

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving - PWGSC / Réception des soumissions -
TPSGC
11 Laurier St. / 11, rue Laurier
Place du Portage, Phase III
Core 0A1 / Noyau 0A1
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Ship Refits and Conversions / Radoubss et
modifications de navires and / et
11 Laurier St. / 11, rue Laurier
6C2, Place du Portage
Gatineau, Québec K1A 0S5

Title - Sujet DRYDOCKING-ICEBREAKER CCGS AMUNDSEN		
Solicitation No. - N° de l'invitation F7047-120068/A		Amendment No. - N° modif. 002
Client Reference No. - N° de référence du client F7047-120068		Date 2012-07-31
GETS Reference No. - N° de référence de SEAG PW-\$\$MD-018-22936		
File No. - N° de dossier 018md.F7047-120068	CCC No./N° CCC - FMS No./N° VME	
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-08-21		Time Zone Fuseau horaire Eastern Daylight Saving Time EDT
F.O.B. - F.A.B.		
Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>		
Address Enquiries to: - Adresser toutes questions à: Vandal, Paul		Buyer Id - Id de l'acheteur 018md
Telephone No. - N° de téléphone (819) 956-0645 ()		FAX No. - N° de FAX (819) 956-0897
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:		

Instructions: See Herein

Instructions: Voir aux présentes

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

Solicitation No. - N° de l'invitation

F7047-120068/A

Client Ref. No. - N° de réf. du client

F7047-120068

Amd. No. - N° de la modif.

002

File No. - N° du dossier

018mdF7047-120068

Buyer ID - Id de l'acheteur

018md

CCC No./N° CCC - FMS No/ N° VME

AMENDMENT # 2

Delete:

Closing Date:

August 7, 2012 @ 2:00 PM Eastern Daylight Saving Time EDT

Insert:

Closing Date:

August 21, 2012 @ 2:00 PM Eastern Daylight Saving Time EDT

**CCGS AMUNDSEN
PWGSC FILE No. F7047-120068/A
BIDDER'S CONFERENCE
RECORD OF DISCUSSION**

A Bidder's Conference for the repair of CCGS Amundsen was held on Wednesday July 18, 2012 in Officer's mess onboard CCGS AMUNDSEN moored at Section 25, Quebec, Quebec. The Conference started at 10:00 AM

1) OPENING REMARKS

The Chairperson welcomed all attendees and thanked the bidders in attendance for their interest in this project.

The Chairperson explained that this meeting was aimed at reviewing the Invitation to Tender document bearing serial number F7047-120068/A in order to clarify any point brought up by any participant.

The Chairperson introduced himself and stated he would be acting as the Contracting Authority during the project. He then asked the persons in attendance to introduce themselves.

In attendance were:

NAME		COMPANY	REPRESENTING
Kris Baglole	Assistant Estimating Manager	Irving Shipbuilding	Baglole.Kris@halifaxshipyard.com
John Salvage	Estimating Manager	Irving Shipbuilding	Salvage.John@halifaxshipyard.com
Russ Edmunds	Estimator	Port Weller SMI	Russ.Edmunds@Algonet.com
Mike Somers	Electrical	Port Weller SMI	Elecdept@algonet.com
John Burnett	Engineering Estimating	SMI	
Bill Mart	Estimating	SMI	
Jean Lemieux	Account Manager	Siemens	Jean.Lemieux@siemens.com
Charles Payne	Director of Orientation	SMI	cpayne@seamind.ca
Serge Desrosiers	Director of Production	Verreault	Serge.desrosiers@groupeverreault.com
Michel Gratton	Estimation	Verreault	Michel.gratton@groupeverreault.com

Michael Gagnon	Superintendant Acier	Verreault	Michael.gagnon@groupeverreault.com
Jacques Belanger	Agent Projects	Canadian Coast Guard	Jacques.belanger@dfo.mpo.gc.ca
Vincent Grondin	Chief Mechanic	CCG	Vincent.grondin@dfo.mpo.gc.ca
Martin Tardif	Project Manager	CCG	Martin.Tardif@dfo.mpo.gc.ca
Thomas Mainville	Senior Mechanic	CCG	Thomas.Mainville@sympatico.ca
Don Allen	Business Development	Canal Marine	Don.allen@canal.ca
Terry Ramsay	Electrical	John Duffy Electrician	Duffyelectrical@sympatico.ca
Paul Vandal	Contracting Authority	PWGSC	Paul.vandal@pwgsc.gc.ca

2) DOCUMENTATION TO BIDDERS

Question: Some drawings are not readable?

Answer: All drawings attached with the ITT on MERX are readable.

Note: Additional drawings will be provided with this Record of Discussion.

3) REVIEW OF THE INVITATION TO TENDER PART ONE TERMS AND CONDITIONS (Chaired by Contracting Authority)

PART 1 – GENERAL INFORMATION

No Comment

PART 2 - BIDDER INSTRUCTION

No Comment

PART 3 – BID PREPARATION INSTRUCTION

No Comment

PART 4 – EVALUATION PROCEDURES AND BASIS OF SELECTION

No Comment

PART 5 – CERTIFICATIONS

No Comment

PART 6 – FINANCIAL AND OTHER REQUIREMENT

No Comment

PART 7 - RESULTING CONTRACT CLAUSES

7.9 Priority of Documents

Question: Please provide E-mail address for access to 7.9 (b) the Supplemental General Conditions 1029, (2010-08-16), Ship Repairs;

Answer:

(<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>)

List of Annexes:

**ANNEX A
Technical Specification**

**See REVIEW OF THE INVITATION TO TENDER
PART TWO - CCGS Griffon Specification No. 697.11 rev. 1
(Chaired by Technical Authority)**

**ANNEX B
BASIS OF PAYMENT PRICE
No Comment**

**ANNEX C
INSURANCE REQUIREMENTS
No Comment**

**ANNEX D
WARRANTY
No Comment**

**ANNEX E
PROCEDURE FOR PROCESSING UNSCHEDULED WORK
No Comment**

**ANNEX F
QUALITY CONTROL/INSPECTION
No Comment**

**ANNEX G
FINANCIAL BID PRESENTATION SHEET
No Comment**

**ANNEX H
VESSEL CUSTODY/ACCEPTANCE CERTIFICATE
No Comment**

**ANNEX I
DELIVERABLES/CERTIFICATIONS
No Comment**

**REVIEW OF THE INVITATION TO TENDER
PART TWO - CCGS Amundsen Specification dated June 13, 2012
(Chaired by Technical Authority)**

H.D.-1 DRY DOCKING, BLOCKING AND REFLOATING

1.3 The vessel shall be delivered to the Contractor's facility and from this point on, the Contractor shall be responsible for entering and leaving dry dock using tug boats or other equipment

Question: Will the vessel delivery be alongside the Contractor Facilities?

