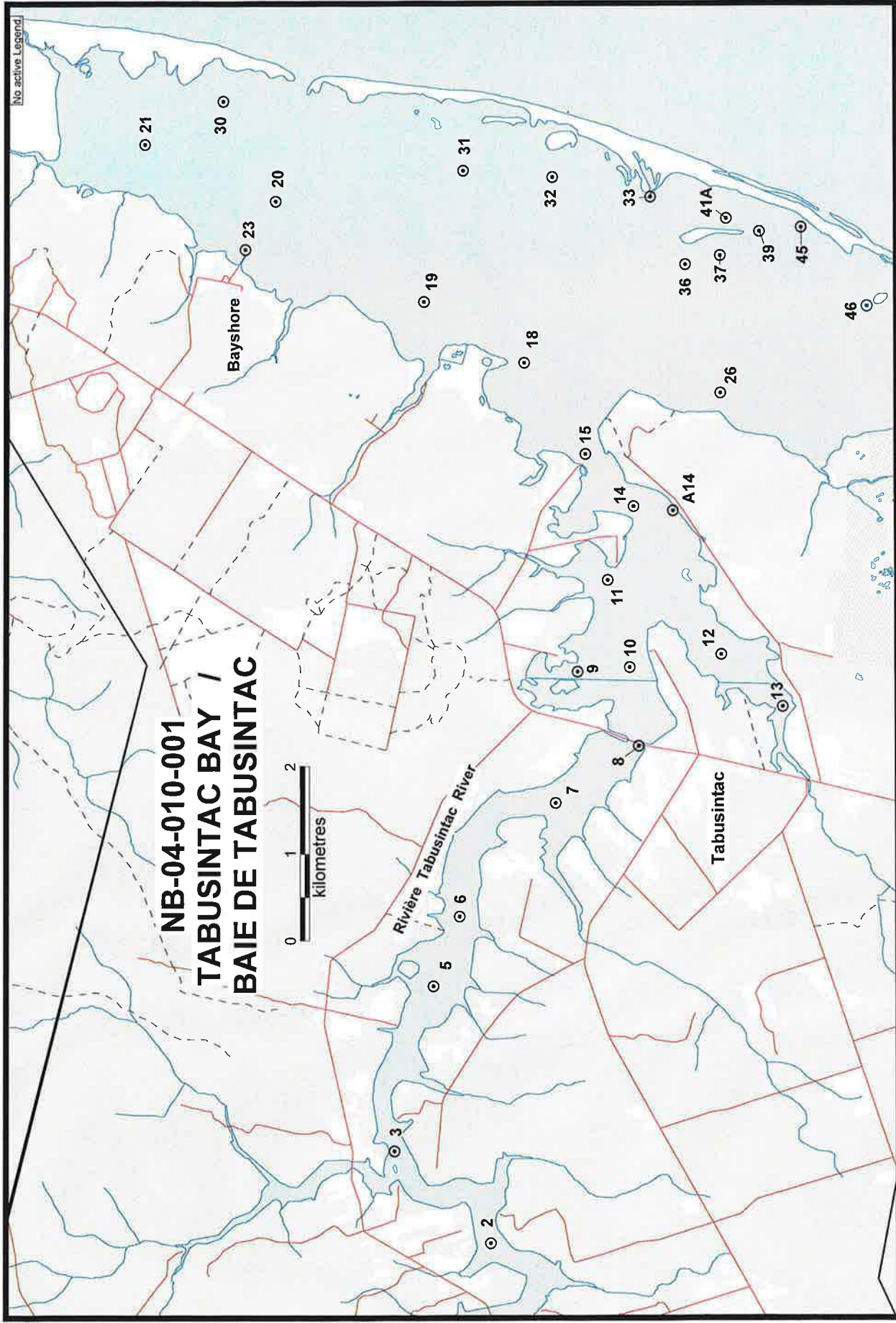
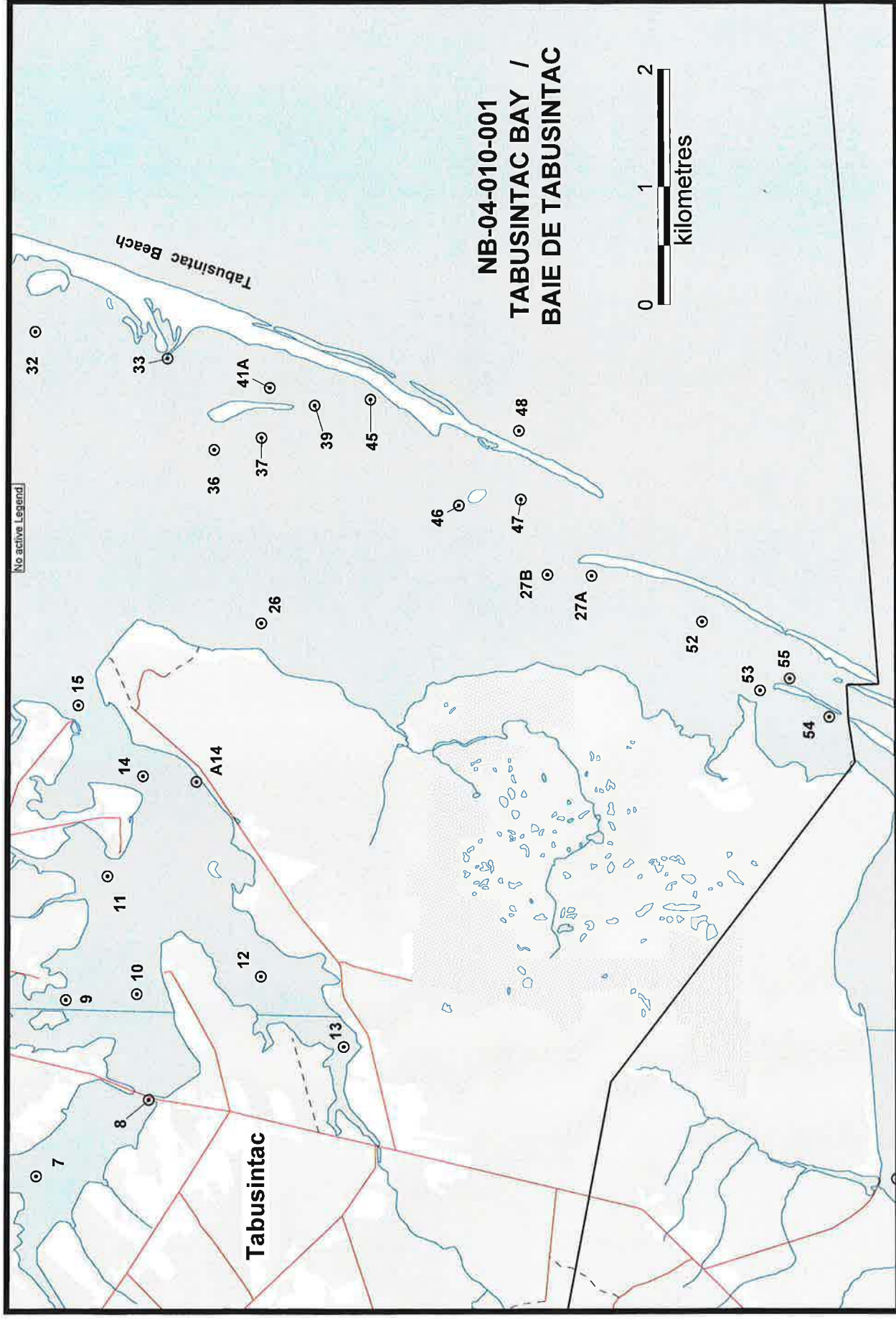
