



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À :**

**Parks Canada Agency
3 Passage du Chien-d'Or
Québec, Québec
G1R 3Z8**

**INVITATION TO TENDER
APPEL D'OFFRES**

Tender To: Parks Canada Agency
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.

Soumission aux: l'Agence Parcs 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 at aux annexes ci-jointes, les biens, services et construction énumérés ici et sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

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

Issuing Office - Bureau de distribution

Parks Canada Agency
3 Passage du Chien-d'Or
Québec, Québec
G1R 3Z8

Title-Sujet Excavation and disposal of soils Quai de transbordement Lachine Canal NHSC		Date August 7, 2013
Solicitation No. - No. de l'invitation 13-1001 (10130482)	Client Ref. No. - No. de réf du client.	
GETS Reference No. - No de reference de SEAG		
Solicitation Closes L'invitation prend fin – at – à 02:00 PM on – le August 21st 2013	Time Zone Fuseau horaire - Eastern Daylight Time (EDT)	
Address Inquiries to: - Adresser toute demande de renseignements à : Annie Rodrigue 3, passage du Chien-d'Or Québec (Québec) G1R 3Z8 csq.contrats@pc.gc.ca		
Telephone No. - No de téléphone (418) 649-8202	Fax No. - No de FAX: (418) 648-5392	
Destination of Goods, Services, and Construction: Destinations des biens, services et construction: See Herein		
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur		
Name and title of person authorized to sign on behalf of the Vendor/Firm Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur		
Signature	Date	

INVITATION TO TENDER

IMPORTANT NOTICE TO BIDDERS

CLAUSES REFERRED TO BY NUMBER (E.G. R2710T) CAN BE FOUND AT THE FOLLOWING WEB SITE

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

BID SECURITY REQUIREMENTS

The amount of bid security required has been increased to 10% of the bid amount (\$2,000,000 maximum).

See GI08 of R2710T - General Instructions to Bidders.

CONTRACT SECURITY REQUIREMENTS

The amount of a security deposit that is required in lieu of a performance bond has been increased to 10% of the contract amount (\$2,000,000 maximum).

See GC9.2 of R2890D - Contract Security

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GENERAL INSTRUCTIONS TO BIDDERS (GI) - R2710T (2012-11-09)

The following GI's are included by reference and are available at the following Web Site:

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

- GI01 Code of Conduct and Certifications (*Revised*)
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SPECIAL INSTRUCTIONS TO BIDDERS (SI)

SI01 BID DOCUMENTS

- 1) The following are the bid documents:
 - (a) Invitation to Tender - Page 1;
 - (b) Special Instructions to Bidders;
 - (c) General Instructions to Bidders R2710T (2012-07-16); As amended by paragraphs 3) 4) & 5) of SI01
 - (d) Clauses & Conditions identified in "Contract Documents";
 - (e) Drawings and Specifications;
 - (f) Bid and Acceptance Form and related Appendice(s); and
 - (g) Any amendment issued prior to solicitation closing.

Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

- 2) General Instructions to Bidders are incorporated by reference and is set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site:
<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>
- 3) GI01 Code of Conduct and Certifications
 1. Bidders must comply with the Code of Conduct for Procurement. Furthermore, in addition to the Code of Conduct for Procurement, bidders must respond to bid solicitations in an honest, fair and comprehensive manner, accurately reflect their capacity to satisfy the requirements stipulated in the bid solicitation and resulting contract, submit bids and enter into contracts only if they will fulfill all obligations of the Contract. To ensure fairness, openness and transparency in the procurement process, the following activities are prohibited:
 - (a) payment of a contingency fee to a person to whom the Lobbying Act (1985, c. 44 (4th Supp.)) applies;
 - (b) corruption, collusion, bid-rigging or any other anti-competitive activity in the procurement process.
 2. By submitting a bid, the Bidder certifies that except for those offences where a criminal pardon has been obtained or leniency granted, neither the Bidder nor any of the Bidder's parent, subsidiaries or other affiliates has ever been convicted of a criminal offence in respect of the activities stated in (a) or (b) above or is the subject of outstanding criminal charges in respect of such activities filed subsequent to September 1, 2010.
 3. Bidders further understand that the commission of certain offences will render them ineligible to be awarded a contract. By submitting a bid, the Bidder certifies that except for those offences where a criminal pardon has been obtained, neither the Bidder nor any of the Bidder's parent, subsidiaries or other affiliates has ever been convicted or is the subject of outstanding criminal charges in respect of an offence under any of the following provisions:

section 121 (*Frauds on the government and Contractor subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud committed against Her Majesty*) or section 418 (*Selling defective stores to Her Majesty*) of the Criminal Code of Canada, or under paragraph 80(1)(d) (*False entry, certificate or return*), subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the *Financial Administration Act*.
 4. For the purpose of this section, business concerns, organizations or individuals are Bidder's affiliates if, directly or indirectly, 1) either one controls or has the power to control the other, or 2) a third party has the power to control both. Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the charges or convictions contemplated in this section which has the same or similar management, ownership, or principal employees as the Bidder that is charged or convicted, as the case may be.

5. The Contracting Authority will declare non-responsive any bid in respect of which the information contained in the certifications contemplated above is determined to be untrue in any respect by the Contracting Authority.

6. In circumstances where a bidder or any of the Bidder's parent, subsidiaries or other affiliates has pled guilty of an offence contemplated in subsections 1 and 3, the Bidder must provide with its bid, a certified copy of confirming documentation from the Competition Bureau of Canada indicating that leniency has been granted, or a certified copy of confirming documentation from the National Parole Board indicating that a criminal pardon has been obtained, in relation to such offences.

7. The Bidder or any of the Bidder's parent, subsidiaries or other affiliates must remain free and clear of any charges or convictions contemplated in subsections 1 and 3 during the period of any resulting contract arising from this bid solicitation.

4) GI12 Rejection of Bid

1. Canada may reject a bid where any of the following circumstances is present:

(a) the Bidder is subject to a Vendor Performance Corrective Measure, under the Vendor Performance Corrective Measure Policy, which renders the Bidder ineligible to bid on the requirement;

(b) an employee, or subcontractor included as part of the bid, is subject to a Vendor Performance Corrective Measure, under the Vendor Performance Corrective Measure Policy, which would render that employee or subcontractor ineligible to bid on the requirement, or the portion of the requirement the employee or subcontractor is to perform;

(c) the Bidder is bankrupt or where, for whatever reason, its activities are rendered inoperable for an extended period;

(d) evidence, satisfactory to Canada, of fraud, bribery, fraudulent misrepresentation or failure to comply with any law protecting individuals against any manner of discrimination, has been received with respect to the Bidder, any of its employees or any subcontractor included as part of the bid;

(e) evidence satisfactory to Canada that based on past conduct or behavior, the Bidder, a subcontractor or a person who is to perform the Work is unsuitable or has conducted himself/herself improperly;

(f) with respect to current or prior transactions with the Government of Canada:

(i) Canada has exercised its contractual remedies of suspension or termination for default with respect to a contract with the Bidder, any of its employees or any subcontractor included as part of the bid;

(ii) Canada determines that the Bidder's performance on other contracts, including the efficiency and workmanship as well as the extent to which the Bidder performed the Work in accordance with contractual clauses and conditions, is sufficiently poor to jeopardize the successful completion of the requirement being bid on.

2. Where Canada intends to reject a bid pursuant to a provision of subsection 1. (f), the Contracting Authority will so inform the Bidder and provide the Bidder ten (10) days within which to make representations, before making a final decision on the bid rejection.

3. Canada reserves the right to apply additional scrutiny, in particular, when multiple bids are received in response to a bid solicitation from a single bidder or a joint venture. Canada reserves the right to:

- (i) reject any or all of the bids submitted by a single bidder or joint venture if their inclusion in the evaluation has the effect of prejudicing the integrity and fairness of the process, or;
- (ii) reject any or all of the bids submitted by a single bidder or joint venture if their inclusion in the procurement process would distort the solicitation evaluation, and would cause a result that would not reasonably have been expected under prevailing market conditions and/or would not provide good value to Canada.

5) GI14 Procurement Business Number

1) Bidders are required to have a Procurement Business Number (PBN) before Contract award. Bidders may register for a PBN in the Supplier Registration Information system on the [Contracts Canada](#) Web site. For non-Internet registration, Bidders may contact the nearest [Supplier Registration Agent](#).

SI02 ENQUIRIES DURING THE SOLICITATION PERIOD

- 1) Enquiries regarding this bid must be submitted in writing to the Contracting Officer named on the Invitation to Tender - Page 1 as early as possible within the solicitation period. Except for the approval of alternative materials as described in GI16 of R2710T "General Instructions to Bidders", enquiries should be received no later than five (5) calendar days prior to the date set for solicitation closing to allow sufficient time to provide a response. Enquiries received after that time may not result in an answer being provided.
- 2) To ensure consistency and quality of the information provided to Bidders, the Contracting Officer shall examine the content of the enquiry and shall decide whether or not to issue an amendment.
- 3) All enquiries and other communications related to this bid sent throughout the solicitation period are to be directed ONLY to the Contracting Officer named on the Invitation to Tender - Page 1. Failure to comply with this requirement may result in the bid being declared non-responsive.

SI03 OPTIONAL SITE VISIT

There will be an optional site visit Thursday August 15th 2013 at 10:00 a.m. Interested bidders are to confirm their attendance with Dominic Pierre at 450-658-2428 and the corner of Richmond road and Bassin road, Montréal (See Annex III for location plan. The representative of the bidder will be required to sign the Site Visit Attendance Sheet at the site visit.

SI04 REVISION OF BID

A bid may be revised by letter or facsimile in accordance with GI11 of R2710T "General Instructions to Bidders". The facsimile number for receipt of revisions is 418-648-5392.

SI05 BID RESULTS

- 1) A public bid opening will be held in the office designated on the Front Page "Invitation to Tender" for the receipt of bids shortly after the time set for solicitation closing.
- 2) Following solicitation closing, bid results may be obtained by calling the bid receiving office at telephone No. 418-648-4569

SI06 NEGOTIATIONS

- 1) In the event that the lowest compliant bid exceeds the amount of funding Canada has allocated for the construction phase of the work
 - (a) by 15% or less, Canada, at its sole discretion, shall either
 - (i) Cancel the solicitation; or
 - (ii) Obtain additional funding and, subject to the provisions of GI11 of the General Instructions to Bidders, award the Contract to the Bidder submitting the lowest compliant bid; or
 - (iii) Revise the scope of the work accordingly and negotiate, with the Bidder submitting the lowest compliant bid, a corresponding reduction in its bid price.
 - (b) by more than 15%, Canada, at its sole discretion, shall either
 - (i) Cancel the solicitation; or
 - (ii) Obtain additional funding and, subject to the provisions of GI11 of the General Instructions to Bidders, award the Contract to the Bidder submitting the lowest compliant bid; or
 - (iii) Revise the scope of the work accordingly and invite those who submitted compliant bids at the original solicitation to re-bid the work.
- 2) If negotiations or a re-bid are undertaken as is contemplated in subparagraphs 1)(a)(iii) or 1)(b)(iii) above, Bidders shall retain the same subcontractors and suppliers as they carried in their original bids.
- 3) If Canada elects to negotiate a reduction in the bid price as is contemplated in subparagraph 1)(a)(iii) herein and the negotiations fail to reach an agreement, Canada shall then exercise either of the options referred to subparagraphs 1)(a)(i) or 1)(a)(ii)

SI07 BID VALIDITY PERIOD

- 1) Canada reserves the right to seek an extension to the bid validity period prescribed in BA04 of the Bid and Acceptance Form. Upon notification in writing from Canada, Bidders shall have the option to either accept or reject the proposed extension.
- 2) If the extension referred to in paragraph 1) of SI07 is accepted, in writing, by all those who submitted bids, then Canada shall continue immediately with the evaluation of the bids and its approvals processes.
- 3) If the extension referred to in paragraph 1) of SI07 is not accepted in writing by all those who submitted bids then Canada shall, at its sole discretion, either
 - (a) continue to evaluate the bids of those who have accepted the proposed extension and seek the necessary approvals; or
 - (b) cancel the invitation to tender.
- 4) The provisions expressed herein do not in any manner limit Canada's rights in law or under SI01 4) of Special Instructions to Bidders

SI08 CONSTRUCTION DOCUMENTS

The successful Contractor will be provided with one paper copy of the sealed and signed drawings, the specifications and the amendments upon acceptance of the offer. Additional copies, up to a maximum of (1), will be provided free of charge upon request by the Contractor. Obtaining more copies shall be the responsibility of the Contractor including costs.