Answer: Yes

1.5 The Contractor shall ensure that keel block positioning is consistent with the latest revised docking plan. Laser alignment shall be used for setting block height. The Contractor shall submit a report of the block alignment readings to the Representative(s) of Canada.

Question: The block positioning tolerances ($\frac{1}{4}$ " on top softwood) is this acceptable?

Answer: Yes

Question: Does the block preparation need to take in consideration the "Azimuth"?

Answer: No

1.10 The Contractor shall provide onboard services of four (4) labourers and a supervisor for the duration of the trials.

Clarification: Should Read

1.10 The Contractor shall provide onboard services of **two (2) qualified electricians, two (2) qualified mechanics** and a supervisor for the duration of the trials.

1.11 For inspection purposes, all underwater hull surfaces and appendages including, the rudder, rudder trunk, bow thruster tunnel, sea suction inlets, sea bays, and sea wells shall be cleaned of all loose scale, salts, and marine growth. All surfaces shall be cleaned within twenty-four hours of dry-docking using a fresh water pressure wash (3000 to 5000 psi).

Question: What is the total of the underwater hull surfaces and appendages including, the rudder, rudder trunk, bow thruster tunnel, sea suction inlets, sea bays, and sea wells that need to be cleaned?

Answer: 2820 M²

H.D.- 2 SERVICES

2.3 Supply and connect two (2) telephone lines. One (1) line to the Chief Engineer, and the other to the wheelhouse (existing system). A third line shall be installed in the CCG representative's quarters.

Question: Will CCG accept, supply cellular phone instead of supply and connect telephones lines?

Answer: Yes

2.14 Supply portable tanks or tanks that may be pumped for sewage disposal. The Contractor shall be held responsible for disposal of sewage waters. Related costs are to be included in this item.

Question: Please provide quantity per day for disposal of sewage waters.

Answer:

Gray Water -	250 Litres/day
Black Water –	100 Litres/day

2.15 In order to protect accommodation alleyways from dirt, supply and install 1/16" thick cardboard throughout entire passageways on main, upper, flight and boat, navigation officers and navigation bridge decks, wheelhouse. The area to be covered is 585 m².

Question: Does the 585 m2 include stairways, machinery control room, Chief Engineer's office (cabin 405), boat deck washroom (room 409), engineers' office (room 530), offices for the representatives of Canada and Science (cabins 404, 401 and 403), main deck passageway from the deck entry to the forward engine room entry, laundry room deck and main deck after section from the propulsion motor room port entry to the steering gear compartment.

Answer: Yes

2.19 The Contractor shall hold custody and responsibility for the ship.

Clarification: Should Read

2.19 The Contractor shall hold custody and responsibility for the ship **only**.

H.D.- 3 INSPECTION AND ADDITIONAL WORK

3.3 Inspection of any item by the representative of Canada does not substitute for any required inspection by TCMS.

Question: Will the Inspection Authority be PWGSC I.A.

Answer: No, The Inspection Authority will be CCG I.A.

3.4 Contractor is responsible for calling in the TCMS Surveyors, when and as necessary, in connection with survey items.

Question: Will Canada accept a provision for TCMS costs?

Answer: No, all costs associated with TCMS must be included in the quotation.

3.6 The Contractor shall submit to the representative of Canada all requested drawings in latest version AutoCAD and PDF formats.

Question: Do you mean that all requested drawings are for the refit only?

Answer: Yes

3.10 The Contractor shall comply with the Canada Labour Code.

Question: Will Canada accept the Ontario Labour Code for Health and Safety?

Answer: Yes

HD – 4 STAGING AND CRANES

No Comment

H.D.- 5 KEEL BLOCKS

No Comment

H.D.- 6 FRAME NUMBERING

No Comment

H.D.- 7 GRIDS, SEA CHESTS AND SEA BAYS

7.4 The moon pool lower door openings, the azimuth thrusters and surrounding plating shall be protected against contamination and damage during surface preparation and recoating procedures. The protection shall be removed prior to launching.

Question: What is the minimum type of protection acceptable?

Answer: As per Specification it has to be to Chief Engineer's satisfaction.

H.D.- 8 CATHELCO ANODES

No Comment

H.D.- 9 HULL CLEANING AND PAINTING

9.7 An estimate of the total surface area to be coated can be determined by referring to drawings NT2434-12-502 A

Question: Is the area only in the way of the ship access opening?

Answer: Yes

H.D.- 10 FREEBOARD, DRAFT MARKS AND IDENTITY PROGRAM MARKING

No Comment

H.D.-11 COFFERDAMS AND VOID SPACES

No Comment

H.D.-12 BALLAST TANKS

12.2 The Contractor shall perform a hydrostatic test on all tanks in this item in accordance with the Canada Shipping Act 2001 Hull Inspection Regulations and in consultation with the attending TCMS Surveyor.

Question: Will Canada accept air test.

Answer: Yes, if TCMS accepts air test.

H.D.- 13 DIESEL FUEL, HELICOPTER FUEL OIL AND OILY-WATER STORAGE TANKS

13.6 The total residual fuel remaining in the storage tanks following pump-out operations shall be approximately 30 tonnes.

Question: Does the total of 30 tonnes cover all tanks listed in 13.19?

Answer: Yes

Note: Please provide separately a Unit Rate/Ton for pumping and disposal of residual fuel.

13.12 The Contractor shall perform a hydrostatic test on all tanks in this item in accordance with the Canada Shipping Act 2001 Hull Inspection Regulations and in consultation with the attending TCMS Surveyor.

Question: Does Canada accept?

Answer: Yes, if TCMS accepts.

H.D.-14 FRESH AND POTABLE WATER TANKS

14.7 The contractor shall quote on removal and disposal of 200 Litres of water and contaminants.

Clarification:

Please provide separately a Unit Rate/Litre for Removal and Disposal.

14.9 The Contractor shall prepare damaged area, supply and apply two coats of International Marine Coatings "INTERLINE 925" on all cracks and paint defects in all fresh water tanks.