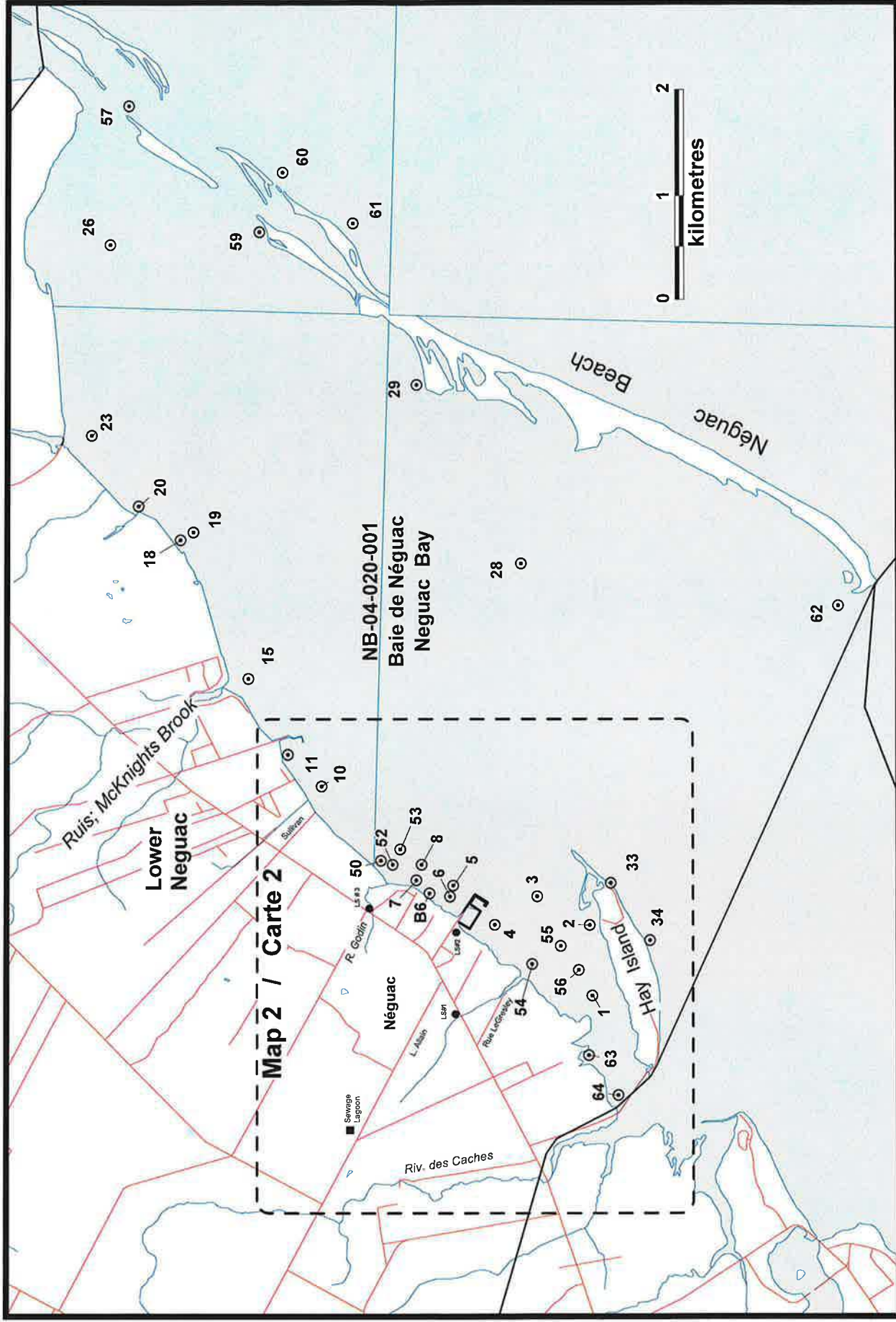