SI09 WEB SITES

The connection to some of the Web sites in the solicitation documents is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Treasury Board Appendix L, Acceptable Bonding Companies:

<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appL>

Contracts Canada (Buy and Sell):

<https://www.achatsetventes-buyandsell.gc.ca/eng/welcome>

Canadian economic sanctions:

<http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

Contractor Performance Evaluation Report (Form PWGSC-TPSGC 2913):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913.pdf>

Bid Bond (form PWGSC-TPSGC 504):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/504.pdf>

Performance Bond (form PWGSC-TPSGC 505):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/505.pdf>

Labour and Material Payment Bond (form PWGSC-TPSGC 506):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/506.pdf>

Certificate of Insurance (form PWGSC-TPSGC 357):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/357.pdf>

SACC Manual:

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

Schedules of Wage Rates for Federal Construction Contracts:

http://www.rhdcc-hrsdc.gc.ca/eng/labour/employment_standards/contracts/schedule/index.shtml

PWGSC, Industrial Security Services:

<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>

PWGSC, Code of Conduct and Certifications

<http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/index-eng.html>

SUPPLEMENTARY CONDITIONS (SC)

SC01 CHANGES TO CONTRACT DOCUMENTS

The term "Engineer" is replaced with the term "Departmental Representative" in the Drawings and Specifications.

SC02 INSURANCE TERMS – ADDITIONALLY NAMED INSURED

Under R2910D Insurance Terms para IT 2.2

Delete: "The policy shall insure the Contractor and shall include Her Majesty the Queen in right of Canada, represented by the Minister of Public Works and Government Services Canada as an additional Insured, with respect to liability arising out of the operations of the contractor with regard to the work.

Insert: "The policy shall insure the Contractor and shall include Her Majesty the Queen in right of Canada, represented by the Minister of the Environment for the purposes of the Parks Canada Agency as an additional Insured, with respect to liability arising out of the operations of the contractor with regard to the work.

SC03 SECURITY REQUIREMENT FOR CANADIAN CONTRACTORS

The form "Attestation and Proof of Compliance with Occupational Health and Safety (OHS)" in appendix will be required to complete and sign by the Contractor prior to commencement of any work.

CONTRACT DOCUMENTS (CD)

- 1) The following are the contract documents:
 - (a) Contract Page when signed by Canada;
 - (b) Duly completed Bid and Acceptance Form and any Appendices attached thereto;
 - (c) Drawings and Specifications;
 - (d) General Conditions and clauses
 - GC1 General Provisions R2810D (2012-11-19); (As amended by paragraph 5)
 - GC2 Administration of the Contract R2820D (2012-07-16);
 - GC3 Execution and Control of the Work R2830D (2010-01-11);
 - GC4 Protective Measures R2840D (2008-05-12);
 - GC5 Terms of Payment R2850D (2010-01-11);
 - GC6 Delays and Changes in the Work R2860D (2012-07-16);
 - GC7 Default, Suspension or Termination of Contract R2870D (2008-05-12);
 - GC8 Dispute Resolution R2880D (2012-07-16);
 - GC9 Contract Security R2890D (2012-07-16);
 - GC10 Insurance R2900D (2008-05-12);Supplementary Conditions
 - Insurance Terms R2910D (2008-12-12);
 - Fair Wages and Hours of Labour - Labour Conditions R2940D (2012-07-16);
 - Allowable Costs for Contract Changes Under GC6.4.1 R2950D (2007-05-25);Schedules of Wage Rates for Federal Construction Contracts;
 - (e) Any amendment issued or any allowable bid revision received before the date and time set for solicitation closing;
 - (f) Any amendment incorporated by mutual agreement between Canada and the Contractor before acceptance of the bid; and
 - (g) Any amendment or variation of the contract documents that is made in accordance with the General Conditions.
- 2) The documents identified by title, number and date above are incorporated by reference and are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>
- 3) Schedules of Wage Rates for Federal Construction Contracts is included by reference and may be accessed from the Web site: http://www.rhdcc-hrsdc.gc.ca/eng/labour/employment_standards/contracts/schedule/index.shtml.
- 4) The language of the contract documents is the language of the Bid and Acceptance Form submitted.
- 5) GC1.20 Code of Conduct and Certifications
 1. The Contractor agrees to comply with the [Code of Conduct for Procurement](#) and to be bound by its terms. Furthermore, in addition to the [Code of Conduct for Procurement](#), the Contractor must comply with the terms set out in this section.
 2. The Contractor certifies that except for those offences where a criminal pardon has been obtained or leniency granted, neither the Contractor nor any of the Contractor's parent, subsidiaries or other affiliates has ever been convicted or is the subject of outstanding criminal charges subsequent to September 1, 2010 in respect of any of the following:
 - (a) payment of a contingency fee to a person to whom the [Lobbying Act](#) (1985, c. 44 (4th Supp.)) applies;
 - (b) corruption, collusion, bid-rigging or any other anti-competitive activity in the procurement process.

3. The Contractor certifies that except for those offences where a criminal pardon has been obtained, neither the Contractor nor any of the Contractor's parent, subsidiaries or other affiliates has ever been convicted or is the subject of outstanding criminal charges in respect of any of the following:

(a) section 121 (*Frauds on the government and Contractor subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud committed against Her Majesty*) or section 418 (*Selling defective stores to Her Majesty*) of the Criminal Code of Canada, or

(b) paragraph 80(1)(d) (*False entry, certificate or return*), subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the *Financial Administration Act*.

4. For the purpose of this section, business concerns, organizations or individuals are Contractor's affiliates if, directly or indirectly:

(a) either one controls or has the power to control the other, or

(b) a third party has the power to control both.

Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the charges or convictions contemplated in this section which has the same or similar management, ownership, or principal employees as the Contractor that is charged or convicted, as the case may be.

5. In circumstances pursuant to subsections 2 and 3, where the Contractor or any of the Contractor's parent, subsidiaries or other affiliates has obtained a criminal pardon or is granted leniency in relation to such offences, the Contractor must provide a certified copy of confirming documentation from the National Parole Board or the Competition Bureau of Canada.

6. If the Contractor or any of the Contractor's parent, subsidiaries or other affiliates does not remain free and clear of any charges or convictions mentioned at subsections 2 and 3 during the period of the Contract, Canada reserves the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

BID AND ACCEPTANCE FORM (BA)

BA01 IDENTIFICATION

Excavation and disposal of soils, Quai de transbordement - Lachine Canal NHSC

BA02 BUSINESS NAME AND ADDRESS OF BIDDER

Name: _____

Address: _____

Telephone: _____ Fax: _____ PBN: _____

BA03 THE OFFER

The Bidder offers to Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the **TOTAL BID AMOUNT INDICATED IN APPENDIX 1**.

BA04 BID VALIDITY PERIOD

The bid shall not be withdrawn for a period of [_30_] days following the date of solicitation closing.

BA05 ACCEPTANCE AND CONTRACT

Upon acceptance of the Contractor's offer by Canada, a binding Contract shall be formed between Canada and the Contractor. The documents forming the Contract shall be the contract documents identified in Contract Documents (CD).

BA06 CONSTRUCTION TIME

The Contractor shall perform and complete the Work 20 days after contract award.

BA07 BID SECURITY

The Bidder is enclosing bid security with its bid in accordance with GI09 - Bid Security Requirements of R2710T - General Instructions to Bidders.

BA08 SIGNATURE

Name and title of person authorized to sign on behalf of Bidder (Type or print)

Signature

Date

Appendice 1 Appendix 1

BORDEREAU D'APPEL D'OFFRES
CLASSE A

Nom du projet
PARCS CANADA PARKS CANADA EXCAVATION ET DISPOSITION DES SOLS EXCAVATION AND DISPOSAL OF SOILS

Numéro du projet	
R.057393.100	
Révision	Date
Révision	AOÛT 2013

	BORDEREAU D'APPEL D'OFFRES
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Partie	Description	Total
1.	PARTIE A PART A	\$
2.	PARTIE B PART B	\$
	SOUS-TOTAL : SUB-TOTAL :	\$

Nom du projet
PARCS CANADA PARKS CANADA EXCAVATION ET DISPOSITION DES SOLS EXCAVATION AND DISPOSAL OF SOILS

Numéro du projet	
R.057393.100	
Révision	Date
Révision	AOÛT 2013

Partie	1. – PARTIE A
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Item No	Description	Quantité <i>Quantity</i>	Unité <i>Unit</i>	Prix unitaire <i>Unit Price</i>	Total
1.	<u>PARTIE A</u> <u>PART A</u>				
1.1	Prix pour l'ensemble des travaux montrés et décrits aux plans et devis à l'exception de la partie B du bordereau. <i>Sum for elements described in the drawings and specifications, except for Part B.</i>	1	global	\$	\$
	<u>Total 1. – Partie A/Part A</u>				\$

Nom du projet
PARCS CANADA PARKS CANADA EXCAVATION ET DISPOSITION DES SOLS EXCAVATION AND DISPOSAL OF SOILS

Numéro du projet	
R.057393.100	
Révision	Date
Révision	AOÛT 2013

Partie	2. – PARTIE B
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Item No	Description	Quantité <i>Quantity</i>	Unité <i>Unit</i>	Prix unitaire <i>Unit Price</i>	Total
2.	<u>PARTIE B</u> <u>PART B</u>				
2.1	Excavation, tri et mise en pile, chargement, transport et disposition de matériaux propres sous le critère A <i>Excavation, sorting and stacking, loading, transportation and disposal of clean materials below criteria A.</i>	935	TM	\$	\$
2.2	Excavation, tri et mise en pile, chargement, transport et disposition de matériaux contaminés au delà du critère A et inférieur au critère B (A-B). <i>Excavation, sorting and stacking, loading, transportation and disposal of contaminated materials beyond criteria A and below criteria B (A-B).</i>	550	TM	\$	\$
2.3	Excavation, tri et mise en pile, chargement, transport et disposition de matériaux contaminés au delà du critère B et inférieur au critère C (B-C) <i>Excavation, sorting and stacking, loading, transportation and disposal of contaminated materials beyond criteria B and below criteria C (B-C).</i>	1 000	TM	\$	\$
2.4	Excavation, tri et mise en pile, chargement, transport et disposition de matériaux contaminés au delà du critère C (C+). <i>Excavation, sorting and stacking, loading, transportation and disposal of contaminated materials beyond criteria C (C+).</i>	200	TM	\$	\$
2.5	Débris divers (Pierre, brique, bois, béton e.t.c) présentant une granulométrie supérieur à 150 mm. <i>Miscellaneous debris (Stone, brick, wood, concrete, etc.) with a particle size greater than 150 mm.</i>	150	TM	\$	\$
	<u>Total 1. – Partie B/Part B</u>				\$

BID AND ACCEPTANCE FORM – APPENDIX 2

ATTESTATION FORM

The following form must be completed and signed prior to commencing work on Parks Canada Sites.

Attestation and Proof of Compliance with Occupational Health and Safety (OHS)

Submission of this completed form, satisfactory to Parks Canada, is a condition of gaining access to the work place.

Parks Canada recognizes that federal OHS legislation places certain specific responsibilities upon Parks Canada as owner of the work place. In order to meet those responsibilities, Parks Canada is implementing a contractor safety regime that will ensure that roles and responsibilities assigned under Part II of the *Canada Labour Code* and the *Canada Occupational Health and Safety Regulations* are implemented and observed when involving contractor(s) to undertake works in Parks Canada work places.

Parks Canada Responsible Authority/Project Lead	Address	Contact Information
Project Manager/Contracting Authority (delete as required)		
Prime Contractor		
Subcontractor(s) (add additional fields as required)		

Location of Work

General Description of Work to be Completed

Mark "Yes" where applicable.