Question: What is the total area required?

Answer: 150 sq. ft.

Note:

Please provide separately Unit Rate/Sq.Ft. for preparation, supply and application of two coats.

14.18 Prior to the close of contract, the Contractor shall acquire the services of Health Canada for a 28 point water quality testing on the vessel's potable water system.

Question: Will Canada provide the list of 28 point water quality testing?

Answer: Yes, see attachment

14.16 Following the tank testing process, the potable water tanks shall be rinsed with clean fresh water and disinfected in accordance with procedure 3.5.2 of section 7.F.12 of the CCG Fleet Safety and Security Manual.

Question: Is super chlorination acceptable?

Answer: Yes

H.D.-15 POTABLE WATER TANK PIPING RECONFIGURATION

Question: The pipe diameter is not indicated.

Answer: See attachment.

H.D.-16 PREPARATION FOR THE HULL CONDITION SURVEY

Clarification:

Delete Para. 16.11, 16.12 and 16.13.

16.8 The Contractor shall provide a cost per hull ultrasound and a cost for a total of 1500 ultrasounds. The delta between the estimated total of ultrasounds and the actual final number of hull ultrasounds shall be prorated and processed separately as unknown work.

Clarification:

Cost per hull ultrasound and cost for 1500 ultrasound must include paint repair in way of spots. (As per original coating)

16.9 Contractor shall make every effort to co-ordinate the Hull Structural survey requirements of this Section with the Transport Canada Marine Safety regulatory survey requirements for the vessel to avoid duplication of work, specifically for hull ultrasound readings and tank surveys.

Clarification:

Delete: Transport Canada Marine Safety regulatory

Insert: Classification Society

H.D.-17 HULL CONDITION SURVEY BY CLASSIFICATION SOCIETY

17.3.2 Developing the documentation

3.2.6 Classification Society shall develop a narrative description of the required remediation work and a time line for when each work package will be required to maintain vessel reliability, certification and safe operation. As part of the docking contract, Canadian Coast Guard will arrange thickness measurements for all relevant structural members in accordance with Class\Regulatory requirements for a vessel of this age. Classification Society shall recommend UTM requirements for a vessel of this age.

Clarification:

Delete: Canadian Coast Guard will arrange thickness ...

Insert: Contractor will arrange thickness ...

17.4.2 Project Schedule – The contactor shall provide a project schedule with its proposal and after award of the contact bi-weekly updates of the schedule showing progress. This schedule shall include all work associated with the contact including all on ship survey requirements. Schedule shall be provided electronic format compatible with Microsoft project 2007 or later.

Clarification:

Project Schedule will be integrated in Contractor Master Schedule.

H.D.18 - P1 REPLACEMENT OF FIVE (5) PROPULSION DIESEL ENGINES (DP)

1.1.1 Para 2 -

For each opening, two (2) cuts will be needed (the ship's hull and the two (2) fuel oil wing tanks inboard sheets). The plates removed in the cutting process will be kept and stored in a dry, safe place and will be reinstalled upon completion of engines replacement works.

Clarification:

Delete: stored in a dry, ...

Insert: stored in a covered,...

1.1.2 Four (4) fuel oil tanks will be drained, cleaned and gas-freed. A hot work certificate will be issued by an approved specialist and presented to the satisfaction of Canada. The certificate will be kept valid during the hot work duration. A certificate copy will be installed at each tank entrance.

Question: Are the four (4) fuel oil tank included in HD-13?

Answer: Yes

1.1.3 The five (5) new assembled engines will be delivered to the shipyard. Partial disassembly will be made by the manufacturer of the Engines;

Question: What are the delivery dates of the five (5) engines?

Answer:

Engine Delivery as follows:

2 in October 2012

2 in December 2012

1 in January 2013

Delete 1.1.3 All components to be removed from engines will be carefully marked and identified before their removal.

Insert 1.1.3 All components to be removed from engines will be carefully marked **by CCG** and identified before their removal.

Delete 1.1.3 The engine base used during transport (to be ship back to the engine manufacturer)

Insert 1.1.3 The engine **shipping** base used during transport (to be **shipped with old engine** back to the engine manufacturer). This will be at Fairbank Morse Engine (FME) cost.

1.1.5 The dismantling and removal of some components (piping, electrical cables, insulation material, various brackets and supports, bolted H-Beams and air ducts) will be necessary, to allow the installation of anchor points and lifting systems for engines manoeuvring during the replacement process using. Refer to the Navtech dwg NT-2434-12-DE503 (A&B)

Clarification:

All engine components will be removed by CCG. All other components (piping, electrical cables, insulation material, various brackets and supports, bolted H-Beams and air ducts) will be removed by Contractor.

1.1.7 The five (5) engines removed from the ship will be stored in a safe, dry and weather resistant place. They will then be prepared for shipping.

Question: What type of protection does the existing engines have?

Answer: Contractor shall protect the engines with shrink-wrap.

1.1.8 The ship will arrive at the dry dock with the engine room bilges freshly cleaned. The contractor will maintain the E/R bilges cleanliness at all times during the whole working period. Once the works are completed, the contractor will assure that the E/R bilges are as clean as they were before the beginning of works.

Question: What level of cleaning is requested?

Answer: Safe for Hot work.

1.1.9 All the works concerning the five (5) D/P will be executed under the OEM engine representative supervision and the Canada representatives.

Question: Will CCG cover the costs for FSR assistance for reassembly, engine installation and tests?

Answer: FSR assistance costs will be covered by CCG.

1.1.10 After the 5 engines blocks has been removed from the vessel and prior to the new engine being fitted, the contractor shall thoroughly wash and clean the engine base. The base screens are to be removed and thoroughly cleaned. The bases shall be correctly protected against dust, contaminants, sparks and particles. A complete protection board will be installed over each D/P and S/S, covering their entire upper surface, using 3/4" plywood sheets. Lube oil lines are to be flushed and cleaned.

Question: What is the flushing oil type?

Answer: Esso IO LUB MDF 40

1.1.15 Other measurements

S/S#1: Height, sump bottom to cylinder block top: 59"

S/S#1: Height overall from sump bottom to valve covers top: 84".