FIGURE 18 TABUSINTAC RIVER AND BAY (NORTH), NB-04-010-001

**K4B20-12-0110**  
**RIVIÈRE & BAIE DE TABUSINTAC (NORD), NB-04-010-001**



**FIGURE 19** TABUSINTAC BAY (SOUTH) / BAIE DE TABUSINTAC (SUD) NB-04-010-001



**FIGURE 20A**      **BAIE DE NÉGUAC / NEGUAC BAY (NB-04-020-001)**

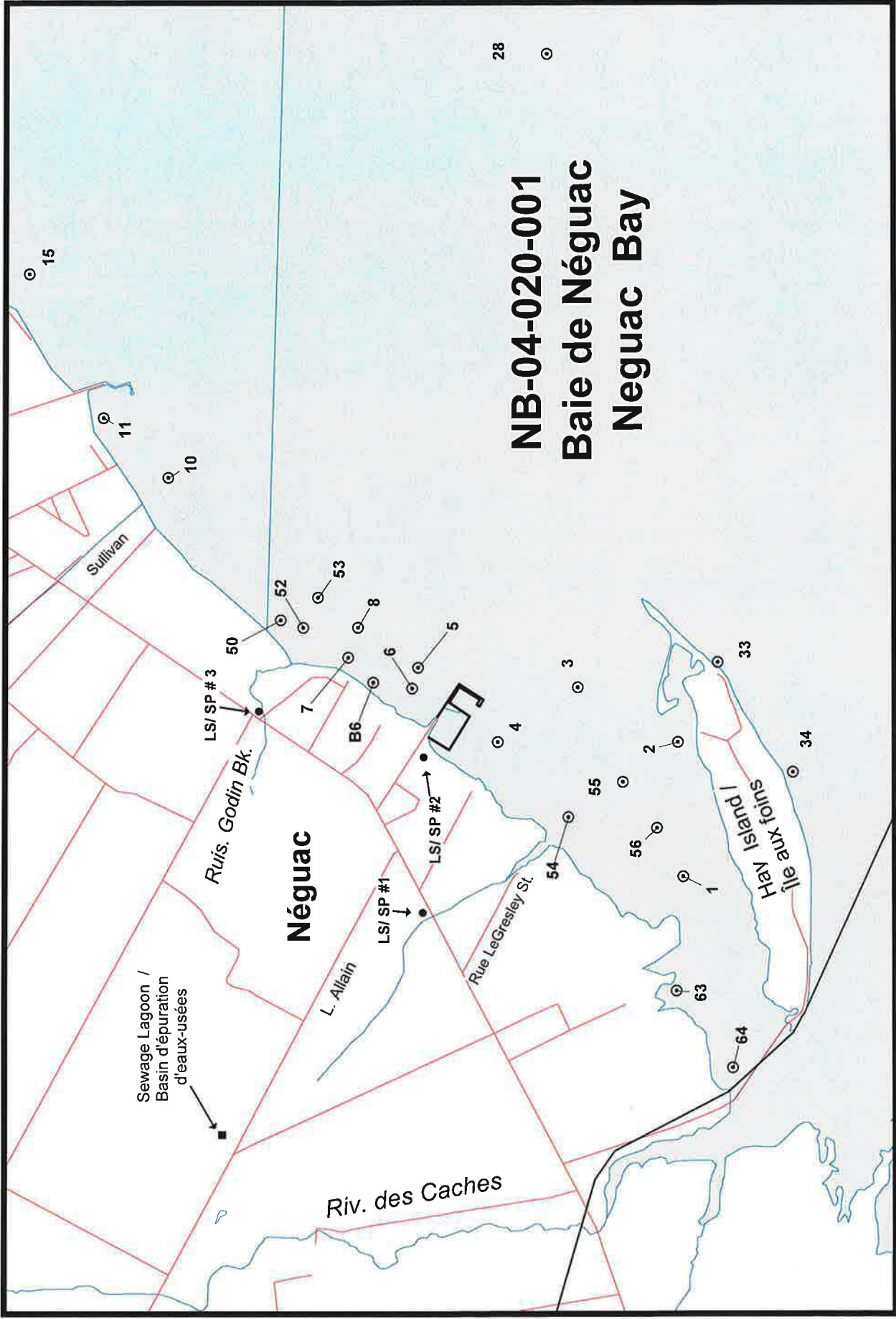


FIGURE 20B NÉGUAC & ÎLE AUX FOINS / NEGUAC & HAY ISLAND (NB-04-020-001)

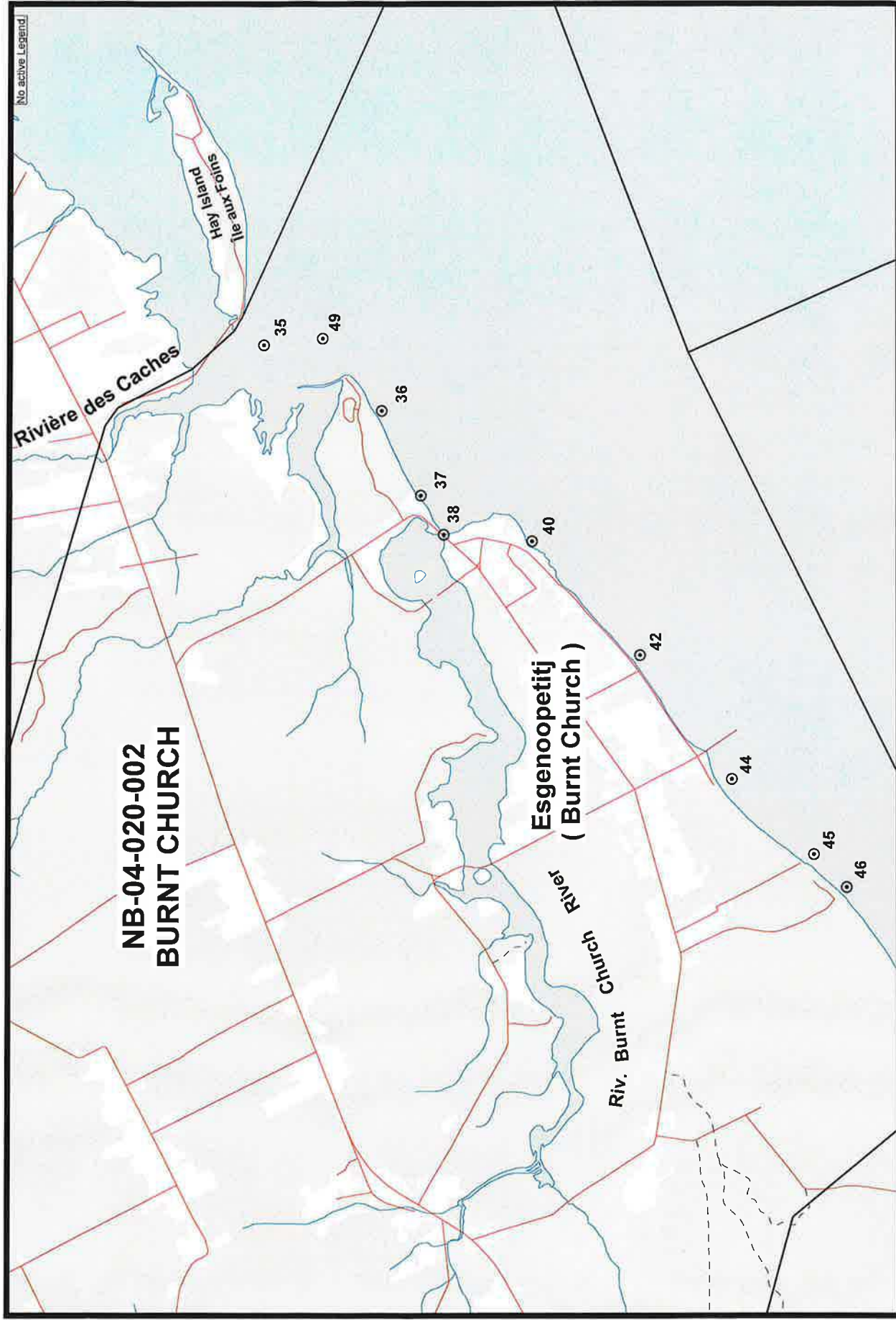


FIGURE 21 BURNT CHURCH / ESGENOOPETITJ (NB-04-020-002)