	A meeting has been held to discuss hazards and access to the work place and all known and foreseeable hazards have been identified to the contractor and/or subcontractor(s)
	The contractor and/or its subcontractor(s) will comply with all federal and provincial/territorial legislation and Parks Canada's policies and procedures, regarding occupational health and safety.
	The contractor and/or its subcontractor(s) will provide all prescribed safety materials, equipment, devices and clothing.
	The contractor and/or its subcontractor(s) will ensure that its employees are familiar with and use all prescribed safety materials, equipment, devices and clothing at all times.
	The contractor and/or its subcontractor(s) will ensure that its activities do not endanger the health and safety of Parks Canada employees.
	The contractor and/or its subcontractor(s) has inspected the site and has carried out a hazard assessment and has put in place a health and safety plan and informed its employees accordingly, prior to the commencement of the work.
	Where a contractor and/or its subcontractor(s) will be storing, handling or using hazardous substances in the work place, it will place warning signs at access points warning persons of the presence of the substances and any precautions to be taken to prevent or reduce any hazard of injury or death.
	The contractor and/or its subcontractor(s) will ensure that its employees are instructed in respect of any emergency procedures applicable to the site.

I, _____ (contractor), certify that I have read, understood and attest that my firm, employees and all sub-contractors will comply with the requirements set out in this document and the terms and conditions of the contract.

Name _____

Signature _____

Date _____



Parcs Canada Parks
Canada Canada

TECHNICAL SPECIFICATIONS

**LACHINE CANAL
NATIONAL HISTORIC SITE OF CANADA**

**PART 1
EXCAVATION AND DISPOSAL OF SOILS
QUAI DE TRANSBORDEMENT
BASSIN DU NOUVEAU HAVRE**

PWGSC: R.057393.100

PC: C.L. 18-182

AUGUST 2013



Travaux publics et
Services gouvernementaux
Canada

Public Works and
Government Services
Canada

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PART 1 - GENERAL

1.1 Use of Terms

- .1 Department or Client: Canada represented by the Parks Canada Agency under the Ministry of Environment of the Government of Canada.
- .2 Departmental Representative: The Property Manager of the unit of the navigable waters of Canada, Parks Canada Agency, or his authorized representative.
- .3 Contractor: any person, firm or company that signs a contract with Parks Canada Agency for the execution of the project work, and who holds a license under the Act of the Province of Quebec on the professional qualification of building contractors. The Contractor's Project Manager under the Health Act and Safety Act (LSST.) and must act as such to the Commission on Health and Safety (CSST) and meet the obligations in this respect.
- .4 Plans and specifications: all of the call for tenders documents including the specifications, the plans and any drawing and addenda sent subsequently regarding the same structure.

1.2 Interpretation

- .1 Words, terms and abbreviations having a known technical or professional meaning shall be understood according to this meaning in these specifications and these drawings.
- .2 The dimensions indicated in the drawings or borne or represented by a module or lines, arrows or otherwise, shall have priority over the drawings.
- .3 Priority shall be given to the drawings on the largest scale. Likewise, the applicable specifications and drawings shall always be the most recent version.
- .4 All incompatibilities between the specifications and the drawings shall be submitted in writing to the Departmental Representative, so that the latter may render an unappealable decision concerning them, also in writing.
- .5 The specifications and the drawings are complementary, such that whatever is required by one is also required by the other. The structure to be constructed, in accordance with the

specifications and the drawings, shall constitute a complete structure in its essential parts, meaning that it shall include, in particular, all the items normally arising from the prescriptions of the specifications and the drawings, if these items are not all specifically mentioned. The Contractor shall not take advantage of any manifestly unintentional error or an omission it might find to the detriment of Canada. When the quality of the structure or the materials is not precisely indicated, the trade concerned shall provide the best quality.

1.3 Request for
Information

- .1 Any person interested who wishes to obtain technical or administrative information shall refer to the “Communications - Solicitation Period” clause of the Call for Tenders.

1.4 Work Covered by the
Contract Documents

- .1 The Work covered by this contract mainly includes, but without limitation thereto:
 - .1 The excavation and disposal of contaminated the central part of the dock floor.
 - .2 In particular, the Work mainly includes, but without limitation thereto:
 - .1 Excavation according to the levels of proposed excavation;
 - .2 Pile Management contaminated materials, transportation and disposal of contaminated soil
 - .3 Separe contaminated having a particle size greater than 150 mm material.

1.5 Work Schedule

- .1 The Contractor shall proceed diligently and establish its work schedule to complete the Work within 20 days after the contract award notice. The maximum period of mobilization can project is 10 days.
- .2 The Contractor shall submit to the Departmental Representative, within five (5) days after the contract award notice, a schedule indicating the various steps of the progress schedule and the projected completion date.
- .3 According to the work schedule and in a form acceptable to the Departmental Representative, provide the dates of submission of the shop drawings, the lists of materials and the samples within five (5) business days after the contract is awarded.

1.6 Inspection of the Site

- .1 Inspect the construction site to become familiar with the conditions of the project and in order to obtain all the necessary

information for the proper performance of the contract. Ignorance of the site conditions shall in no case constitute a valid reason for claiming a payment.

1.7 Permits, Orders,
By-laws and Regulations

- .1 The Contractor shall be required to procure the permits indispensable to the performance of the Work. It shall comply with all the provincial, municipal or federal by-laws and regulations, and any other statute or any other regulation pertaining to this Work. It shall be required to assume responsibility for any offence against the relevant laws, regulations and by-laws.
- .2 The Contractor shall assume (at its own expense) all the obligations regarding the safety measures required by the Quebec Act respecting occupational health and safety, and all the expenses arising from such obligations.

1.8 Existing Services

- .1 Before interrupting services, inform the Departmental Representative and the utility companies concerned and obtain the necessary authorizations.

1.9 Contaminated Soil

- .1 For the entire work area, contaminated soil is likely to be encountered as mentioned in Schedule 1.
- .2 The Contractor is advised that, at the request of the Departmental Representative, the materials shall be sorted on site, by sector and depth, according to the contamination established in the characterization data in Schedule 1.
- .3 The sorted materials shall be piled separately by type of contamination at suitable locations on the job site and the Departmental Representative will then proceed to evaluate them by means of chemical tests and then notify the Contractor regarding their use.
- .4 The characterized materials exceeding the MDDEP criterion "B" or exceeding the CCME standard for residential/park use shall then be loaded and transported to authorized disposal sites.
- .5 The characterized materials exceed the criteria "B" of the Ministère du Développement Durable de l'Environnement et des Parcs (MDDEP) or exceeds the recommendations of the Canadian Council of Ministers of the Environment (CCME) Park and residential use shall then be loaded and transported to authorized disposal sites. A volume of clean soil should be kept

in a pile on the premises as shown on the plan.

- .6 The transportation of contaminated soils for disposal must be coordinated with the sites and soils loaded at the work site must be placed in approved sites on the same day that the shipment.

1.10 Volume control on
contaminated soil

- .1 The monitoring residence is provided for all work unit price including: the management of contaminated soils.
- .2 Departmental Representative will monitor the disposal of excavation in the works. In this case the contractor must provide to notify the Departmental Representative 48 hours in advance for surveillance purposes.
- .3 Departmental Representative shall provide assistance to the Contractor during the implementation of works and excavation works in the level of contamination
- .4 The Contractor shall provide the vouchers available at the end of each working day stating that contaminated soils were sent to an authorized MDDEP for treatment or landfill. The transport tickets must be signed by the departmental representative before shipping to site layout and copy must be submitted to the Departmental Representative at the end of each working day. The Contractor shall provide the submissions weighing places authorized by the MDDEP the Departmental Representative. All these justificatory these will be used for payment purposes.

1.11 Materials Supplied
by Canada

- .1 Not used

1.12 Use of the Site
by the Contractor

- .1 The Contractor shall have full access within the limits of the Lachine NHSC for the work area concerned.

1.13 Work Schedules

- .1 The Contractor in charge of the Work shall observe suitable work schedules (e.g., from 7:30 a.m. to 7:00 p.m., Monday to Friday) in order to limit the risks of disturbing the residents and the public. The applicable municipal by-laws shall be observed.

1.14 Transportation and Traffic

- .1 Transportation of materials and heavy vehicle traffic shall be limited to the hours and areas permitted by Ville de Montréal to avoid inconvenience to the residents and the public.
- .2 Heavy machinery traffic preferably shall be limited to the

authorized work period.

- .3 Traffic on and around the site will be done so as not to damage the paved bike path or others existing structures.

1.15 Siting of Structures

- .1 The Contractor shall observe the following procedure for siting of the structures to be constructed:
 - .1 Site the alignments, levels and reference points for the structures to be constructed, according to the geometry and elevations indicated in the plans;
 - .2 Perform a joint inspection with the Departmental Representative to optimize the profile of the finished land in order to adapt it to the existing conditions, accounting for the existing structures, existing trees and good drainage, etc.;
 - .3 In case of non-compliance of structures sited by the Contractor, any rework shall be at the Contractor's expense.
 - .4 The georeferenced CAD plan will be made available to the Contractor.

1.16 Detour traffic from the bike path

- 1 The cycle track will be closed to traffic during the construction period. Traffic should be diverted to the southern shore of the Lachine Canal between the Wellington Bridge and Lock 3.
- .2 The Contractor shall ensure that traffic detours for the bike path (already in place) are always sufficient and in place before the mobilization site.
- .3 The detour plan must provide all barriers and signage necessary to ensure safety for the public.
- .4 The plan must be consistent with the requirements of the MTQ.

1.17 Payment

- .1 Notwithstanding any other article of the specifications, the Contractor shall be remunerated according to an overall lump sum price for all of the Work shown and described in the plans and specifications, Part A of the Tender Form, excluding the unit prices submitted in Part B of the Tender Form.

1.18 Piles of existing and proposed land site

- .1 Two piles of soil are existing site. They come from facilities on the outskirts of the wall made later. The soils were characterized and must be evacuated according to their level of contamination. The characterization sheets will be provided by Parks Canada.

.2 A stack of clean soil, the level of contamination is less than A according to MDDEP and consistent with the use Residential / Parks in CCME should be put in a pile and keep on site for future use.

PART 2 - PRODUCTS

.1 Not used.

PART 3 - EXECUTION

.1 Not used.

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Requirements .1 Particular requirements for inspection and testing to be carried out by the laboratory designated by the Departmental Representative are specified under various sections of the Specifications.
- 1.2 Appointment and Payment .1 The Departmental Representative will appoint and pay for the services of a testing laboratory, except as follows:
- .1 Inspections and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspections and testing performed exclusively for the Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests to be carried out by the Contractor under the supervision of the Departmental Representative.
- .2 Where tests or inspections by the designated testing laboratory reveal work not in accordance with contract requirements, the Contractor must pay the cost of additional tests or inspections as required by the Departmental Representative to verify the acceptability of the corrected work.
- 1.3 Contractor's Responsibilities .1 Provide labour, equipment and facilities to:
- .1 Provide access to Work for inspection and testing;
 - .2 Facilitate inspections and tests;
 - .3 Make good work disturbed by inspections and tests;
 - .4 Allow laboratory personnel to store material and cure test samples.
- .2 Notify the Departmental Representative five days in advance of operations to allow for assignment of laboratory personnel and scheduling of tests.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to the testing laboratory.
- .4 Pays costs of uncovering and making good work that is covered before required inspection or testing is completed and approved by the Departmental Representative.

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PART 2 - PRODUCTS

2.1 Not Used .1 Not used.

PART 3 - EXECUTION

3.1 Not Used .1 Not used.

END OF SECTION

PART 1 - GENERAL

1.1 Section Content

- .1 Shop drawings and material data safety sheets. Product and work samples.