D/Ps: Height overall of a naked cylinder block: 36-1/4"

D/Ps: Height overall from crankshaft to cylinder block top: 48-1/4"

D/Ps: Height overall from crankshaft to cylinder head covers : 64-1/4"

Width overall: (assembled S/S#1 and D/Ps): 65"

Width overall without fuel pump supports: 58-1/2"

Width overall, without fuel pump supports, cylinder head covers, push rods and rocker arms: 56-1/4"

Question: What is the length of the engines and generators?

Answer:

Engines – 162"

Ship Service Generators - - 88"

1.2 FORWARD ENGINE ROOM

1.2.3 Remove electrical cables, junction, control and starter boxes that are in the way of the projected opening (see 1.2.2). Remove mesh and insulation material covering the inboard sheet of the fuel oil wing tank. Remove the priming system, the general service pump, piping and valves. Remove the bilge pump piping and valves. Various piping sections that are in the way of the opening will have been removed by the CCG crew between S/S#1 and the fuel oil wing tank. These pipe sections will be reinstalled by the shipyard under the CCG supervision.

Question: What does inboard sheet of the fuel oil wing tank mean?

Answer: Inboard sheet of the fuel oil wing tank means the tank bulkhead.

Question: Does remove insulation mean including asbestos insulation?

Answer: Remove insulation means no asbestos insulation.

Clarification:

Replace fastening (bolts, nuts, washers) for exhaust pipe with L-9 Hex, Capscrew 1¼ - 7 x 3 – 132 and L-9 1¼ - 7 Nut.

1.2.5 Remove engine room flooring plates and brackets between FR102 and FR115, starting from the starboard shipside to the outboard side of the D/P#2 engine bed. Remove all piping, electrical cables and various brackets and supports between the tank top and the flooring plates. Everything that is higher than the tank top will be removed to clear the way for the opening in the area mentioned above. Remove all components to allow the lifting system installation (see 1.1.5)

Question: Will CCG provide piping arrangement?

Answer: See attached Drawings for piping arrangement.

1.3 AFT ENGINE ROOM

1.3.2 Components to be removed, then reinstalled after the D/P #3,4, and 6 replacement:

-The D/P#3 prelube pump and the preheat pump, including their support structure (the two (2) pumps will be already removed by the CCG crew).

-All piping, electrical cables, various brackets and supports, flooring that are located between S/S#2 bed and port side hull, between the tank top and the floor plates to clear the engine moving path.

-Mesh and insulation material on the inboard aft fuel oil wing tank sheet.

-All piping, brackets and supports, air ducts, bolted H-beams to allow the lifting system installation according to the Dwg # NT-2434-12-DE502A.

Question: Will Engine #5 components be removed by CCG for access?

Answer: Yes

1.4 ALIGNMENT AND BEDS

1.4.1 The Diesel engines of the D/P #1, #2, #3, #4, #6 and S/S#1, 2 and 3 will have to be uncoupled from their alternator.

Before uncoupling, measurements must be taken for each engine-to-alternator-alignment, including a complete crankshaft deflections measurement. The measured values will then be noted in the measurements booklet.

Question: Will the crankshaft deflections measurements be taken afloat?

Answer: Yes, before and after dry docking.

1.5 EXHAUST PIPING INSULATION REPLACEMENT

Question: What is the exhaust flange gasket type?

Answer: 1000 F wire inserted reinforced x 1/8" thick.

1.6.7 Ship afloat and docked

The lube oil filtering elements of the five (5) D/P engines will be replaced and duplex strainers cleaned. The CCG will supply the filtering elements. All of the pre-heat, pre-lube, control, alarm and monitoring systems will be started and checked. Any leak or abnormal condition will be immediately repaired. All five (5) engines will then be started. All alarms, electrical and mechanical protection systems will be tested. Required adjustments and repairs will be immediately processed.

Question: Will CCG assist contractor for tests?

Answer: Yes

1.6.9 The D/P #1-2-3-4-6 will then be load tested following the manufacturer's procedures. To do so, various components will be temporarily removed / dismantled.

A complete load test report will be presented to the satisfaction of Canada and TCSMB representatives. A working test will be carried on the general service and bilge pumps to the above-mentioned representatives' entire satisfaction.

Question: Will the load tests require "Load Banks"?

Answer: No.

1.6.11 Once the sea trials completed, an oil sample will be taken from each engine (sampling bottles supplied by the CCG). The oil sample result report will be presented to the CCG representative no longer than 48 hours after the oil sampling. The oil filtering elements and duplex strainer baskets of the six (6) engines will be removed, inspected and replaced. The CCG will supply the new filtering elements.

Question: Who will do the oil sample fore each engine?

Answer: Caterpillar.

H.D.S1 REPLACEMENT OF THREE (3) SHIP SERVICE DIESEL GENERATORS SETS (SS)

1.6 CONNECTION OF THE GENERATOR SETS TO THE SHIP'S SYSTEM (POWER, PROTECTION ALARM, ETC.)

Clarification:

Delete: all paragraphs except 1.6.3 and 1.6.6.

Clarification – Delete the following in its entirety

1.2.10 If each new generator set will be delivered with an expansion tank they shall be installed by shipyard personnel at the location indicated by the CCG representative

1.7.2.1 Four (4) hours at full electric charge (100%) with the required voltage, frequency and power factor will be necessary. During this period, take and record the following readings at one (1) hour intervals:

Question: Will the load tests require “Load Banks”?

Answer: No.

1.5.1 The new S/S diesel generator sets will be installed at the same place as the existing S/S generator sets. The shipyard will supply necessary labour and material to build and install the new S/S generator set exhaust piping and to connect it to the existing exhaust piping, as indicated on the drawings provided by the CCG. An expansion joint must be supplied and installed between the new exhaust piping and each new S/S generator set.

Clarification: Should Read

An expansion joint **must be CCG supplied** and installed between the new exhaust piping and each new S/S generator set.

Answer:

1.5.5 Vibration tests will be carried out after installation of the new S/S generator sets, during load and non-load testing. Sensors must be installed and vibration readings recorded in the report to be submitted by the shipyard.

Question: What is the vibration test required?

Answer: See Attachment.

4) CLOSING COMMENTS

Ref: Annex “H” – Vessel Custody

Question: When will the vessel be returned to Canada?

Answer: Tentatively 2 to 3 weeks prior to Sea Trials.

Being there is no other subjects to be discussed, the meeting was adjourned at 4.15 PM.

Paul Vandal
Contracting Authority
PWGSC

**CCGS AMUNDSEN
BIDDERS QUESTIONS AND ANSWERS**

Question 1

Will the Crown please extend the bid closing date to 21 August 2012 ?