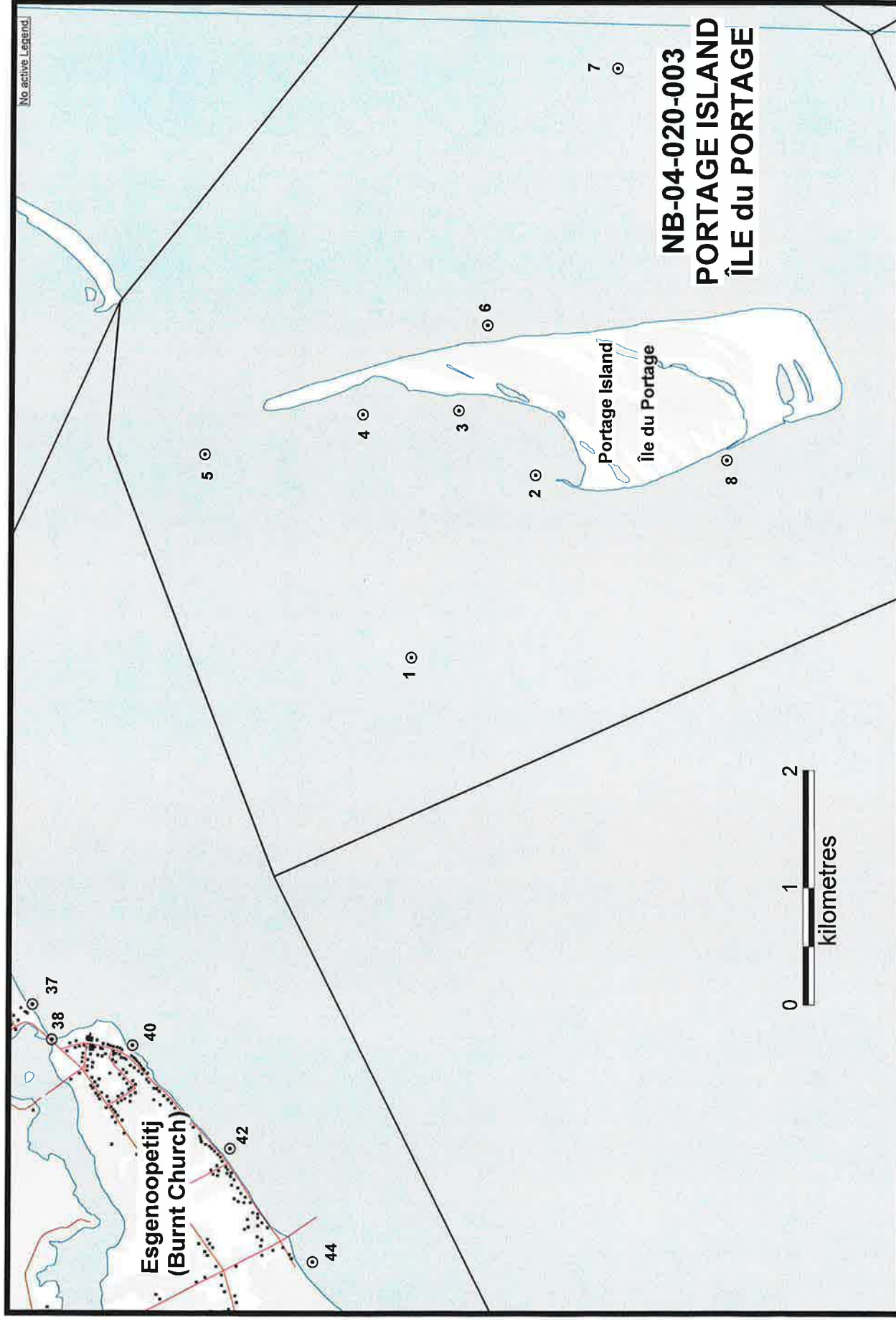


FIGURE 22 PORTAGE ISLAND / ÎLE DU PORTAGE (NB-04-020-003)

## APPENDIX 3

### Marine Water Quality Sampling Station Descriptions for Northeastern NB

#### Sampling Station Location for NEW MILLS (NB-01-020-003)

Station	UTM (ZN 19 NAD 27)		Lat	Long
	Easting	Northing		
14	705235	5317650	47.9812	-66.2497
15	706525	5317300	47.9776	-66.2326
16	707983	5316805	47.9727	-66.2133
17	708900	5317025	47.9743	-66.2009
18	710000	5317150	47.9751	-66.1861
19	710000	5316850	47.9724	-66.1863
21	710150	5316550	47.9697	-66.1844
22	710925	5316350	47.9676	-66.1742
25	712900	5316075	47.9645	-66.1479
26	713400	5315775	47.9616	-66.1413
28	714117	5314816	47.9528	-66.1322
29	715250	5314950	47.9536	-66.1170

#### Sampling Station Location for HERON ISLAND (NB-01-020-004)

Station	UTM (ZN 19 NAD 27)		Lat	Long
	Easting	Northing		
2	711425	5320325	48.0032	-66.1655
3	713475	5319750	47.9973	-66.1383
4	714625	5318625	47.9868	-66.1235
5	714100	5318050	47.9818	-66.1308
6	712925	5318200	47.9836	-66.1465
7	712450	5319200	47.9927	-66.1523
8	711075	5320200	48.0022	-66.1703
10	710225	5319550	47.9966	-66.1820
11	709375	5320475	48.0052	-66.1929
12	709000	5320850	48.0087	-66.1977
13	712920	5320075	48.0004	-66.1456
31	711500	5318500	47.9867	-66.1654

#### Sampling Station Location for NASH CREEK (NB-01-030-001)

Station	UTM (ZN 19 NAD 27)		Lat	Long
	Easting	Northing		
1	716175	5313725	47.9423	-66.1052
3	717325	5312350	47.9295	-66.0905
4	717805	5311994	47.9262	-66.0843
8	721041	5312072	47.9258	-66.0410
11	722436	5312171	47.9262	-66.0223
13	722100	5311650	47.9216	-66.0271
25	717900	5312550	47.9311	-66.0828
26	721800	5312600	47.9302	-66.0306
27	719100	5312325	47.9287	-66.0668
28	720750	5312225	47.9272	-66.0448

### Sampling Station Location for ARMSTRONG BROOK (NB-01-030-002)

Station	UTM (ZN 19-20 NAD 27)		Lat	Long
	Easting	Northing		
15	723150	5312400	47.9280	-66.0126
25	724170	5311825	47.9225	-65.9993

### Sampling Station Location for BERESFORD BEACH (NB-02-010-004)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
11	297660	5287425	47.7104	-65.6974
12	298000	5286900	47.7058	-65.6927
13	298525	5286175	47.6995	-65.6853
15	300105	5284285	47.6830	-65.6634
16	299425	5285200	47.6909	-65.6729

### Sampling Station Location for BATHURST HARBOUR (NB-02-020-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
6	303275	5280975	47.6542	-65.6198
21	302400	5283375	47.6755	-65.6325
22	303075	5282550	47.6683	-65.6231
27	302475	5282175	47.6647	-65.6309
29	301965	5282570	47.6681	-65.6379
30	301075	5283300	47.6744	-65.6501

### Sampling Station Location for STONEHAVEN (NB-02-030-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	321700	5291600	47.7550	-65.3790
2	319450	5291515	47.7537	-65.4089

### Sampling Station Location for ANSE BLEUE (NB-02-040-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
3	343250	5301000	47.8451	-65.095

# Sampling Station Location for BAIE DE CARAQUET (NB-03-010-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
6	344780	5292220	47.7666	-65.0715
9	345625	5293100	47.7747	-65.0605
10	346600	5293000	47.7740	-65.0475
11	346300	5293630	47.7796	-65.0517
12	346350	5294050	47.7834	-65.0512
13	345900	5294300	47.7856	-65.0573
14	345100	5294400	47.7863	-65.0680
18	346250	5295000	47.7919	-65.0529
20	347000	5294000	47.7831	-65.0425
21	347250	5293400	47.7778	-65.0389
22	347575	5293550	47.7792	-65.0347
24	348300	5294000	47.7834	-65.0251
25	348100	5293250	47.7766	-65.0276
27	348600	5293650	47.7803	-65.0210
29	349350	5293000	47.7747	-65.0108
30	349650	5292775	47.7727	-65.0067
31	349950	5293670	47.7808	-65.0030
35	347100	5295300	47.7948	-65.0416
37	347250	5295850	47.7998	-65.0398
43	350450	5293500	47.7794	-64.9963
47	352800	5294995	47.7934	-64.9655
48	353225	5294945	47.7931	-64.9598
49	353800	5295000	47.7937	-64.9521
55	356905	5295398	47.7980	-64.9108
64	355150	5295700	47.8003	-64.9343
74	348910	5296650	47.8074	-65.0179
77	350450	5297650	47.8167	-64.9977
81	351270	5297950	47.8196	-64.9869
82	351700	5298450	47.8242	-64.9813
87	351200	5294300	47.7868	-64.9866
88	351275	5294150	47.7855	-64.9855
89	350800	5293725	47.7815	-64.9917
90	350200	5293125	47.7760	-64.9995
91	349500	5293200	47.7765	-65.0089
93	348500	5293400	47.7781	-65.0223
94	352300	5294900	47.7924	-64.9721
96	348850	5293325	47.7775	-65.0176
97	349850	5292940	47.7742	-65.0081
98	350710	5293790	47.7821	-64.9929
99	351360	5294245	47.7863	-64.9844
100	351575	5294320	47.7871	-64.9816
102	353390	5296560	47.8076	-64.9581