1.2 Administrative

- .1 Submit promptly and in orderly sequence, so as to avoid delays in the execution of the Work, the submittals required by the Departmental Representative for approval. Failure to submit in ample time is not considered sufficient reason for extension of execution time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work for which submittals are required until a review of all submittals is completed.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information are not produced in SI metric units, converted values are accepted.
- .5 Review submittals prior to submission to the Departmental Representative. This review by the Departmental Representative represents that necessary requirements have been or will be determined and verified, and that each submittal has been checked and coordinated with requirements of the Work and contract documents. Submittals not stamped, signed, dated and identified in respect of the specific project will be returned without being examined and considered rejected.
- .6 Notify the Departmental Representative in writing, at the time of submission, of any deviations from requirements of the contract documents, stating the reasons for such deviations.
- .7 Ensure that field measurements and affected adjacent work are coordinated.
- .8 The Contractor's responsibility for errors and omissions in submissions is not relieved by the Departmental Representative's review of submittals.
- .9 The Contractor's responsibility for deviations in submissions

from requirements of contract documents is not relieved by the Departmental Representative's review.

- .10 Keep one reviewed copy of each submission on site.
- .11 The submittals must preferably be in PDF format.

1.4 Shop Drawings and
Product Data

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.
- .2 Submit shop drawings bearing the stamp and signature of a qualified professional engineer registered or licensed in the Province of Quebec, Canada.
- .3 Shop drawings must indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for the completion of the Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of the section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow three (3) days for the Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by the Departmental Representative are not intended to change the contract price. If adjustments affect the value of the Work, state such in writing to the Departmental Representative prior to proceeding with the Work.
- .6 Make changes in shop drawings the Departmental Representative may require, consistent with the contract documents. When resubmitting, notify the Departmental Representative in writing of any revisions other than those requested.
- .7 Accompany submissions with a transmittal letter, containing the following:
 - .1 Date;
 - .2 Project title and number;

- .3 Contractor's name and address;
- .4 Identification and quantity of each shop drawing, product data and sample;
- .5 Other pertinent data.

- .8 Submissions must include the following:
 - .1 Date and revision dates;
 - .2 Project title and number;
 - .3 Name and address of:
 - .1 Subcontractor;
 - .2 Supplier;
 - .3 Manufacturer;
 - .4 Contractor's stamp, signed by the Contractor's authorized representative certifying the approval of submissions, the verification of field measurements and compliance with contract documents;
 - .5 Details of appropriate portions of the Work, as applicable:
 - .1 Fabrication;
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances;
 - .3 Setting or erection details;
 - .4 Capacities;
 - .5 Performance characteristics;
 - .6 Standards;
 - .7 Operating weight;
 - .8 Wiring diagrams;
 - .9 Single line and schematic diagrams;
 - .10 Relationship to adjacent work.

- .9 After the Departmental Representative's review, distribute copies of shop drawings and product data.

- .10 Submit six (6) paper copies or one electronic copy in PDF format of shop drawings requested in the specification sections and as the Departmental Representative may reasonably request.

- .11 Submit one (1) electronic copy of product data sheets or brochures for requirements requested in the specification sections and as requested by the Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.

- .12 Submit six (6) paper copies or one (1) electronic copy in PDF format of test reports for requirements requested in the

specification sections and as required by the Departmental Representative.

- .1 Report signed by the authorized official of the testing laboratory that materials, products or systems identical to the materials, products or systems to be provided as part of the Work have been tested in accordance with specified requirements.
 - .2 Testing must be conducted within three (3) years of the contract award for the project.
- .13 Submit six (6) paper copies or one (1) electronic copy of certificates for requirements requested in the specification sections and as requested by the Departmental Representative.
- .1 Statements printed on manufacturer's letterhead and signed by a responsible official of the manufacturer attesting that the products, materials and systems provided meet specification requirements.
 - .2 Certificates must be dated after the award of the project contract and indicate the project title.
- .14 Submit six (6) paper copies or one (1) electronic copy of the manufacturer's instructions for requirements in the specification sections and as requested by the Departmental Representative.
- .1 Pre-printed material describing installation of products, materials and systems, including special notices and material safety data sheets concerning impedances, hazards and safety precautions.
- .15 Submit six (6) paper copies or one (1) electronic copy of the manufacturer's field reports for requirements requested in the specification sections and as requested by the Departmental Representative.
- .1 Documentation of the testing and verification actions taken by the manufacturer's representative to confirm compliance of the products, materials or systems with the manufacturer's instructions.
- .16 Submit six (6) paper copies or one (1) electronic copy of operation and maintenance data for requirements requested in the specification sections and as requested by the Departmental Representative.
- .17 Delete information not applicable to the Work.

- .18 Supplement standard information to provide details applicable to the Work.
- .19 If, upon review of the shop drawings by the Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, the printed copies will be returned and fabrication and installation of the Work may proceed. If shop drawings are rejected, the noted copies will be returned and re-submission of corrected shop drawings, through the same procedure indicated above, must be performed before fabrication and installation of the Work may proceed.

1.5 Samples

- .1 Submit for review three (3) samples as requested in the respective specification sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to the Departmental Representative.
- .3 Notify the Departmental Representative in writing, at the time of submission, of deviations in samples from the requirements of the contract documents.
- .4 Where colour, pattern or texture is a criterion, submit the full range of samples.
- .5 Adjustments made on samples by the Departmental Representative are not intended to change the contract price. If adjustments affect the value of the Work, state such in writing to the Departmental Representative prior to proceeding with the Work.
- .6 Make changes in samples which the Departmental Representative may require, consistent with the contract documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

1.6 Progress Photographs

- .1 Submit progress photographs to the Departmental Representative, if required.

1.7 Certificates and Transcripts

- .1 Immediately after the award of the contract, submit

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transcriptions of insurance policies to the Workers' Compensation Board.

- .2 Submit transcription of insurance policies immediately after the award of the contract.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not Used.

END OF SECTION

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PART 1 - GENERAL

1.1 Related Sections .1 Sections 01 35 30 - Health and Safety Requirements; Section 01 35 43 - Environmental Procedures; and Section 31 23 10 - Excavation, Trenching and Backfilling

1.2 References

.1 Transportation of Dangerous Goods Act (1999)

.2 Canadian Environmental Protection Act (CEPA 1999)

.3 Documentation of the Canadian Council of Ministers of the Environment (CCME)

.4 Canadian Environmental Quality guidelines Standard of CCME

.5 Canadian-wide standards for Petroleum Hydrocarbons (PHC) in Soil

.6 Environmental Quality ACT (MDDEP)

.7 Policies soil protection and rehabilitation of contaminated land MDDEP 1998;

.8 Regulations storage and transfer centers MDDEP contaminated soils;

.9 Generic criteria for soils contaminated MDDEP

.10 Regulations respecting and land reclamation;

.11 Regulation respecting the landfilling of contaminated soils;

.12 Hazardous Materials Regulations;

.13 Regulation respecting the landfilling and incineration of residual materials.

1.3 Submittals

.1 Submit the documents and samples required in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit a detailed hazardous waste management plan before the

beginning of the Work. Every month, provide the written documentation concerning the weekly hazardous waste inspections to the Departmental Representative.

- .3 Submit a detailed contaminated soil management plan work before the beginning of the Work, including the projected contaminated soil storage location, the protective measures against wind erosion and runoff, the list of sites where the contaminated soil will be sent for disposal and proof that these are sites authorized by the MDDEP.
- .4 Documents to submit for the progress meetings: present the documents listed hereinafter no less than twenty-four (24) hours before the meeting is held.
 - .1 Up-to-date progress schedule, indicating the details of the activities. Attach the results of the progress review, indicating whether or not the dates previously determined for the beginning and end of the various steps of the Work have been honoured, the major problems and the corrective actions adopted, the accident reports, equipment breakage and removal of materials and equipment.
 - .2 Any other information required by the Departmental Representative or which may be attached to the agenda of the next progress meeting.
- .5 Siting: Before mobilization, submit the siting drawings illustrating the existing conditions and facilities, the construction facilities and the protections and temporary access provided by the Contractor, including the following:
 - .1 Soil stockpiling areas and demolition waste stockpiling areas;
 - .2 Equipment and material consolidation areas;
 - .3 Exclusion areas, contaminant reduction areas and other areas prescribed by the Contractor in its site-specific health and safety plan.
- .6 Submit the documentation certifying that the employees mandated to handle and dispose of hazardous materials have been trained, evaluated and certified and effectively perform the tasks assigned to them. The employees who will have to handle or who could come into contact with hazardous materials must have taken WHMIS training.

-
- 1.4 Regulatory Requirements
- .1 Implement measures against erosion and against sediment transport.
 - .2 Disposal of waste, debris and rubbish shall be performed in accordance with federal, provincial and local anti-pollution laws, ordinances, codes, regulations and by-laws.
 - .3 The Work shall satisfy or exceed the minimum requirements of applicable federal and provincial laws and regulations.
 - .1 The Contractor shall ensure that it complies with the amendments made to the laws and regulations once they are implemented.
 - .4 If the regulatory requirements exceed the scope of the Work or conflict with certain specific contractual requirements, notify the Departmental Representative immediately.
- 1.5 Scheduling and Progress Schedule
- .1 It is not permitted to begin work involving contact with contaminated soil and materials likely to be contaminated before the stockpiling areas are operational and approved by the Departmental Representative.
 - .2 No contaminated soil will be allowed to leave the work site by the Departmental Representative whether the travel time needed to get to the disposal site exceeds the closing time of the disposal site.
- 1.6 Soil Stockpiling Site Installation
- .1 Supply, use and maintain storage/stockpiling facilities.
 - .2 At the time of stockpiling, the soils will be sorted by the Departmental Representative according to the degree of contamination. Without limitation thereto and according to the requirements, the Contractor should provide for three (3) sites.
 - .1 For type A-B, slightly contaminated soils.
 - .2 For type B-C, moderately contaminated soils.
 - .3 For type C⁺, very contaminated soils.
 - .3 Cap the site with an impermeable membrane at the locations that will be used for stockpiling in order to prevent any contact with the contaminated soil. The Contractor shall have tarps designed to cap the disposed materials until the Departmental Representative asks it to remove the materials from the site.

- .4 The Departmental Representative shall provide the Contractor the necessary information on the characterization of contaminated within 72 hours after the contractor submitted his request to conduct soil characterization.

1.7 Vehicle Access and
Parking

- .1 Maintenance and Use
- .1 Prevent contamination of the access roads. Immediately remove debris and materials likely to be contaminated from the access roads, according to the Departmental Representative's direction. Transport the removed materials and deposit at a designated location approved by the Departmental Representative. Transport the removed materials and dispose of them at an appropriate off-site treatment facility.

1.8 Dust and Particulate
Emissions

- .1 Perform the Work so that it produces as little dust as possible.
- .2 Immediately implement anti-dust and anti-particle measures, according to the Departmental Representative's requirements, and maintain them in force during construction, in accordance with the provincial and municipal regulations and by-laws.
- .3 Adopt effective means to prevent airborne particles from dispersing into the atmosphere. Use drinking water to supply a water spraying system serving to prevent production of dust and particles.
- .4 Obtain the written approval of the Departmental Representative before incorporating chemical substances into the water spraying systems serving to reduce production of dust and particles.
- .5 The trucks used to transport fine or duty materials or contaminated soil shall be equipped with a tarp or a cover at all times. The bed of any truck used to transport soil shall be cleaned carefully between contaminated soil loads and clean fill loads, and at the end of the Work.

Contaminated soil shall be transported using trucks with impermeable beds. No oozing water or loss of materials will be tolerated during transportation.

- .6 Prevent dust from spreading onto contiguous lands.

- .7 The Departmental Representative may interrupt the Work at any time if he considers that the means adopted by the Contractor to reduce dust and particles are inadequate in view of the wind conditions on the site.
- .8 The Work shall be interrupted if the measures implemented by the Contractor to fight airborne dust and particulate emissions are insufficient. The Contractor shall give notice of the means it plans to use to correct the situation and shall modify the operations according to the needs before resuming any activity (excavation, handling, processing, etc.) likely to generate dust and particles.

1.9 Pollution Reduction

- .1 Provide the methods, means and facilities necessary to prevent contamination of soil, water and air by harmful toxic substances or by pollutants caused by construction activities.
- .2 The Contractor shall be ready to contain, clean up and discharge the spills or releases likely to occur on water or on land; it shall maintain on the site, easily accessible, the equipment and materials required to clean up spills or releases.
- .3 Report promptly any spill or release likely to cause damage to the environment:
 - .1 To Environment Canada;
 - .2 To the Ministère du Développement durable, de l'Environnement et des Parcs;
 - .3 To the owner of the pollutant, if known;
 - .4 To the person responsible for the pollutant, if known;
 - .5 To the Departmental Representative.
- .4 Immediately take measures, including the use of all the available resources, to limit and mitigate the impacts of the spill or the release into the environment or on people.
- .5 Provide intervention materials and equipment in case of a spill, including containers, absorbents, shovels and personal protective equipment. The spill response equipment, which will serve to handle the hazardous materials or wastes, shall be accessible at all times and compatible with the type of materials to be handled.