Question 1

Yes

Question 2

Can the Crown please provide a copy of the manual for the ALCO propulsion engines to be used for guidance when pricing the strip down of the engines ?

Answer 2

No manual available.

Question 3

Para 1.2.5 on page 57 of the English specification requires “ Remove all piping, electrical cables and various brackets and supports between the tank top and the flooring plates. Everything that is higher than the tank top will be removed “

The area specified was not accessible for viewing at the time of vessel viewing.

Can the Crown please provide as fitted drawings of the floor plates and all items below the floor plates ?

Answer 3

See attachments.

Question 4

Para 1.3.2 on page 59 of the English specification requires “ Removal.....All piping, electrical cables, various brackets and support, flooring that are located between S/S #2 Bed and the port hull.....”

The area specified was not accessible for viewing at the time of vessel viewing.

Can the Crown please provide as fitted drawings of the floor plates and all items below the floor plates ?

Answer 4

See attachments.



Au service du
GOUVERNEMENT,
au service des
CANADIENS.

Rapport 1 – NGCC Amundsen

Suivi de la qualité de l'eau potable – 2012-13

REF: HD-14



PRÉPARÉ POUR :
Pêches et Océans Canada
Garde côtière canadienne
101, Boul. Champlain
Québec, Qc.
G1K 7Y7

PRÉPARÉ PAR :
Programme de suivi de la qualité de l'eau potable
Services environnementaux
Travaux publics et Services gouvernementaux Canada
1550 avenue D'Estimauville
Québec, Qc.
G1J 0C7

Juillet 2012

Contexte

Dans le cadre de l'entente de service concernant l'évaluation de la qualité de l'eau potable à bord des navires de la Garde-côtière Canadienne, des échantillons d'eau ont été prélevés à bord du NGCC Amundsen par Marielle Fortin, coordonnatrice en environnement, en date du 28 juin 2012.

Vous trouverez ci-joint les rapports d'analyses physico-chimiques et bactériologiques émis par notre laboratoire.

Cette évaluation a été effectuée conformément au protocole que vous nous avez soumis et les résultats ont été analysés en fonction des critères cités dans le «Résumé des recommandations pour la qualité de l'eau potable au Canada», Santé Canada, décembre 2010. Ce résumé est affiché sur le site web de Santé Canada:

http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2010-sum_guide-res_recom/index-fra.php

Protocole d'échantillonnage

L'eau est échantillonnée trimestriellement.

Une fois par année, l'eau est évaluée selon les 28 paramètres suivants :

- | | | |
|---------------------|-------------------|------------------------------|
| - Coliformes totaux | - Plomb | - pH |
| - Coliformes fécaux | - Manganèse | - Sulfates |
| - Antimoine | - Mercure | - Matières dissoutes totales |
| - Baryum | - Sélénium | - Turbidité |
| - Bore | - Sodium | - Benzène |
| - Cadmium | - Uranium | - Éthylbenzène |
| - Chrome | - Zinc | - Toluène |
| - Cuivre | - Chlorure | - Xylène |
| - Fluorure | - Couleur | |
| - Fer | - Nitrate-nitrite | |

Trois fois par année, l'eau est évaluée selon les 5 paramètres suivants :

- Coliformes totaux
- Coliformes fécaux
- Matières dissoutes totales
- pH
- Fer

Les échantillons prélevés le 28 juin 2012 furent les suivants:

Sites d'échantillonnage	5 paramètres	28 paramètres
Évier de la cuisine	-	√
Abreuvoir (pont de navigation)	-	√

Résultats bactériologiques

Tous les résultats bactériologiques étaient satisfaisants au moment de l'échantillonnage.

Résultats physico-chimiques

Tous les résultats physico-chimiques étaient satisfaisants au moment de l'échantillonnage.

Conclusion

Les analyses effectuées sur les échantillons prélevés le 28 juin 2012 ont démontré une qualité bactériologique et physico-chimique satisfaisante.

Espérant que le tout sera à votre convenance, nous vous prions de recevoir l'expression de nos meilleurs sentiments.



Coordonnatrice en environnement
Travaux publics et services gouvernementaux Canada
Tél.: (418) 649-2864
Adresse électronique: marielle.fortin@tpsgc.gc.ca

p.j. Rapports d'analyses bactériologiques et physico-chimiques

Attention: NANCY DYKE

Travaux publics et Services Gouvernementaux Canada(TPSGC)
 800, rue de la Gauchetière O.
 Bur. 7300 Portail Sud-Est
 Montréal, PQ
 CANADA H5A 1L6

Votre # de commande: 700212388
 Votre # du projet: EP GARDE COTIERE
 Adresse du site: NGCC-AMUNDSEN

Date du rapport: 2012/07/04

CERTIFICAT D'ANALYSES

DE DOSSIER MAXXAM: B233044

Reçu: 2012/06/28, 10:30

Matrice: EAU POTABLE
 Nombre d'échantillons reçus: 2

Analyses	Quantité	Date de l' extraction	Date Analyisé	Méthode de laboratoire	Référence primaire
Anions	2	N/A	2012/06/29	QUE SOP-00141	MA. 300 - Ions 1.2
Bactéries atypiques	2	2012/06/28	2012/06/28	QUE SOP-00304	MA 700-COL 1.0
Benzène, toluène, éthylbenzène, xylène	2	N/A	2012/06/29	QUE SOP-00202	MA. 403 - COV 1.1.
Chlore résiduel libre	2	N/A	2012/06/28		
Couleur vraie	2	N/A	2012/06/28	QUE SOP-00115	MA. 103 - Col. 2.0
Coliformes totaux et fécaux sur géloseDC	2	2012/06/28	2012/06/28	QUE SOP-00307	n/a
Fluorures	2	N/A	2012/06/28	QUE SOP-00142	SM 4500-F- C
Mercure par ICP-MS	2	2012/06/29	2012/06/29	QUE SOP-00132	MA. 200 - Mét 1.2
Métaux par ICP-MS	2	2012/06/29	2012/06/29	QUE SOP-00132	MA. 200 - Mét. 1.2
pH	2	N/A	2012/06/28	QUE SOP-00142	MA.303 -TitrAuto 1.1
Solides totaux dissous	2	2012/06/29	2012/06/29	QUE SOP-00119	MA. 103 - S.T. 1.0
Turbidité	2	N/A	2012/06/28	QUE SOP-00118	MA.103-TUR. 1.0
Uranium par ICP-MS	2	2012/06/29	2012/06/29	QUE SOP-00132	MA. 200 - Mét. 1.2

clé de cryptage

Veillez adresser toute question concernant ce certificat d'analyse à votre chargé(e) de projets

Alain Lemieux, Chargé de projets
 Email: ALemieux@maxxam.ca
 Phone# (418) 658-5784 Ext:251

Maxxam a mis en place des procédures qui protègent contre l'utilisation non autorisée de la signature électronique et emploie les "signataires" requis, conformément à la section 5.10.2 de la norme ISO/CEI 17025:2005(E). Veuillez vous référer à la page des signatures de validation pour obtenir les détails des validations pour chaque division.