### Sampling Station Location for BAS-CARAQUET (NB-03-010-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	358039	5295803	47.8019	-64.8958
3	358700	5296060	47.8043	-64.8871
8	359580	5296120	47.8050	-64.8753
10	360679	5296251	47.8065	-64.8607
12	360880	5296680	47.8104	-64.8582
13	361360	5296480	47.8087	-64.8517
15	361620	5296515	47.8091	-64.8482
17	362689	5296336	47.8077	-64.8339
18	363726	5296156	47.8063	-64.8200
19	364500	5296160	47.8065	-64.8097
20	365025	5295900	47.8042	-64.8026
22	365800	5297050	47.8147	-64.7926
23	360125	5297900	47.8212	-64.8686
24	359380	5297700	47.8192	-64.8785
25	358860	5298070	47.8224	-64.8856
26	357780	5297890	47.8206	-64.8999
27	357760	5297140	47.8138	-64.9000
28	357360	5298180	47.8231	-64.9056
29	358675	5298725	47.8283	-64.8883
30	360075	5298175	47.8236	-64.8694
32	362950	5296250	47.8069	-64.8304
33	363280	5296050	47.8052	-64.8259

### Sampling Station Location for POKESUDIE ISLAND (NB-03-020-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	368280	5296150	47.8072	-64.7592
2	368630	5294400	47.7915	-64.7540
3	369590	5294240	47.7902	-64.7412
4	367970	5292400	47.7734	-64.7622
5	366380	5292500	47.7739	-64.7835
6	365680	5292460	47.7734	-64.7928
7	366360	5293560	47.7835	-64.7840
8	365900	5294140	47.7886	-64.7904
9	365580	5294820	47.7946	-64.7948
10	365160	5295240	47.7983	-64.8006
13	367125	5298450	47.8276	-65.7753

### Sampling Station Location for BAIE ST-SIMON NORTH (NB-03-020-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
T4	359000	5290900	47.758	-64.8814
5	365745	5290745	47.7580	-64.791
6	365370	5289890	47.7503	-64.7961
8	364000	5290000	47.7510	-64.8144
10	362470	5289970	47.7504	-64.8348
14	359840	5290680	47.7562	-64.8701
15	360070	5290216	47.7521	-64.8669
16	360340	5290125	47.7478	-64.8631
17	360735	5289740	47.7479	64.8578
18	361170	5289450	47.7454	-64.8520
22	362910	5288850	47.7404	-64.8286
22A	362875	5288660	47.7387	-64.8290
23	363800	5288575	47.7381	-64.8166
47	360850	5289625	47.7469	64.8563
48	361840	5288860	47.7403	-64.8429

### Sampling Station Location for BAIE ST-SIMON SOUTH (NB-03-020-003)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
24	364750	5289060	47.7427	-64.8041
26	365530	5288750	47.7400	-64.7936
27	365525	5287750	47.731	-64.7934
28	366146	5286759	47.7223	-64.7848
29	366110	5285560	47.7115	-64.7849
30	367020	5284830	47.7051	-64.7726
31	368160	5284650	47.7037	-64.7573
32	368660	5285480	47.7113	-64.7509
33	367400	5285960	47.7153	-64.7679
36	366840	5287660	47.7305	-64.7758
37	367130	5288720	47.7401	-64.7723
38	366780	5289530	47.7473	-64.7772
39	368240	5290685	47.7580	-64.7581
40	368390	5289740	47.7495	-64.7558
41	369200	5290060	47.7526	-64.7451
42	369300	5290740	47.7587	-64.7440
45	367975	5286875	47.7237	-64.7605
46	366825	5284000	47.6976	-64.7749

### Sampling Station Location for SHIPPAGAN HARBOUR (NB-03-020-004)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	370160	5291225	47.7632	-64.7331
2	370680	5290880	47.7602	-64.7256
4	371850	5290550	47.7575	-64.7099
5	372800	5290725	47.7593	-64.6973
7	370600	5289450	47.7474	-64.7262
9	372190	5289920	47.7519	-64.7052
12	372850	5289150	47.7451	-64.6962
14	373760	5288300	47.7377	-64.6838
15	374810	5287380	47.7296	-64.6695
16	374970	5286250	47.7195	-64.6671
17	375820	5287860	47.7341	-64.6562
19	375800	5288500	47.7398	-64.6566
20	375640	5289300	47.7470	-64.6590
21	374830	5289200	47.7460	-64.6698
22	374030	5289320	47.7469	-64.6805
24	372790	5288175	47.7363	-64.6967
25	373375	5287800	47.7331	-64.6888
26	374250	5287400	47.7297	-64.6770
27	374325	5286000	47.7171	375780
28	375780	5289000	47.7443	-64.6570
30	371100	5290200	47.7542	-64.7198

### Sampling Station Location for LAMEQUE BAY (NB-03-030-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
4	377180	5293650	47.7864	-64.6397
5	377600	5294000	47.7897	-64.6342
8	377200	5294000	47.7896	-64.6395
11	376090	5293400	47.7840	-64.6542
19	375400	5295150	47.7996	-64.6639
22	374780	5295020	47.7983	-64.6721
24	375210	5294300	47.7919	-64.6662
28	375300	5293000	47.7802	-64.6646
31	374800	5294200	47.7909	-64.6716
33	373780	5293530	47.7847	-64.6850
35	375285	5292385	47.7747	-64.6646
36	374590	5291975	47.7709	-64.6738
37	372940	5293420	47.7835	-64.6962
43	373850	5292700	47.7772	-64.6839
45	375575	5294150	47.7906	-64.6613
50	375835	5295150	47.7997	-64.6581

### Sampling Station Location for PETITE LAMEQUE BAY (NB-03-030-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
38	373110	5294550	47.7937	-64.6943
39	373720	5295610	47.8034	-64.6864
40	374630	5296540	47.8119	-64.6746
41	374550	5297035	47.8164	-64.6758
42	373380	5296450	47.8109	-64.6912
46	374165	5296200	47.8088	-64.6807
47	374885	5297125	47.8172	-64.6713
48	373875	5297175	47.8175	-64.6848
49	372875	5296450	47.8108	-64.698