1.10 Water Regulation

- .1 It is not permitted to discharge outside the site or into the municipal sewer any contaminated water or runoff water or

groundwater that may have been in contact with materials or equipment likely to be contaminated.

- .2 Prevent precipitation from infiltrating into the stockpiled soil or from running out of the stockpiling area. Cover the stockpiled soil with an impermeable membrane during the work interruption periods and after each work day, according to the Departmental Representative's direction.
- .3 Direct to the existing surface drainage systems any runoff water that has not been in contact with materials or equipment likely to be contaminated.

1.11 Reducing Erosion and
Sediment Transport

- .1 Employ construction methods that allow regulation of the discharge of surface water from excavation or backfilling works, borrow or waste disposal areas, stockpiled materials, consolidation areas and other work areas. Prevent soil erosion and sediment transport.
- .2 Avoid exposing large surfaces all at once. Stabilize disturbed soil as quickly as possible. Remove the vegetation, reprofile the land or landscape it differently so as to reduce erosion. Remove from contiguous surfaces, discharge systems and watercourses any sediment accumulations resulting from construction activities and repair damage caused by soil erosion and sediment transport according to the Departmental Representative's direction.
- .3 Supply and maintain temporary means, which may include the following: erosion fences, straw or hay bales, geotextiles, discharge works, berms, terraces, temporary drainage pipes, sedimentation basins, plant cover, dikes and any other work required to prevent erosion and migration of silt, mud and sediment and any other debris off the site or towards other areas of the site where they could cause damage, and any other means that might be required by a law, by the Departmental Representative or by a regulation or by-law. It shall also be possible to implement the measures provided against sediment transport or displacement during construction work.
- .4 Straw or hay bales: Use bales tied with iron wire or cord, solidly anchored to the ground by at least two stakes or two reinforcing bars passed through the bale and sunk into the ground to a depth of 300 to 450 mm. Stuff straw or hay into the

spaces between the bales to prevent water from passing through; the bales shall be sunk at least 100 mm into the ground.

- .5 Erosion fence: preassembled unit, ready for installation, consisting of a geotextile attached to posts that can be sunk into the ground. The geotextile shall have a uniform texture and appearance; it shall not exhibit any fault or weak point or tear likely to compromise its physical qualities. The geotextile shall incorporate a UV inhibitor and stabilizers so that it can offer a life cycle of no less than two years of outdoor use.
- .6 Erosion control net: industrial-quality polypropylene net, assembled to the geotextile at the top and base with sturdy thread double stitched at least 750 mm wide.
- .7 Posts: pointed wood, with a square section about 50 mm on the side, passing through the geotextile at the base for a sufficient length for the geotextile to be sunk at least 450 mm in the ground. The interval between posts shall not exceed 2.4 m. The geotextile and the erosion control net shall be fastened to the post with appropriate staples.
- .8 Plan the construction work to prevent damage to the works or encroachment by the equipment on water bodies or drainage ditch talus slopes. Quickly take the measures required to mitigate the consequences of damage, as the case may be. Restore the damaged shores and water bodies to their initial condition.
- .9 Installation
 - .1 Construct temporary erosion control works as indicated. Request the Departmental Representative's direction concerning the siting and/or location of the various elements.
 - .2 Do not place hay/straw bales or erosion fences in water bodies or in drainage trenches.
 - .3 Inspect the erosion and sediment transport control works once a week and after each rainfall; inspect them every day during prolonged rainy periods.
 - .4 The straw/hay bales and/or erosion fences may be removed at the beginning of the work day and reinstalled at the end of the day if they hinder the Work.
 - .5 When work such as removal of vegetation or reprofiling are the cause of soil erosion and sediment transport, remove

materials thus eroded or transported from the contiguous surfaces, drainage systems and watercourses and repair the damage as quickly as possible.

- .6 Before or during construction, it is possible that the Departmental Representative will request Work or installation of structures to correct a temporary situation: berms, gabion mattresses, sediment traps, retention and restraining basins, grading work, plants, retaining walls, gutters, water distribution systems, guardrails, temporary roads and other necessary measures.

The temporary improvements shall remain in place as long as they are necessary or until the Departmental Representative decides otherwise.

- .7 Repair the damaged hay/straw bales; replace those located at the ends of the completed works and prevent scouring under the bales.
- .8 Except if the Departmental Representative indicates otherwise, remove the temporary erosion and sediment transport control devices once the Work is completed. Spread the accumulated sediments so as to form an adequate surface for seeding, or discharge them and then profile the area concerned to allow natural drainage, to the Departmental Representative's satisfaction. The removed materials become the Contractor's property.
- .10 To build the backfill areas, place the materials selectively to avoid creating erosive clayey or silty areas on the surface.
- .11 Do not disturb the existing talus slopes or their protections.
- .12 Perform a periodic inspection of the earthworks to detect signs of erosion and sediment transport; implement the appropriate corrective measures promptly.
- .13 If materials constituting soil and debris accumulate in or on low points, storm sewers, roads, gutters, ditches or other places considered inappropriate by the Departmental Representative, remove them and restore the site to its initial condition.

1.12 Cleaning as the Work
Progresses

- .1 Keep the job site and the contiguous areas clean in accordance with the local, provincial and federal safety and fire protection laws, ordinances, codes, regulation and by-laws.

- .2 Coordinate the cleaning activities with the disposal operations so as to prevent the accumulation of dust, dirt, debris, rubbish and waste.
- 1.13 Final Decontamination
- .1 Perform the final decontamination of the facilities, equipment and materials that might have been in contact with materials and equipment likely to be contaminated, before they are removed from the site.
- .2 Perform the decontamination according to the prescriptions, to the Departmental Representative's satisfaction. As needed, the Departmental Representative may request the Contractor to perform additional decontamination work.
- 1.14 Removal and Disposal
- .1 Remove the surplus materials and equipment and the temporary facilities from the site.
- .2 Dispose of the uncontaminated waste, garbage, debris and rubbish off site.
- .3 It is not permitted to burn or bury waste and rubbish on the job site.
- .4 It is not permitted to release volatile or dangerous waste, such as mineral fuels, oils or paint thinners into the storm sewers or sanitary sewers.
- .5 Do not throw wastes into watercourses or waterways.
- .6 Treat the materials listed hereinafter at an appropriate off-site facility, determined by the Contractor and approved by the Departmental Representative:
- .1 Debris, including surplus construction materials;
 - .2 Uncontaminated garbage and rubbish;
 - .3 Disposable personal protective equipment worn for the final cleaning;
 - .4 Wastewater drained from the wastewater storage tank;
 - .5 Wastewater produced by the final decontamination operations, including cleaning of the wastewater storage tank;
 - .6 Lumber from the decontamination areas.
- .7 Reduce production of hazardous waste whenever possible. Take the necessary measures to prevent clean waste from being mixed with contaminated waste.

- .8 Specify and evaluate the options, such as recycling and reclamation, as alternatives to disposal, for example:
 - .1 Recycling and reuse of hazardous waste in a manner that eliminates it;
 - .2 Burning of hazardous waste for energy recovery;
 - .3 Recycling of lead batteries;
 - .4 Recycling of hazardous waste containing precious metals that can be recovered profitably.

PART 2 - PRODUCTS

2.1 Not Used .1 Not used.

PART 3 - EXECUTION

3.1 Not Used .1 Not used.

END OF SECTION

PART 1 - GENERAL

- 1.1 Section Content .1 This section includes the necessary measures to ensure the health and safety of the public and personnel, as well as environmental protection, throughout the project.
- 1.2 Related Section .1 Section 01 33 00 - Submittal Procedures
- 1.3 References .1 Canada Labour Code, Part II, Canada Occupational Safety and Health Regulations
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
- .1 Material Safety Data Sheets (MSDS)
- .3 Province of Quebec
- .1 An Act Respecting Occupational Health and Safety, R.S.Q. 1997 (updated 26 July 2005)
- 1.4 Submittals .1 Submit the site-specific Health and Safety Plan to the Departmental Representative, as required by law or regulations, within at least (10) days prior to commencement of the Work. The plan must be updated when the course of the Work differs from the Contractor's initial forecasts. After receipt of the plan and at any time during the Work, the Departmental Representative reserves the right to demand that the plan be modified or completed to better reflect the Work. The Contractor must then make the necessary correctives before beginning the Work.
- .2 Submit the required documents and samples in accordance with section 01 33 00 - Submittal Procedures.
- .3 Submit to the Departmental Representative a copy of the health and safety reports carried out on site by the Contractor's authorized representative.
- .4 Submit, within twenty-four (24) hours, one (1) copy of the

directions or reports prepared by federal, provincial and territorial health and safety inspectors.

- .5 Submit, within twenty-four (24) hours, one (1) copy of both incident and accident reports.
- .6 Provide the Departmental Representative with the Material Safety Data Sheets (MSDS) and documentation pertaining to any chemical substance the Contractor or its representative intends to bring to the site.
- .7 The Departmental Representative will review the work Site Health and Safety Plan prepared by the Contractor and provide the latter with comments within five (5) days after receipt of the plan. The Contractor will revise its Health and Safety Plan as appropriate and resubmit it to the Departmental Representative no later than five (5) days after receiving the Departmental Representative's observations.
- .8 The Departmental Representative's review of the Contractor's final Health and Safety Plan should not be construed as approval and does not reduce Contractor's overall responsibility for construction health and safety.
- .9 Medical surveillance: Where prescribed by legislation, regulation or a safety program, submit certification of medical surveillance for site personnel prior to commencement of the Work. Ask the Departmental Representative for additional certification for any new site personnel.
- .10 On-site Contingency and Emergency Response Plan: State standard operating procedures to be implemented during emergency situations.
- .11 Checklist of components to be inspected on a daily basis; description of corrections made.
- .12 Information on personnel training and activities, including the following:
 - .1 The name of the persons and their replacements who are responsible for health and safety issues, on-site risks and the use of individual protection equipment.
 - .2 Work methods that may contribute to reducing health and

safety risks; non-hazardous use of technical control methods and on-site equipment; medical surveillance requirements, including recognition of symptoms and signs potentially indicating overexposure to hazards or risks; site-specific elements of the Health and Safety Plan.

- 1.5 Filing of Notice .1 Before commencement of the Work, file the Notice of Project with the competent authorities. One (1) copy must be submitted to the Departmental Representative.
- 1.6 Assessment of Risks/Hazards .1 Perform site-specific safety risk/hazard assessment related to the execution of the Work.
- 1.7 Meetings .1 Schedule and administer a health and safety meeting with the Departmental Representative before the commencement of Work and ensure its management.
- 1.8 Regulatory Requirements .1 Perform the Work in accordance with the regulatory requirements of the agencies responsible for applying laws and regulations.
- 1.9 Project/Site Conditions .1 Work at the site will involve contact with:
.1 Contaminated soils;
.2 Large concrete parts.
.3 Zones that are flooded and subject to flooding.
.4 Usual risks for this type of site.

1.10 General Requirements

- .1 Develop a written site-specific Health and Safety Plan based on a risk/hazard assessment prior to commencement of site work and continue to implement, maintain and enforce the plan until final demobilization of personnel from the site. The Health and Safety Plan must address project specifications.
- .2 The Departmental Representative may respond in writing where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.
- .3 The exemption or substitution of any provision, in whole or in part, of the Health and Safety guidelines prescribed in this section or the revised site-specific Health and Safety Plan must be submitted in writing to the Departmental Representative. The Departmental Representative will give notification in writing as to whether it accepts these changes or requires improvements.

1.11 Responsibility

- .1 Be responsible for the health and safety of the persons on site, for the property on site, for the protection of persons adjacent to it as well as the environment, to the extent that they may be affected by the conduct of the Work.
- .2 Comply with and enforce employees' compliance with the safety requirements of contract documents, applicable federal, provincial, territorial and local statutes, regulations and ordinances, and with the site-specific Health and Safety Plan.