Dossier Maxxam: B233044
Date du rapport: 2012/07/04

Travaux publics et Services Gouvernementaux Canada (TPSGC)
Votre # du projet: EP GARDE COTIERE
Adresse du site: NGCC-AMUNDSEN
Votre # de commande: 700212388
Initiales du préleveur: MF

BTEX PAR GC/MS (EAU POTABLE)

Identification Maxxam		R40765	R40982		
Date d'échantillonnage		2012/06/28 09:42	2012/06/28 09:53		
	Unités de	#1 CUISINE T-2	#2 PONT NAVIGATION T-2 - BUVETTE (PORTE 204)	LDR	Lot CQ

VOLATILS					
Benzène	ug/L	<0.2	<0.2	0.2	1022674
Toluène	ug/L	0.3	<0.1	0.1	1022674
Ethylbenzène	ug/L	1.7	0.6	0.1	1022674
Xylènes totaux	ug/L	12	4.3	0.4	1022674
Récupération des Surrogates (%)					
4-Bromofluorobenzène	%	97	95		1022674
D4-1,2-Dichloroéthane	%	106	108		1022674
D8-Toluène	%	107	105		1022674

LDR = Limite de détection rapportée

Dossier Maxxam: B233044
Date du rapport: 2012/07/04

Travaux publics et Services Gouvernementaux Canada(TPSGC)
Votre # du projet: EP GARDE COTIERE
Adresse du site: NGCC-AMUNDSEN
Votre # de commande: 700212388
Initiales du préleveur: MF

MÉTAUX (EAU POTABLE)

Identification Maxxam		R40765	R40982		
Date d'échantillonnage		2012/06/28 09:42	2012/06/28 09:53		
	Unités de	#1 CUISINE T-2	#2 PONT NAVIGATION T-2 - BUVETTE (PORTE 204)	LDR	Lot CQ

MÉTAUX					
Antimoine (Sb)	mg/L	<0.0030	<0.0030	0.0030	1022750
Cuivre (Cu)	mg/L	0.092	1.5	0.0030	1022750
Fer (Fe)	mg/L	0.14	0.15	0.10	1022750
Manganèse (Mn)	mg/L	0.0051	0.0048	0.0030	1022750
Mercuré (Hg)	mg/L	<0.00010	<0.00010	0.00010	1022750
Sodium (Na)	mg/L	26	25	0.20	1022750
Uranium (U)	mg/L	<0.0020	<0.0020	0.0020	1022750
Zinc (Zn)	mg/L	0.046	0.058	0.0050	1022750
Baryum (Ba)	mg/L	0.028	0.026	0.020	1022750
Bore (B)	mg/L	<0.050	<0.050	0.050	1022750
Cadmium (Cd)	mg/L	<0.0020	<0.0020	0.0020	1022750
Chrome (Cr)	mg/L	<0.0050	<0.0050	0.0050	1022750
Plomb (Pb)	mg/L	<0.0010	0.0020	0.0010	1022750
Sélénium (Se)	mg/L	<0.0010	<0.0010	0.0010	1022750
LDR = Limite de détection rapportée					

Dossier Maxxam: B233044
Date du rapport: 2012/07/04

Travaux publics et Services Gouvernementaux Canada(TPSGC)
Votre # du projet: EP GARDE COTIERE
Adresse du site: NGCC-AMUNDSEN
Votre # de commande: 700212388
Initiales du préleveur: MF

PARAMÈTRES CONVENTIONNELS (EAU POTABLE)

Identification Maxxam		R40765	R40765	R40982	R40982		
Date d'échantillonnage		2012/06/28 09:42	2012/06/28 09:42	2012/06/28 09:53	2012/06/28 09:53		
	Unités de	#1 CUISINE T-2	#1 CUISINE T-2 Dup. de Lab.	#2 PONT NAVIGATION T-2 - BUVETTE (PORTE 204)	#2 PONT NAVIGATION T-2 - BUVETTE (PORTE 204) Dup. de Lab.	LDR	Lot CQ

CONVENTIONNELS							
Couleur vraie	UCV	2		<2		2	1022617
Fluorure (F)	mg/L	<0.1		<0.1		0.1	1022482
pH	pH	7.46	7.38	7.11		N/A	1022472
Turbidité	NTU	0.5		0.6		0.1	1022338
Chlorures (Cl)	mg/L	37		37	37	0.05	1022370
Nitrate(N) et Nitrite(N)	mg/L	0.23		0.23	0.23	0.02	1022370
Sulfates (SO4)	mg/L	18		17	17	0.5	1022370
Solide Dissous Totaux	mg/L	110		120		10	1022814

LDR = Limite de détection rapportée

Dossier Maxxam: B233044
 Date du rapport: 2012/07/04

Travaux publics et Services Gouvernementaux Canada(TPSGC)
 Votre # du projet: EP GARDE COTIERE
 Adresse du site: NGCC-AMUNDSEN
 Votre # de commande: 700212388
 Initiales du préleveur: MF

MICROBIOLOGIE (EAU POTABLE)

Identification Maxxam		R40765	R40982		
Date d'échantillonnage		2012/06/28 09:42	2012/06/28 09:53		
	Unités de	#1 CUISINE T-2	#2 PONT NAVIGATION T-2 - BUVETTE (PORTE 204)	LDR	Lot CQ

TESTS MICROBIOLOGIQUES					
Escherichia coli	UFC/100ml	<1	<1	N/A	1022534
Coliformes totaux	UFC/100ml	<1	<1	1	1022534
Bactéries atypiques	/membrane	<1	<1	1	1022538
Chlore résiduel libre	mg/L	1.10	0.04	N/A	SURSITE
LDR = Limite de détection rapportée					

Dossier Maxxam: B233044
Date du rapport: 2012/07/04

Travaux publics et Services Gouvernementaux Canada (TPSGC)
Votre # du projet: EP GARDE COTIERE
Adresse du site: NGCC-AMUNDSEN
Votre # de commande: 700212388
Initiales du préleveur: MF

REMARQUES GÉNÉRALES

État des échantillons à l'arrivée: BON

Veillez noter que l'analyse Chlore résiduel libre a été effectuée sur le site par le client.