### Sampling Station Location for GRANDE BATTURE (NB-03-030-003)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	372100	5298725	47.8311	-64.7090
2	374400	5301600	47.8574	-64.6791
A2	374700	5301850	47.8597	-64.6752
3	376340	5303255	47.8727	-64.6536
4	378750	5304800	47.8870	-64.6219
5	380875	5304300	47.8829	-64.5933
6	374850	5302150	47.8624	-64.6732
B6	374750	5302250	47.8633	-64.6746
7	372450	5297750	47.8224	-64.704
8	376845	5303355	47.8737	-64.6469
9	372240	5296895	47.8147	-64.7066

### Sampling Station Location for MISCOU HARBOUR (NB-03-030-004)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	382425	5304025	47.8807	-64.5725
2	382700	5302775	47.8695	-64.5685
3	382400	5301900	47.8616	-64.5723
4	384220	5302300	47.8655	-64.5481
5	385375	5302250	47.8653	-64.5326
6	386750	5303425	47.8761	-64.5145
7	386650	5306450	47.9033	-64.5167
8	388400	5309800	47.9337	-64.4941
9	388150	5309975	47.9353	-64.4975
10	384200	5307550	47.9127	-64.5497
11	383400	5305950	47.8982	-64.5600
12	382250	5305825	47.8969	-64.5753
13	386875	5309300	47.9290	-64.5144
14	380650	5306650	47.9040	-64.597

### Sampling Station Location for SHIPPAGAN BEACH (NB-03-040-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		

1	369845	5282915	47.6884	-64.7338
3	370290	5283160	47.6907	-64.7285

### Sampling Station Location for POKEMOUCHE BAY (NB-03-040-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
12	363860	5281140	47.6712	-64.8135
13	364059	5281226	47.6721	-64.8109
14	363310	5280180	47.6625	-64.8205
15	364630	5279580	47.6574	-64.8028
17	365020	5280620	47.6668	-64.7979
18	366240	5279980	47.6613	-64.7815
19	364100	5278425	47.6469	-64.8095
20	366335	5279740	47.6592	-64.7801

### Sampling Station Location for TRACADIE BAY (NB-03-050-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
8	356610	5263350	47.5097	-64.9042
12	357430	5262750	47.5045	-64.8932
15	358160	5263400	47.5105	-64.8837
17	357690	5264230	47.5178	-64.8902
19	357875	5266300	47.5365	-64.8884
22	359875	5267400	47.5468	-64.8622
23	358870	5266180	47.5356	-64.8751
25	358920	5264390	47.5196	-64.8739
26	357430	5265370	47.5280	-64.8940
27	358130	5269440	47.5648	-64.8860
27B	357875	5269950	47.5693	-64.8896
A27	357550	5269950	47.5693	-64.8939
29	359050	5271300	47.5817	-64.8744
30	357700	5269175	47.5623	-64.8916
31	356650	5268100	47.5524	-64.9052
32	360800	5271300	47.5821	-64.8511
33	359250	5269425	47.5649	-64.8711
34	358850	5262700	47.5044	-64.8743
35	361415	5271620	47.5851	-64.8431

# Sampling Station Location for GRANDE RIVIERE TRACADIE (NB-03-050-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
4	353760	5256290	47.4456	-64.9397
6	354770	5256890	47.4512	-64.9265
7	354120	5257620	47.4576	-64.9354
8	354310	5258700	47.4674	-64.9332
10	355010	5259210	47.4753	-64.9363
11	355800	5258050	47.4721	-64.9241
12	355950	5259090	47.4619	-64.9133
13	356464	5258535	47.4712	-64.9116
14	356930	5259040	47.4664	-64.9046
15	357850	5259300	47.4710	-64.8986
16	357530	5257830	47.4735	-64.8865
17	358025	5258475	47.4603	-64.8902
18	358532	5258940	47.4662	-64.8839
19	358710	5259570	47.4705	-64.8773
20	355850	5260500	47.4762	-64.8751
21	356900	5260000	47.4839	-64.9134
22	357875	5261200	47.4906	-64.8867
23	355075	5257575	47.4574	-64.9227
24	354580	5259350	47.4733	-64.9299
25	358475	5262225	47.4999	-64.8791

# Sampling Station Location for TABUSINTAC BAY (NB-04-010-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
2	342400	5245650	47.3472	-65.0865
3	343450	5246750	47.3574	-65.0730
5	345350	5246300	47.3538	-65.0477
6	346150	5246000	47.3513	-65.0370
7	347450	5244900	47.3417	-65.0194
8	348100	5243950	47.3333	-65.0105
9	348950	5244650	47.3398	-64.9995
10	349000	5244050	47.3344	-64.9986
11	350000	5244300	47.3369	-64.9855
12	349150	5243000	47.3250	-64.9963
13	348550	5242300	47.3186	-65.0040
14	350850	5244000	47.3344	-64.9742
A14	350797	5243542	47.3303	-64.9747
15	351450	5244550	47.3395	-64.9664
18	352500	5245250	47.3460	-64.9527
19	353200	5246400	47.3565	-64.9439
20	354350	5248100	47.3721	-64.9292
21	355000	5249600	47.3857	-64.9211
23	353800	5248450	47.3751	-64.9366
26	352150	5243000	47.3257	-64.9566
27A	352550	5240200	47.3006	-64.9504
27B	352560	5240575	47.3040	-64.9504
30	355495	5248700	47.3777	-64.9142
31	354700	5245950	47.3528	-64.9239
32	354625	5244925	47.3436	-64.9245
33	354400	5243800	47.3334	-64.9271
36	353625	5243400	47.3296	-64.9373
37	353725	5243000	47.3260	-64.9358
39	354000	5242550	47.3221	-64.9320
41A	354150	5242930	47.3255	-64.9302
45	354050	5242075	47.3178	-64.9312
46	353150	5241325	47.3109	-64.9429
47	353200	5240800	47.3061	-64.9420
48	353785	5240815	47.3066	-64.9381
52	352160	5239265	47.2920	-64.9553
53	351575	5238775	47.2876	-64.9628
54	351350	5238190	47.2823	-64.9656
55	351675	5238525	47.2853	-64.9614

### Sampling Station Location for NEGUAC BAY (NB-04-020-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	342100	5232725	47.2310	-65.0859
2	342775	5232750	47.2313	-65.0770
3	343050	5233250	47.2359	-65.0736
4	342625	5233725	47.2401	-65.0793
5	343150	5234050	47.2431	-65.0725
6	343045	5234080	47.2434	-65.0739
B6	343075	5234275	47.2451	-65.0736
7	343200	5234400	47.2463	-65.0720
8	343350	5234350	47.2459	-65.0700
10	344100	5235300	47.2546	-65.0604
11	344400	5235625	47.2576	-65.0566
15	345125	5236000	47.2611	-65.0471
18	346450	5236650	47.2673	-65.0298
19	346525	5236525	47.2662	-65.0288
20	346775	5237050	47.2710	-65.0257
23	347450	5237500	47.2752	-65.0169
26	349275	5237325	47.2740	-64.9927
28	346225	5233400	47.2380	-65.0317
29	347938	5234397	47.2474	-65.0094
33	343175	5232550	47.2296	-65.0717
34	342625	5232175	47.2261	-65.0788
50	343388	5234738	47.2494	-65.0696
52	343350	5234625	47.2483	-65.0701
53	343500	5234550	47.2477	-65.0681
54	342400	5233300	47.2362	-65.0822
55	342575	5233025	47.2338	-65.0797
56	342345	5232855	47.2775	-64.9701
57	350600	5237150	47.2727	-64.9752
59	349400	5235900	47.2612	-64.9906
60	350100	5235770	47.2602	-64.9813
61	349400	5235085	47.2539	-64.9903
62	345850	5230350	47.2105	-65.0356
63	341525	5232760	47.2311	-65.0935
64	341085	5232450	47.2282	-65.0992