1.12 Compliance Requirements

- .1 Comply with the Regulation respecting information on controlled products.
- .2 Comply with the Canada Labour Code, Canada Occupational Safety and Health Regulations.
- .3 Comply with the Occupational Health and Safety Act, R.R.Q.

1.14 Posting of Documents

- .1 Ensure applicable items, articles, notices and orders are posted in a conspicuous location on site in accordance with the Acts and Regulations of the Province of Quebec having jurisdiction, and in consultation with the Departmental Representative.

- 1.15 Correction of Non-compliance
- .1 Immediately address health and safety non-compliance issues identified by the authority having jurisdiction or by the Departmental Representative
 - .2 Provide the Departmental Representative with a written report of actions taken to correct the non-compliance of health and safety issues identified.
 - .3 The Departmental Representative may stop the Work if non-compliance with health and safety regulations is not corrected.
- 1.16 Blasting
- .1 Blasting is prohibited at all times.
- 1.17 Power Actuated Devices
- .1 Use powder actuated devices only after receipt of written permission from the Departmental Representative.
- 1.18 Work Stoppage
- .1 Give precedence to the health and safety of the public and site personnel and to the protection of the environment over cost and schedule considerations for the Work.

PART 2 - PRODUCTS

- 2.1 Not Used
- .1 Not used.

PART 3- EXECUTION

- 3.1 Not Used
- .1 Not used.

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Sections .1 Sections 01 33 00 - Submittal Procedures; Section 31 23 10 - Excavating, Trenching and Backfilling
- 1.2 Definitions .1 Pollution and environmental protection: presence of chemical elements or agents, physical or biological, which have a harmful effect on the health and well-being of persons, which alter important ecological balances for humans and impair species that play a significant role for them or which degrade the aesthetic, cultural or historical characteristics of the environment.
- .2 Environmental protection: prevention/control of pollution and stress on the habitat and the environment during construction. The prevention of pollution and environmental damage covers the protection of soils, water, air, biological and cultural resources; it also includes management of visual aesthetics, noise, solid, chemical and gaseous wastes, radiant energy, radioactive materials and other pollutants.
- 1.3 Submittals .1 Submit required submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to the commencement of construction activities or the delivery of materials to the site, submit an environmental protection plan to the Departmental Representative for review and approval purposes. The plan must provide a complete overview of known or potential environmental problems to be solved during construction.
- 1.4 Fire .1 Fires and the burning of wastes on the site are prohibited.
- 1.5 Waste Elimination .1 It is not permitted to eliminate wastes or volatile materials such as solvent naphtha, oils and paint solvents by discharging them into a watercourse, storm sewer or sanitary sewer.
- 1.6 Drainage .1 Provide an action plan against sediment erosion and

transportation that complies with provincial regulations. This plan must be presented to the Departmental Representative in accordance with the requirements set out in Section 013300. This plan must indicate the methods to be implemented, including monitoring of the Work and the production of reports, to ensure that the actions taken comply with federal, provincial and municipal laws and regulations.

- .2 A plan to prevent the pollution of rainwater may replace the action plan against sediment erosion and transportation.
- .3 Ensure necessary temporary drainage and pumping to keep excavations and the site dry.
- .4 It is not permitted to pump water containing suspended particulates into a watercourse, a sewer network or an evacuation or drainage system.
- .5 Ensure evacuation or elimination of water containing suspended particulates or harmful substances in accordance with the requirements of local authorities.

1.7 Site Clearing and Plant Protection

- .1 Not used

1.8 Work Near Watercourses

- .1 It is not permitted to use construction materials in watercourses.
- .2 Do not extract borrow materials from the bed of watercourses without the Departmental Representative's authorization.
- .3 Do not unload cut, waste material or rubbish into watercourses.
- .4 Do not convey logs or other construction materials from one side to the other of watercourses.

1.9 Pollution Prevention

- .1 Maintain temporary installations designed to prevent erosion and pollution, and which are installed under this Contract.
- .2 Ensure the control of emissions produced by tools and equipment, in accordance with the requirements of local authorities.
- .3 Build temporary enclosures to prevent sanding materials and other foreign materials from contaminating air and watercourses beyond the application zone.

- .4 Spray dry materials and cover trash to keep the wind from raising dust or scattering rubbish. Eliminate dust on temporary roads.

1.10 Preservation of Historical
/Archaeological Character

- .1 Develop a plan defining procedures for identifying and protecting wetlands and known historical, archaeological, cultural and biological resources on the site, and/or defining other procedures to follow in the event of the unexpected discovery of such elements, whether on or near the site, during construction.
- .2 The plan must indicate the methods for ensuring protection of known or discovered resources, as well as communication lines between the personnel, the Contractor and the Departmental Representative.

1.11 Archaeology

The Lachine Canal NHSC is considered an archaeological site of national importance. The Contractor must collaborate with Canada when remains are discovered.

- .1 Access and collaboration
 - .1 Cooperate with and comply with all directives from the Departmental Representative during excavation work, so as to avoid any loss of archaeological information on the site.
 - .2 Facilitate access to the Work and collaborate with archaeologists on duty, as needed, and whose role is to guide the Contractor in preventing any loss of archaeological information and collecting information on discovered remains.
 - .3 Allow archaeologists to proceed with archaeological examinations and surveys.
- .2 Archaeological discoveries
 - 1. If the Contractor believes it has made an archaeological discovery during the Work, it must promptly notify the Departmental Representative and wait for the latter's written directives before continuing with the Work at the discovery site.
 - .2 Remains and antiquities and other elements presenting historical, archaeological or scientific interest, such as cornerstones, commemorative plaques, tablets and other objects (remnants, objects or fragments of objects) found

on the site or in zones to be excavated or demolished, remain the property of Canada. Protect any such property and obtain directives from the Departmental Representative in this regard.

- .3 Work stoppage
 - .1 Provide periods of interruption in mechanical excavation work for each half-day of excavation, where work is suspended at no additional cost. The Contractor's required collaboration in the archaeological work includes one (1) period of work interruption of 4 hours to allow sufficient time for archaeological surveys, as the case may be.
 - .2 If discoveries require a work stoppage extending beyond the time allotted, the Contractor shall assign the machinery to other work to allow continuation of the archaeologists' work. If reassignment is impossible, the Contractor will be compensated.
- .4 Manual excavations for archaeological purposes
 - .1 Given the potential for archaeological discoveries, manual excavations may be required. In such case, the Contractor will be compensated.
- .5 Protection of remains and works
 - .1 During excavations, the Contractor shall take all reasonable precautions to protect any discovered remains and clear them for examination by archaeologists. Canada will not tolerate any deviation in this respect. If the Contractor causes any remains to deteriorate through its negligence, it shall be held responsible and Canada will assess the impacts.
 - .2 During demolition work, take all necessary precautions to ensure protection of adjacent works not slated for demolition. Carry out demolitions progressively and in a controlled manner. Carefully demolish items in which materials are to be recovered for future use. If works are damaged during the Work, promptly notify the Departmental Representative.

- 1.12 Notice of Non-Compliance
- .1 The Departmental Representative shall issue a written notice of non-compliance to the Contractor whenever a determination is made of non-compliance with a federal, provincial or municipal law, regulation or permit, or with any other component of the Environmental Protection Plan implemented by the Contractor.
 - .2 After receiving a notice of non-compliance, the Contractor shall propose corrective actions to the Departmental Representative

and implement them with the latter's approval.

- .3 The Departmental Representative shall order the Work to be stopped until satisfactory corrective actions are taken.
- .4 No additional extension or adjustment shall be granted in respect of Work stoppage.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not used.

END OF SECTION

PART 1 - GENERAL

1.1 Section Content

- .1 This section includes all the facilities necessary for the project, namely:
 - .1 Storage on-site storage of materials, equipment and tools, sanitary installation, signaling construction, cleaning
 - .2 Ineligible: parking on site. An area designated first Richmond Street.

1.2 Related Sections

- .1 Sections 01 33 00 - Submittal Procedures

1.3 References

- .1 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1/A23.2-[04], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete
 - .2 CSA-0121-[M1978(R2003)], Douglas Fir Plywood
 - .3 CAN/CSA-Z321-F96 (C2001), Signs and Symbols for the Occupational Environment

1.4 Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.5 Installation and Removal

- .1 Prepare a site plan indicating the proposed location and dimensions of the area used by the Contractor, the avenues of ingress/egress to the fenced area and details of the fence installation.
- .2 Identify areas which have to be gravelled to prevent tracking of mud.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.6 Construction Parking

- .1 It is not allowed to be parked on site.

- .2 Develop suitable access roads to the site and maintain.
 - .3 Protect the oil coating the bike path and the surrounding area. The method of protection shall be submitted in writing and approved by the Departmental Representative.
 - .4 Clean tracks and roads if you are used equipment machinery.
- 1.7 Equipment, Tool and Materials Storage
- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
 - .2 Locate materials not required to be stored in weatherproof sheds on site in a manner that causes the least interference with work activities.
 - .3 The general maintenance and fuel supply of engines and the handling and storage of hydrocarbons must be performed outside the Parks Canada site at a minimum distance of 30 metres from the shore.
- 1.8 Sanitary Facilities
- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
 - .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.
- 1.9 Construction Signage
- .1 Not used
- 1.10 Cleaning
- .1 Perform daily clean-up operations in accordance with Section 01 74 11 - Clean-up.
 - .2 Remove construction debris, waste materials and packaging materials from the work site daily.
 - .3 Clean dirt or mud tracked onto paved or surfaced roadways.
 - .4 Store materials resulting from demolition activities.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

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PART 3 - EXECUTION

3.1 Not Used .1 Not used

END OF SECTION

PART 1 - GENERAL

- 1.1 Section Content .1 Cleaning to be done during execution of the Work.
- 1.2 References .1 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions "C", in effect as of May 14, 2004.
- 1.3 Site Cleanliness
- .1 Maintain the site in tidy condition, free from any accumulation of waste products and debris, including those generated by subcontractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by the Departmental Representative. Do not burn waste materials on the site.
- .3 Clear snow and ice from access to the building. Bank/pile snow in areas designated by the Departmental Representative.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for the disposal of waste and debris.
- .5 Provide on-site containers for the collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling.
- .7 Store volatile waste in covered metal containers, and remove from premises at the end of each working day.
- .8 Use only cleaning materials recommended by the manufacturer of the surface to be cleaned, and as recommended by the cleaning material manufacturer.
- .9 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.
- 1.4 Final Cleaning .1 When the Work is substantially performed, remove surplus products, tools, construction machinery and equipment not required for the performance of the remaining Work.

- .2 Remove waste products and debris and leave the site clean and suitable for occupancy.
 - .3 Prior to the final inspection, remove surplus products, tools, construction machinery and equipment.
 - .4 Remove waste products and debris, including those generated by subcontractors.
 - .5 Remove waste materials from the site at regularly scheduled times or dispose of as directed by the Departmental Representative. Do not burn waste materials on site.
 - .6 Make arrangements with and obtain permits from authorities having jurisdiction for the disposal of waste and debris.
 - .7 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments and walls.
 - .8 Clean lighting reflectors, lenses, and other lighting surfaces.
 - .9 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
 - .10 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
 - .11 Remove dirt and other disfigurements from exterior surfaces.
 - .12 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
 - .13 Remove snow and ice from access to the building.
- 1.5 Waste Management and Disposal .1 Separate waste materials for reuse and recycling.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

Excavation and disposal of soil	Clean-up	Section 01 74 11
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PART 3 - EXECUTION

3.1 Not Used .1 Not used.

END OF SECTION

PART 1 - GENERAL

- | | |
|---|--|
| <u>1.1 Measurement for
Payment Purposes</u> | .1 All excavations, trenching and backfilling shall be paid for unit price basis according a progress of the work. |
| <u>1.2 References</u> | .1 American Society for Testing and Materials International (ASTM) <ul style="list-style-type: none"> .1 ASTM C 117-04, Standard Test Method for Material Finer Than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing .2 ASTM C 136-05, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates .3 ASTM D 422-632002, Standard Test Method for Particle-Size Analysis of Soils .4 ASTM D 698-00ae1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³) .5 ASTM D 1557-02e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³) .6 ASTM D 4318-05, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils .2 Canadian General Standards Board (CGSB) <ul style="list-style-type: none"> .1 CAN/CGSB-8.1-[88], Sieves, Testing, Woven Wire, Inch Series .2 CAN/CGSB-8.2-[M88], Sieves, Testing, Woven Wire, Metric .3 Canadian Standards Association (CSA)/CSA International <ul style="list-style-type: none"> .1 CAN/CSA-A3000-[03], Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005). <ul style="list-style-type: none"> .1 CSA-A3001-[03], Cementitious Materials for Use in Concrete .2 CSA-A23.1/A23.2-[04], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete .4 U.S. Environmental Protection Agency (EPA)/Office of Water <ul style="list-style-type: none"> .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices |

- .5 Cahier des clauses et devis généraux “Infrastructure routière - Construction et réparation” (CCDG), Ministère des Transports du Québec. [General Clauses and Specifications - Road Infrastructure - Construction and Repair.]