BTEX PAR GC/MS (EAU POTABLE)

Veillez noter que les résultats n'ont été corrigés ni pour la récupération des échantillons de contrôle qualité (blanc fortifié), ni pour les surrogates.

Veillez noter que les échantillons sont analysés par Headspace GC/MS.

Veillez noter que les résultats ci-dessus ont été corrigés pour le blanc de méthode.

MÉTAUX (EAU POTABLE)

Veillez noter que les résultats n'ont pas été corrigés ni pour la récupération des échantillons de contrôle qualité, ni pour le blanc de méthode.

PARAMÈTRES CONVENTIONNELS (EAU POTABLE)

Veillez noter que les résultats n'ont pas été corrigés ni pour la récupération des échantillons de contrôle qualité, ni pour le blanc de méthode.

Les résultats ne se rapportent qu'aux objets soumis à l'essai.

Travaux publics et Services Gouvernementaux Canada (TPSGC)

Attention: NANCY DYKE

Votre # du projet: EP GARDE COTIERE

P.O. #: 700212388

Adresse du site: NGCC-AMUNDSEN

Rapport Assurance Qualité

Dossier Maxxam: B233044

Lot Lot Num Init	Type CQ	Groupe	Date Analyse aaaa/mm/jj	Valeur	Réc	Unités de	Limites CQ
1022338 GM2	Blanc fortifié	Turbidité	2012/06/28		108	%	80 - 120
	Blanc de méthode	Turbidité	2012/06/28	<0.1		NTU	
1022370 MCC	ÉTALON CQ	Chlorures (Cl)	2012/06/29		103	%	80 - 120
		Nitrate(N) et Nitrite(N)	2012/06/29		96	%	80 - 120
		Sulfates (SO4)	2012/06/29		100	%	80 - 120
	Blanc fortifié	Nitrate(N) et Nitrite(N)	2012/06/29		93	%	80 - 120
	Blanc de méthode	Chlorures (Cl)	2012/06/29	<0.05		mg/L	
		Nitrate(N) et Nitrite(N)	2012/06/29	<0.02		mg/L	
		Sulfates (SO4)	2012/06/29	<0.5		mg/L	
1022472 GM2	ÉTALON CQ	pH	2012/06/28		100	%	98 - 102
1022482 GM2	ÉTALON CQ	Fluorure (F)	2012/06/28		105	%	80 - 120
	Blanc de méthode	Fluorure (F)	2012/06/28	<0.1		mg/L	
1022617 CO1	Blanc fortifié	Couleur vraie	2012/06/28		96	%	80 - 120
	Blanc de méthode	Couleur vraie	2012/06/28	<2		UCV	
1022674 MB8	Blanc fortifié	4-Bromofluorobenzène	2012/06/29		97	%	70 - 130
		D4-1,2-Dichloroéthane	2012/06/29		107	%	70 - 130
		D8-Toluène	2012/06/29		105	%	70 - 130
		Benzène	2012/06/29		86	%	70 - 130
		Toluène	2012/06/29		87	%	70 - 130
		Ethylbenzène	2012/06/29		78	%	70 - 130
		Xylènes totaux	2012/06/29		76	%	60 - 130
	Blanc de méthode	4-Bromofluorobenzène	2012/06/29		95	%	70 - 130
		D4-1,2-Dichloroéthane	2012/06/29		107	%	70 - 130
		D8-Toluène	2012/06/29		105	%	70 - 130
		Benzène	2012/06/29	<0.2		ug/L	
		Toluène	2012/06/29	<0.1		ug/L	
		Ethylbenzène	2012/06/29	<0.1		ug/L	
		Xylènes totaux	2012/06/29	<0.4		ug/L	
1022750 DP3	Blanc fortifié	Antimoine (Sb)	2012/06/29		117	%	80 - 120
		Cuivre (Cu)	2012/06/29		103	%	80 - 120
		Fer (Fe)	2012/06/29		99	%	80 - 120
		Manganèse (Mn)	2012/06/29		101	%	80 - 120
		Mercure (Hg)	2012/06/29		104	%	80 - 120
		Sodium (Na)	2012/06/29		104	%	80 - 120
		Uranium (U)	2012/06/29		118	%	80 - 120
		Zinc (Zn)	2012/06/29		111	%	80 - 120
		Baryum (Ba)	2012/06/29		116	%	80 - 120
		Bore (B)	2012/06/29		102	%	80 - 120
		Cadmium (Cd)	2012/06/29		118	%	80 - 120
		Chrome (Cr)	2012/06/29		105	%	80 - 120
		Plomb (Pb)	2012/06/29		115	%	80 - 120
		Sélénium (Se)	2012/06/29		102	%	80 - 120
	Blanc de méthode	Antimoine (Sb)	2012/06/29	<0.0030		mg/L	
		Cuivre (Cu)	2012/06/29	<0.0030		mg/L	
		Fer (Fe)	2012/06/29	<0.10		mg/L	
		Manganèse (Mn)	2012/06/29	<0.0030		mg/L	
		Mercure (Hg)	2012/06/29	<0.00010		mg/L	
		Sodium (Na)	2012/06/29	<0.20		mg/L	
		Uranium (U)	2012/06/29	<0.0020		mg/L	
		Zinc (Zn)	2012/06/29	<0.0050		mg/L	
		Baryum (Ba)	2012/06/29	<0.020		mg/L	
		Bore (B)	2012/06/29	<0.050		mg/L	
		Cadmium (Cd)	2012/06/29	<0.0020		mg/L	
		Chrome (Cr)	2012/06/29	<0.0050		mg/L	
		Plomb (Pb)	2012/06/29	<0.0010		mg/L	

Travaux publics et Services Gouvernementaux Canada(TPSGC)
 Attention: NANCY DYKE
 Votre # du projet: EP GARDE COTIERE
 P.O. #: 700212388
 Adresse du site: NGCC-AMUNDSEN

Rapport Assurance Qualité (Suite)

Dossier Maxxam: B233044

Lot Lot				Date Analysé	Valeur	Réc	Unités de	Limites CQ
Num Init	Type CQ	Groupe		aaaa/mm/jj				
1022750	DP3	Blanc de méthode	Sélénium (Se)	2012/06/29	<0.0010		mg/L	
1022814	MCC	Blanc fortifié	Solide Dissous Totaux	2012/06/29		104	%	80 - 120
		Blanc de méthode	Solide Dissous Totaux	2012/06/29	<10		mg/L	

Matériau de référence certifié: Matériau dont une ou plusieurs valeurs des propriétés sont certifiées par une procédure techniquement valide, délivré par un organisme de certification et accompagné d'un certificat. Sert à évaluer l'exactitude d'une méthode analytique.