### Sampling Station Location for BURNT CHURCH (NB-04-020-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
35	341200	5231950	47.2238	-65.0975
36	340700	5231050	47.2156	-65.1038
37	340050	5230750	47.2127	-65.1123
38	339750	5230575	47.2110	-65.1162
40	339700	5229900	47.2050	-65.1166
42	338825	5229075	47.1973	-65.1278
44	337875	5228375	47.1908	-65.1401
45	337300	5227750	47.1850	-65.1475
46	337050	5227500	47.1827	-65.1507
49	341250	5231500	47.2197	-65.0967

# Sampling Station Location for PORTAGE ISLAND (NB-04-020-003)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	343000	5227550	47.1846	-65.0722
2	344550	5226500	47.1756	-65.0514
3	345100	5227150	47.1815	-65.0444
4	345065	5227965	47.1889	-65.0451
5	344725	5229305	47.2008	-65.0501
6	345825	5226900	47.1795	-65.0347
7	348000	5225800	47.1701	-65.0057
8	344675	5224875	47.1610	-65.0492

**APPENDIX 4**  
**WORKING TEAM**

## WORKING TEAM

### Mandatory requirements:

1. The working team must be made up of at least five persons, including a project manager, a laboratory manager (microbiologist), a laboratory technician, a field technician and a field assistant.
2. The Field leader (field technician) must possess small vessel operator proficiency (SVOP), first aid certification, and the VHF radio restricted operator's certificate (maritime).
3. The Assistant technician must possess small vessel operator proficiency (SVOP), first aid certification, and the VHF radio restricted operator's certificate (maritime).
4. If a team member (project manager, biologist/microbiologist and/or laboratory technician or the assistant technician) other than the field leader (field technician) operates the boat, this person must also have small vessel operator proficiency and the VHF radio restricted operator's certificate (maritime).
5. If laboratory activities are subcontracted to another firm other than the contractor, the Working Team must be made up of at least the Project Manager, Field Leader and Assistant Technician.

The members of the team should have the following minimum qualifications.

- Project manager: university degree, recognized knowledge of biology, experience in supervising work teams, preferably with experience in the marine environment. Experience in coordinating and managing projects of comparable scope.
- Laboratory manager (microbiologist): recognized university degree in biology / microbiology and relevant practical experience in laboratory analysis, laboratory management and personnel supervision. Experience with ISO 17025 will be considered an asset.
- Laboratory technician: qualification in microbiology laboratory techniques or relevant experience in laboratory work. Experience with ISO 17025 will be considered an asset.
- Field leader (field technician): collegial diploma, experience in the marine environment, including boat handling and knowledge of safety and navigation measures applicable to small boats working at sea; experience in material and sampling management; experience in supervision of field teams.
- Assistant technician: experience of field work in the marine environment.

## **APPENDIX 5**

### **EC MARINE WATER QUALITY SAMPLING PROTOCOL**

## **1. Introduction:**

All water samples for bacteriological analyses are collected in sterile 250 mL wide-mouthed bottles (polypropylene or glass) at a depth approximately 20cm below the water surface. All water samples collected are held in an insulated cooler on ice or ice packs.

Prior to sampling, the receiving laboratory has been contacted at least 24 hours in advance to confirm sample delivery time and analysis within prescribed limits. All equipment and supplies are prepared prior to leaving. These include sample bottles, coolers, sampling rod, GPS, chart, sampling station maps with descriptions, field thermometer, pencils, markers, field book, and watch.

Sampling is carried out under various environmental conditions including adverse weather such as heavy periods of precipitation, dry conditions, and different tidal stages. Sampling stations are located through GPS or triangulation and/or using sampling station maps and descriptions. Hydrological conditions including surface water temperature and tidal cycle are recorded as well as meteorological conditions. During sample collection, all relevant information is recorded in a field book. This would include all the items listed in under 7. Sample Collection Information Recorded in Field Book below.

A temperature blank is used to determine the temperature at time of collection (measured in field) and at the time of delivery (measured by laboratory). All sample bottles are cleaned, rinsed with distilled water, sterilized and kept closed until utilised. All samples are identified with location and a sampling station number. After collection, sample is immediately placed in a clean cooler which is maintained between 0°C and 10°C. Samples are delivered to the approved laboratory within 6 hours of collection of the first sample. Samplers ensure that, prior to delivery to the laboratory, all sample bottles and field books are checked for complete and accurate information.

## **2. Safety Precautions:**

Field staff must undergo appropriate boating and vehicle safety training.

- 2.1 All microorganisms must be treated with caution and are to be considered hazardous. Aseptic technique is required. All samples/ sample containers not identified as “sterile” should be treated as potential hazards and may contain pathogenic microorganisms.
- 2.2 Eating and Drinking are PROHIBITED while sampling.
- 2.3 Technicians must handle samples with caution following the assumption that all samples are potential hazards.
- 2.4 Coolers must be disinfected before and after each use.
- 2.5 Technicians must wash hands effectively, as soon as possible, after handling the samples.

- 2.6 Open cuts/ sores must be bandaged to prevent accidental infection; these bandages should be changed frequently.

### **3. Apparatus:**

- 3.1 Insulated cooler with ice/ice packs
- 3.2 250ml wide-mouth sterile sample bottle (polypropylene or glass)
- 3.3 Sampling rod with thermometer or with stand alone armor-cased thermometer
- 3.4 Field log book
- 3.5 Sampling map
- 3.6 Watch with 24 hour format
- 3.7 Label Tape for Bottles
- 3.8 Pencils, Indelible waterproof felt pens
- 3.9 GPS, Compass
- 3.10 Applicable Personal Protective Equipment (PPE)

### **4. Interferences:**

- 4.1 Sample bottles must remain closed at all times (opened only just prior to use) to decrease probability of contamination. Occurrences of the cap becoming loosened or removed unintentionally will increase the chance of cross contamination of the sample and it will not be truly representative of natural environment. Caps should be held with open end facing down to reduce the risk of air contamination. All accidentally opened bottles should not be used, but returned to the lab for re-sterilisation. If lots of bottles are found to have numerous loose caps, the supervisor should be notified immediately and corrective action taken as soon as possible.
- 4.2 Sample bottles must be kept in an insulated cooler between 0<sup>0</sup>C and 10<sup>0</sup>C. If samples do not arrive at the laboratory between 0 and 10<sup>0</sup>C, the laboratory supervisor should be notified immediately. Corrective action such as continued holding on ice / ice packs or refrigeration may be employed if time permits, however explanations of non-conformances are to be recorded on the data sheets
- 4.3 Samples must be delivered to laboratory within 6 hours of collection of first sample to allow for 2 hours of processing. Samples outside this parameter are recorded on sample data sheets. No samples will be processed if beyond 24 hours after collection.
- 4.4 If sampling location is deemed inaccurate, another sample will be taken in appropriate location.