Blanc fortifié: Blanc auquel a été ajouté une quantité connue d'un ou de plusieurs composés chimiques d'intérêts. Sert à évaluer la récupération des composés d'intérêts.

Blanc de méthode: Une partie aliquote de matrice pure soumise au même processus analytique que les échantillons, du prétraitement au dosage. Sert à évaluer toutes contaminations du laboratoire.

Surrogate: Composé se comportant de façon similaire aux composés analysés et ajouté à l'échantillon avant l'analyse. Sert à évaluer la qualité de l'extraction.

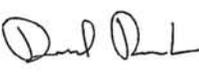
Page des signatures de validation

Dossier Maxxam: B233044

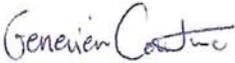
Les résultats analytiques ainsi que les données de contrôle-qualité contenus dans ce rapport furent vérifiés et validés par les personnes suivantes:




Benoit Bouchard, B.Sc., Chimiste, Analyste Senior, Québec




David Provencher, B.Sc., Chimiste, Québec



Genevieve Couture, B. Sc. Microbiologie, Microbiologiste, Québec




Mathieu Letourneau, B.Sc., chimiste, Superviseur, Québec

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DEMANDE D'ANALYSE MAXXAM
TRAVAUX PUBLICS ET SERVICES GOUVERNEEMNTAUX CANADA

No offre permanente : EE517-120816 003 QCN No de commande : 700212388 No échantillon : 1

Projet : EP Carte Coxiere Matrice : Eau potable

Prélevé par : **Marielle Fortin**
 Adresse : **1550 avenue d'Estimauville Québec (Québec) G1J 0C7**
 Téléphone : **418-643-2864**
 Courriel : **Marielle.fortin@tpsgc-pwgsc.gc.ca**

Prélevé à (nez adresse) : **NGC Amundsen**
 Date, heure, T-2, T-3 : **(AA/MM/YY) 2012-06-20 (HH:MM) 9:40**

Description / localisation du pt d'échantillonnage : Cuisine

FACTURÉ À Nancy Dyke (514 496-3534)
 7ième étage, Place Bonaventure
 800 rue de la Gauchetière Ouest, Montréal, Québec, H5A 1L6
Yvon.gagne@tpsgc-pwgsc.gc.ca
RAPPORTS ENVOYÉS À Nancy.Dyke@tpsgc-pwgsc.gc.ca

*18-20-20
 client John*

PARAMÈTRES À ANALYSER

TYPE	LISTE*	CODE	DEMANDÉ
BACTÉRIOLOGIQUE	E. Coli		✓
	Coli totaux		✓
PHYSICOCHIMIQUE / ESTHÉTIQUE	Turbidité		✓
	Matière dissoute totale		✓
	PH		✓
PHYSICOCHIMIQUE / CMA	Antimoine		✓
	Baryum		✓
	Bore		✓
	Cadmium		✓
	Chrome		✓
	Cuivre		✓
	Fluore		✓
	Fer		✓
	Plomb		✓
	Manganèse		✓
	Mercre		✓
	Sélénium		✓
	Sodium		✓
	Uranium		✓
	Zinc		✓
	Chlorure		✓
	Couleur vraie		✓
Nitrate-Nitrite		✓	
Sulfates		✓	
Benzène		✓	
Éthylbenzène		✓	
Toluene		✓	
Xylene		✓	

Cl libre : 1.10

DEMANDE D'ANALYSE MAXXAM

TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA

No offre permanente : EE517-120816 003 QCN

No de commande : 700212388

No échantillon : 2

Projet :	EP Garde Côtière	Matrice :	Eau potable
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Prélevé par : Marielle Fortin

Adresse : 1550 avenue d'Estimauville Québec (Québec) G1J 0C7

Telephone : 418-643-2466

Courriel : Marielle.fortin@tpsgc-pwgsc.gc.ca

Prélevé à (le adresse) : NCC Amundsen

Date (jour, mois, année) : 2012-06-28 (HOURS) : 9:53 (min) : 12:15

Description / localisation du pt d'échantillonnage : Pont navigation - Buvette (porte 204)

FACTURÉ À Nancy Dyke (514 496-3534)
7ième étage, Place Bonaventure
800 rue de la Gauchetière Ouest, Montréal, Québec, H5A 1L6

RAPPORTS ENVOYÉS À Yvon.gagne@tpsgc-pwgsc.gc.ca
Nancy.Dyke@tpsgc-pwgsc.gc.ca

PARAMÈTRES À ANALYSER

TYPE	LISTE*	CODE	DEMANDÉ
BACTÉRIOLOGIQUE	E. Coli		✓
	Coli totaux		✓
PHYSICOCHIMIQUE / ESTHÉTIQUE	Turbidité		✓
	Matière dissoute totale		✓
PHYSICOCHIMIQUE / CMA	PH		✓
	Antimoine		✓
	Baryum		✓
	Bore		✓
	Cadmium		✓
	Chrome		✓
	Culvre		✓
	Fluorure		✓
	Fer		✓
	Plomb		✓
	Manganèse		✓
	Mercure		✓
	Sélénium		✓
	Sodium		✓
	Uranium		✓
	Zinc		✓
	Chlorure		✓
	Couleur vraie		✓
	Nitrate-Nitrite		✓
	Sulfates		✓
	Benzène		✓
	Éthylbenzène		✓
	Toluene		✓
Xylene		✓	

C/livre : 0.04

18-20-20
Client -
10h30
88

REF: HD-15