### **5. Procedure:**

- 5.1 Water Quality Sampling Protocol
  - 5.1.1 Prepare a clean, insulated cooler with an appropriate number of sterile, labelled, sample collection bottles and enough ice or ice packs suitable to maintain samples in the range of 0°C – 10°C.

- 5.1.2 In the field log book, record growing area identification, date of survey, sampler's names, current weather conditions (wind, air temperature, sun, % cloud cover), tidal state, and sample station numbers.
- 5.1.3 Navigate to sample station locations using the station map, station descriptions, and GPS / compass as required to ensure accuracy and consistency.
- 5.1.4 Upon reaching sample station, select a pre-labelled, sterile sample bottle. Insert bottle into the sampling rod and dip into seawater to rinse. Remove and hold bottle cap with open side facing down, ensuring that its interior does not contact any surface.
- 5.1.5 Plunge the sampling rod into undisturbed water up to the 20 cm mark. Allow several seconds to fill and withdraw sample. Pour off excess water to allow for an approximate 1 inch air space for subsequent agitation in the laboratory (Maintain a minimum of 200 ml sample size).
- 5.1.6 Replace the bottle cap aseptically ensuring that neither its interior, nor the bottle neck contacts any surface. Place bottle in cooler ensuring ice or ice packs do not contact bottle cap.
- 5.1.7 Observe temperature from integrated thermometer or, in the case of separate tank thermometer, plunge to a 20 cm depth, then observe.
- 5.1.8 In the field log book, record sample time, water temperature, and any other relevant observations such as presence of birds, boat / cabin activity, high flow rates, spills, or other possible pollution sources (See Appendix A).
- 5.1.9 Repeat steps 5.1.3 through 5.1.8 for all sample stations.
- 5.1.10 An extra sample is to be taken at the first sample station to serve as a temperature control for later laboratory use. Label as 'temperature control' or TC.
- 5.1.11 After completion of sampling run, transport all samples to the laboratory within a 6 hour time frame beginning with time of first sample. Ensure that adequate ice / ice packs are in place to keep temperatures between 0°C and 10°C.
- 5.1.12 Upon return to laboratory, transfer custody to laboratory staff and ensure that information from field log book is copied to the laboratory data collection sheet and on the Sample Log In Sheet. It is very important to remember to use aseptic technique to collect and process samples and to show accountability.

## **6. Acceptance Criteria and Corrective Actions:**

- 6.1 Temperature control must be within 0°C and 10°C. Discarding of samples depends on the temperature trend of the sample and if transport time was insufficient to cool samples to the accepted parameter (i.e. did temperature of sample decrease during transport). If samples are deemed out of compliance by the laboratory supervisor, they are discarded.
- 6.2 All non conformances must be reported to the lab supervisor immediately.

7. **Sample Collection Information Recorded in Field Book:**

- date of each survey
- growing area identification
- name of location or site
- state of tide
- station number
- time of each sample
- water temperature (at each station)
- water temperature blank
- precipitation in last 24 – 48 hours
- sun (% cloud cover)
- wind: direction and speed
- air temperature (optional)
- height of waves(optional)
- turbidity (optional)
- other potential pollution sources (birds, anchored vessels, marine mammals, etc.)
- sampler's names

## REFERENCES

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5.	Official Methods of Analysis of the Association of Official Analytical Chemists, 15th Edition, 1990.
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7.	Public Health Service, Public Health Report, Reprint #1621, 1947.
8.	Quality Assurance Principles for Analytical Laboratories, Association of Official Analytical Chemists, 1991.
9.	Recommended Procedures for the Examination of Sea Water and Shellfish, 4th Edition, American Public Health Association, 1970.
10.	Shellfish Sanitation Interpretation #SS-39, Interstate Shellfish Sanitation Conference, 1986.
11.	Standard Methods for the Examination of Water and Wastewater, APHA, 2005, 21 <sup>st</sup> Ed. Section 9221 E, 2
12.	Title 21, Code of Federal Regulations, Part 58, Good Laboratory Practice for Nonclinical Laboratory Study, Washington, D.C.
13.	Standard Methods for the Examination of Dairy Products, 16th Edition, APHA, 1992.

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**APPENDIX 6**

**EVALUATION REPORT OF WATER SAMPLE COLLECTION**

**Canadian Shellfish Sanitation Program (CSSP)**

**EVALUATION REPORT OF WATER SAMPLE COLLECTION**

**ENVIRONMENT CANADA  
SCIENCES & TECHNOLOGY BRANCH  
ATLANTIC REGION – MARINE WATER QUALITY MONITORING**

45 Alderney Dr.,  
Dartmouth, NS  
B2Y 2N6

**EVALUATION REPORT OF FIELD ACTIVITY**

CONTRACTOR:

\_\_\_\_\_  
\_\_\_\_\_

DATE OF EVALUATION :

\_\_\_\_\_

DATE OF REPORT :

\_\_\_\_\_

DATE OF PREVIOUS EVALUATION :

\_\_\_\_\_

REPRESENTATIVE CONTRACTORS / SAMPLING-FIELD ACTIVITY :

\_\_\_\_\_  
(name)

Field technician

\_\_\_\_\_  
(title)

\_\_\_\_\_  
(name)

Field assistant

\_\_\_\_\_  
(title)

REPRESENTATIVE OF ENVIRONMENT CANADA :

\_\_\_\_\_  
(name)

Coordinator

\_\_\_\_\_  
(title)

A copy of the checklist has been sent to the  
Field technician before the visit.

YES

☐

NO

☐

## SUMMARY OF THE FIELD ACTIVITY EVALUATION

Visited sectors :

Schedule :

General  
comments :

<u>DEFICIENCIES</u>			<u>RECOMMENDATIONS</u>		
-			-		
-			-		
-			-		

### CHECKLIST – SAMPLING METHOD

#	Category		Items	Conform	Deficiencies	Recommendations	Comments
1	General equipment						
		a.	Sample bottles				
		b.	Sampling rod				
3	Stations positioning						
		a.	Method – GPS and visual reference point				
4	Sampling method						
		a.	Method				
		b.	Bottle identification				
		c.	Water temperature control at onset of run				
		d.	Water temperature taken at each sample				
5	Sample transportation						
		a.	Do not exceed 6 hours (from time of first sample)				
		b.	Coolers (enough ice or ice packs) / Water TC at lab $\leq 10^{\circ}\text{C}$				
6	Log book						
		a.	date / hour of beginning and ending of sampling				

		b.	number of the area, sector, subsector and station						
		c.	Hydrological conditions						
			Time of the high tide						
			Tidal phase						
			Water temperature						
			Water depth						
			Salinity						
		d.	Meteorological conditions						
			Rainfall						
			Cloud cover %						
			Wind : direction + speed (beginning/ending)						
			Air temperature (beginning/ending)						
			Wave height						
			Sea Condition						
7	Training								
		a.	Pleasure Craft Operator Card						
		b.	Restricted Operator's Certificate (Maritime)						
		c.	Marine Emergencies Duties						
		d.	Standard First Aid (offshore, working area and CPR)						