1.3 Definitions

- .1 Excavation classes: One class of excavation will be recognized; common excavation lower than criterion A or the CCME standard for residential/park use.
- .1 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.
- .2 Unclassified excavation: excavation of deposits of whatever character encountered in the Work.
- .3 Topsoil
- .1 Material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.
- .2 Material reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and free from cobbles, stumps, roots, and other objectionable material larger than fifteen (15) millimetres.
- .4 Waste material: excavated material unsuitable for use in the Work or surplus to requirements.
- .5 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of the Work.
- .6 Recycled fill material: material, considered inert, obtained from alternate sources and engineered to meet requirements of fill areas.
- .7 Unsuitable materials
- .1 Weak, chemically unstable, and compressible materials.
- .2 Frost susceptible materials:
- .1 Fine grained soils with plasticity index less than 10 when tested to ASTM D4318, and gradation within limits specified when tested to CCDG requirements.

.2 Table

Sieve Designation	Passing %
2.00 mm	[100]

0.10 mm [45 - 100]
0.02 mm [10 - 80]
0.005 mm [0 - 45]

.3 Coarse grained soils containing more than 20% by mass passing 0.075 mm sieve.

1.5 Submittals .1 Submit documents and samples in accordance with Section 01 33 00 – Submittal Procedures.

1.6 Quality Assurance .1 Qualification Statement: Submit proof of insurance coverage for professional liability.

.2 Engage the services of a qualified professional engineer who is registered or licensed in Canada, in the Province of Quebec, to design and inspect cofferdams, shoring, bracing and underpinning required for the Work.

.3 Do not use soil material until the written report of soil test results is reviewed and approved by the Departmental Representative.

.4 Health and Safety Requirements

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.7 Waste Management and Disposal .1 Separate waste materials for reuse and recycling.

.2 Divert reusable excess aggregate materials to a recycling facility.

1.8 Existing Conditions .1 Examine the soil report available in Schedule I of these specifications.

.2 Buried services:

.1 Before commencing the Work, verify the location of buried services on and adjacent to the site.

.2 Arrange with appropriate authorities for relocation of buried services that interfere with execution of the work, and pay the costs of relocating services.

.3 Remove obsolete buried services within 2 m of foundations and cap cut-offs with female plugs.

- .4 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
 - .5 Prior to beginning excavation work, determine the location and state of use of the buried utilities and structures and notify the Departmental Representative. The Departmental Representative will clearly mark such locations to prevent disturbance during the Work.
 - .6 Confirm locations of buried utilities by careful test excavations.
 - .7 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered as indicated.
 - .8 Where utility lines or structures exist in the excavation area, obtain appropriate direction before re-routing or removing.
 - .9 Record the location of maintained, re-routed and abandoned underground lines.
- .3 Existing buildings and surface features:
 - .1 Conduct, with the Departmental Representative, a condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, pavement, survey benchmarks and monuments which may be affected by the Work.
 - .2 Protect existing buildings and surface features from damage while Work is in progress. In the event of damage, immediately make the repair as directed by the Departmental Representative.

PART 2 - PRODUCTS

2.1 Materials

- .1 Fill: According to Section 31 05 17 - Aggregate Materials and the following requirements:
 - .1 Crushed, pit run or screened stone, gravel or sand.
 - .2 Gradations to be within the limits specified when tested to CCDG requirements.
- .2 Type 3 fill (Class B): selected material from excavation or other sources, approved by the Departmental Representative for the use intended, unfrozen and free of rocks larger than 75 mm, cinders, ashes, sods, refuse or other deleterious materials The contamination level is less than A.

.1

PART 3 - EXECUTION

3.1 Erosion and

- .1 Provide temporary erosion and sedimentation control measures

- Sedimentation Control to prevent soil loss that may result from rainwater runoff or windborne erosion and carrying of this soil to adjacent properties and walkways. These measures shall conform to the requirements of the authorities having jurisdiction.
- 3.2 Site Preparation
- .1 Protect existing developed areas. Traffic is prohibited on existing developed areas (paving stone, stone dust trail, wooden deck).
- 3.3 Preparation/Protection
- .1 Keep excavations clean, free of standing water, and loose soil.
- .2 Where soil is subject to significant volume change due to change in moisture content, cover and protect to the Departmental Representative's approval.
- .3 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .4 Protect buried services that are required to remain undisturbed.
- 3.4 Stripping of Topsoil
- .1 Not used.
- 3.5 Stockpiling
- .1 Stockpile fill materials in areas designated by the Departmental Representative.
- .1 Stockpile granular materials in such manner as to prevent segregation.
- .2 Protect fill materials from contamination.
- .3 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.
- 3.6 Excavation
- .1 Remove concrete, masonry, paving, walks, demolished foundations and rubble and other obstructions encountered during excavation.
- .2 Excavation must not interfere with bearing capacity of adjacent foundations.
- .3 Excavate the surfaces so as to maintain a minimum of 300 mm

of clean soil in accordance with the CCME standard for residential/park use or lower than criterion B in relation to the finished level for the entire area concerned by the Work.

- .4 Soils greater than class B starts to be sorted in order to remove any materials having a particle size greater than 150 mm.
- .5 For trench excavation, unless otherwise authorized by the Departmental Representative in writing, do not excavate more than 50 m of trench in advance of installation operations and do not leave open more than 15 m at the end of a day's operation.
- .6 Keep excavated and stockpiled materials a safe distance away from the edge of the trench as directed by the Departmental Representative.
- .7 Restrict vehicle operations directly adjacent to open trenches.
- .8 Dispose of surplus and unsuitable excavated material in an approved location on site or off site.
- .9 Do not obstruct the flow of surface drainage or natural watercourses.
- .10 Earth bottoms of excavations shall be undisturbed soil, level, free of loose, soft or organic matter.
- .11 Notify the Departmental Representative when the bottom of the excavation is reached.
- .12 Obtain the Departmental Representative's approval of the completed excavation.
- .13 Remove unsuitable material from the trench bottom including materials that extend below required elevations to the extent and depth as directed by the Departmental Representative.
- .14 Correct unauthorized over-excavation in accordance with the methods described.
- .15 Hand trim, make firm and remove loose material and debris from excavations.
 - .1 Where material at the bottom of excavations is disturbed, compact the foundation soil to a density at least equal to that of the undisturbed soil.
 - .2 Clean out the rock seams and fill with concrete mortar or grout to the Departmental Representative's approval.

- 3.9 Fill Types and Compaction .1 Not used
- 3.10 Backfilling .1 Not used
- 3.11 Restoration
- .1 Upon completion of the Work, remove waste materials and debris, trim slopes, and correct defects as directed by the Departmental Representative.
 - .2 Reinstall lawns to the elevation which existed before excavation.
 - .3 Reinstall pavements, sidewalks, the bicycle path, trails and other facilities disturbed by excavation to the thickness, structure and elevation which existed before excavation.
 - .4 Clean and reinstall areas affected by the Work as directed by the Departmental Representative.
 - .5 Protect newly graded areas from traffic and erosion and maintain them free of trash or debris.

END OF SECTION

Plans 1

Lot 1 – Excavation et disposition des sols contaminés

Part 1 – Excavation and disposal of contaminated soils

Légende / Legend

- + Niveau existant / Existing level
- EX 15,82 Élévation du niveau d'Excavation /
Excavation level elevation

Note générale :

- 1.0 L'entrepreneur doit valider toutes les mesures avant d'effectuer les travaux.
- 2.0 L'entrepreneur doit s'assurer de la sécurité sur les lieux.

1	Émis pour soumissions	2013-08-02
Modification		Date

A. No du détail	A. Detail No
B. Localisation	B. Localisation
C. Sur feuille No	C. On sheet No

CONCEPTION:	DESIGN:
Conçu par:	Designed by:
C. Simard	

Dessiné par:	Drawn by:
C. Gaudreault	

Vérifié par:	Checked by:
C. Simard	

Chargé de projet:	Project manager by:

VALIDÉ PAR:	VALIDATED BY:

Gestionnaire de projet:	Project manager:
C. Simard	

Gestionnaire principal de projet:	Project director:
S. Huot	

Projet:	Project:

**QUAI DE
TRANSBORDEMENT
LHNC DU CANAL DE
LACHINE**

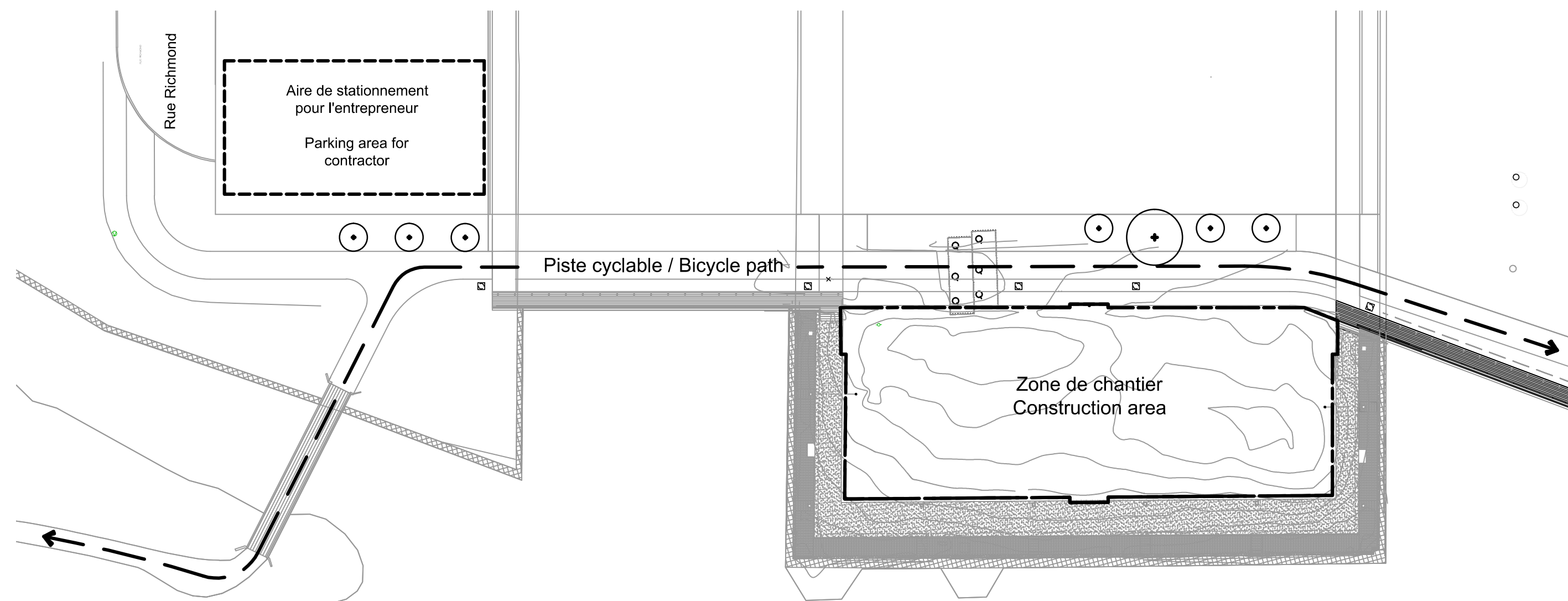
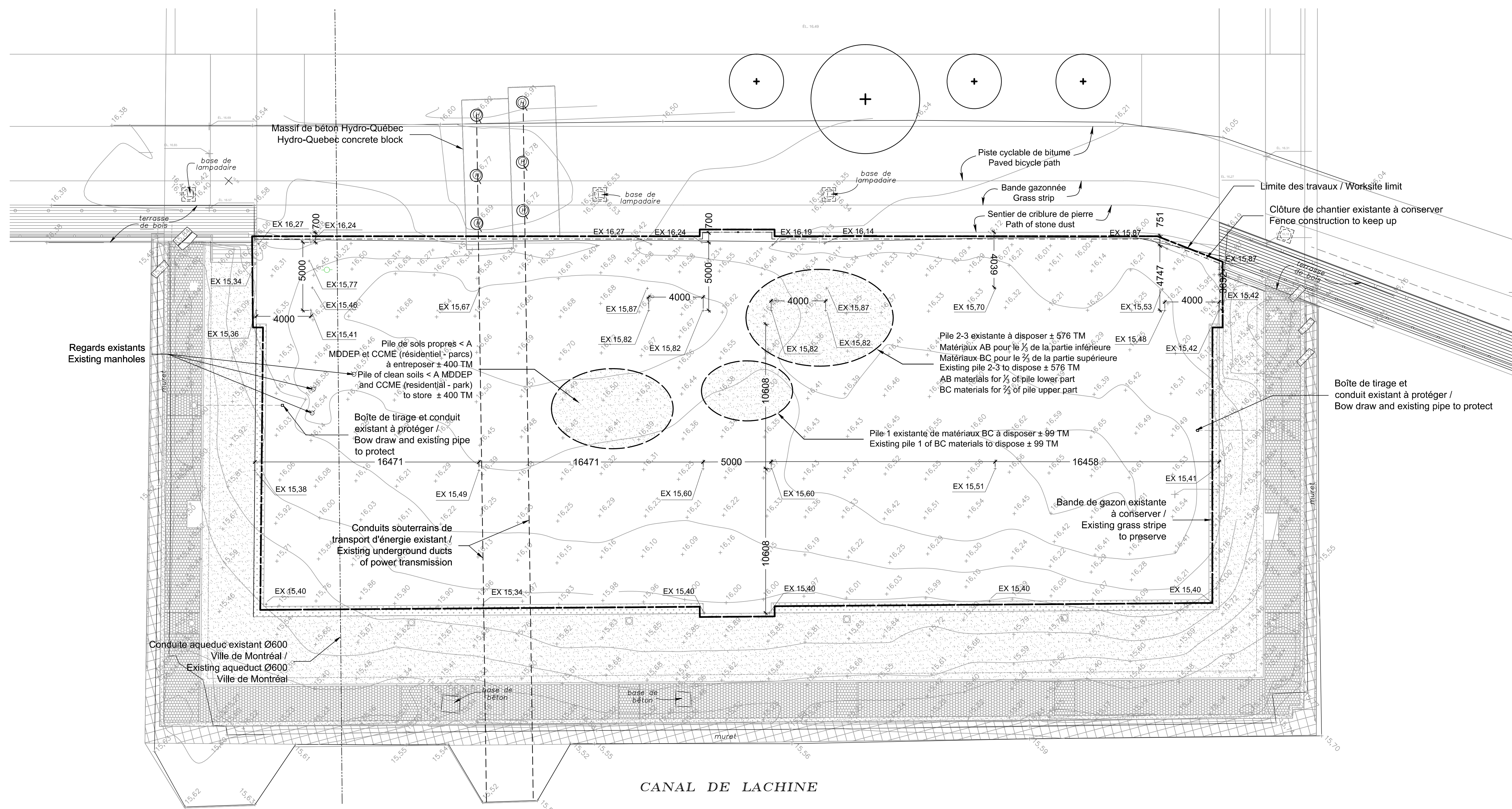
Titre du dessin: Drawing title:

**Lot 1 - Excavation et disposition
des sols contaminés
Part 1 - Excavation and disposal
of contaminated soils**

Date:	2013-07-10	Feuille:	
Échelle:	Scale:	01	

Réf. Consultant:	Ref. Consultant:	Sheet:	
R.057393.100		01	

No de référence:	Reference no
Ministère:	Ministry:
CL-18-182.1	



Plan
ÉCHELLE/SCALE: 1:600

Plan
ÉCHELLE/SCALE: 1:150

AutoCAD / format A1 / S:\S\Parcs\Clients\PARCS CANADA\UG Ouest du Québec\168-LHN CANAL LACHINE\00-Général\BNI\Lot102-Plans\01-Dossier Travaux\Plan_cad\R057393_001-12.dwg

ANNEXE 1 / SCHEDULE 1

Extrait de rapport de caractérisation des sols du site 14.3. /

Extract from report of soil characterization site 14.3 (French version)



Rapport final

CARACTÉRISATION ENVIRONNEMENTALE DE SITE - PHASE III BASSINS 3 ET 4, SECTEUR DU NOUVEAU HAVRE, SITE 14.3, CANAL-DE-LACHINE, MONTRÉAL (ARR. LACHINE), QUÉBEC

Préparé pour

Travaux publics et Services
gouvernementaux Canada
Gare maritime Champlain
901, Cap Diamant
Québec (Québec)
G1K 4K1

Préparé par

Franz Environnement Inc.
825, boulevard Guimond, bureau 120
Longueuil, Québec
J4G 2M7

Rédigé par :

Fabrice Gigli, M.Env.
Chargé de projets

No de projet FRANZ: 1906-1001

16 juillet 2010

Révisé par :

Virginie Renty, ing., ÉESA
Directrice de projets

Distribution: 4 copies à TPSGC, remises à Madame Annie Lessard
1 copie à Franz Environnement Inc.

FG/VR

majoritairement caractérisé par des concentrations en HAP et/ou en métaux de niveau A-B (2 058 m³) et inférieures aux critères A du MDDEP (212 m³)

Parcelle entre les bassins

- Trois forages ont été réalisés directement entre les bassins 3 et 4. Selon ces forages, le profil stratigraphique peut être résumé sous le recouvrement de terre végétale, comme étant un remblai hétérogène de silt, voire localement de sable silteux, avec présence par endroits d'un peu d'argile, de gravier, de morceaux de blocs, et de traces de débris (briques, verre, bois), et ce, jusqu'à la fin des sondages, soit jusqu'à une profondeur de 0,91 m, profondeur maximale atteinte lors des travaux de forage.
- Sept (7) échantillons de sol de surface ont été soumis au laboratoire pour l'analyse des hydrocarbures aromatiques polycycliques, des métaux et du mercure. Selon les résultats obtenus, 5 échantillons sur 7 ont révélé des concentrations en métaux et/ou en HAP supérieures aux recommandations du CCME pour la qualité des sols associées à un usage « résidentiel/parc ». Par ailleurs, à titre informatif, les résultats ont également été comparés avec les critères du MDDEP. Ainsi, 4 échantillons ont révélé des concentrations supérieures aux critères B du MDDEP, voire dans certains cas supérieures aux critères C (un échantillon) ou encore aux critères de l'annexe I du RESC (un échantillon). Enfin, à l'exception du forage FS-7, tous les forages ont présenté au moins un échantillon dont la concentration excédait les critères B du MDDEP ou les recommandations du CCME.
- En considérant les résultats obtenus et ceux tirés des études antérieures, le volume total de sols de surface contaminés au-delà des recommandations associées à l'usage « résidentiel/parc » sur une épaisseur de 0,45 mètre est d'approximativement 1 804 m³. Sur ce volume total, près de la moitié (environ 51 %) des sols renferment des concentrations supérieures aux critères B (879 m³) et supérieures aux critères C du MDDEP (44 m³).



**FRANZ
ENVIRONNEMENT
INC.**

◆ CONSULTATION ◆ INGÉNIERIE ◆ TECHNOLOGIES ◆
Projet No.: 1906-1001

Client: TPSGC

Localisation: Bassins 3 et 4, Secteur 14.3 du Nouveau Havre, Canal-de-Lachine, Qc

Journal de Forage

Niveau de référence: PO-8-14,3-09 (17,15 m)

Élévation de surface: 16,05 m

Élévation du tubage: --

Élévation du produit: --

Élévation de l'eau: --

Forage No: 10FS-5

Diamètre du forage: 20,3 cm

Diamètre du puits: --

Longueur de tubage: --

Longueur de la crépine: --

Ouverture de crépine: --

Prof. puits p/r à la surface:--

Profondeur (m)	PROFIL			ÉCHANTILLON					PUITS	Observations Organoleptiques						Profondeur (m)	
	Stratigraphie	Description des sols (couleur, texture, structure)	Élévation (m)/ Profondeur (m)	Numéros d'échantillons	Type d'échantillons	Coups / 0.15 m "N"	Récupération (%)	COV (ppm)		Analyses chimiques	Olfactives			Visuelles			
											N	L	M	F	N		D
0,0		Surface: Gazon	16,05 0,00														0,0
		REMBLAI : TERRE VÉGÉTALE	15,85 0,20	1	CF	2 8	80	10	H, M, Hg		X			X			
		REMBLAI : BLOCS ET SABLE SILTEUX									X			X			
		REMBLAI : BLOCS ET SABLE SILTEUX brun foncé	15,44 0,61	2	CF	20 20	30	5	--		X			X			
		REMBLAI : SABLE SILTEUX avec blocs et traces de bois	15,14 0,91	3	CF	24 20	50	5	H, M, Hg		X			X			
1,0		Fin du forage															1,0
2,0																	2,0
3,0																	3,0
4,0																	4,0

Foreur: Succ. Forage G Downing Ltée
Méthode: Tarière évidée
Date du forage: 22 juin 2010
Supervisé par: Fabrice Gigli
Véifié par: Virginie Renty

Type d'échantillon
TA: Tarière
CF: Cuillère fendue
CA: Carottage
NA: Ne s'applique pas

Analyses chimiques
H: HAP
V: COV
M: Métaux
HG: Mercure

Observations organoleptiques
Olfactives:
N: Nulle
L: Légère
M: Modérée
F: Forte
Visuelles:
N: Nulle
D: Disseminee
S: Saturée



**FRANZ
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Projet No.: 1906-1001

Client: TPSGC

Localisation: Bassins 3 et 4, Secteur 14.3 du Nouveau Havre, Canal-de-Lachine,

Journal de Forage

Niveau de référence: PO-8-14,3-09 (17,15 m)

Élévation de surface: 15,84 m

Élévation du tubage: --

Élévation du produit: --

Élévation de l'eau: --

Forage No: 10FS-6

Diamètre du forage: 20,3 cm

Diamètre du puits: --

Longueur de tubage: --

Longueur de la crépine: --

Ouverture de crépine: --

Prof. puits p/r à la surface: --

Profondeur (m)	PROFIL			ÉCHANTILLON					PUITS	Observations Organoleptiques						Profondeur (m)	
	Stratigraphie	Description des sols (couleur, texture, structure)	Élévation (m)/ Profondeur (m)	Numéros d'échantillons	Type d'échantillons	Coups / 0.15 m "N"	Récupération (%)	COV (ppm)		Analyses chimiques	Olfactives			Visuelles			
											N	L	M	F	N		D
0,0		Surface: Gazon	15,84														0,0
		REMBLAI : TERRE VÉGÉTALE	0,00														
		REMBLAI : SABLE SILTEUX	15,69														
		0,15	0,15	1	CF	3 5	90	5	H, M, V, Hg	X				X			
		brun clair	15,54														
		REMBLAI : SILT	0,30														
		avec morceaux de verre, de bois et	15,23														
		de brique, brun foncé à noir	0,61														
		REMBLAI : SILT	14,93														
		avec morceaux de verre, de bois,	0,91														
		de brique et de gravier, brun foncé															
		à noir															
1,0		Fin du forage															1,0
2,0																	2,0
3,0																	3,0
4,0																	4,0

Foreur: Succ. Forage G Downing Ltée
Méthode: Tarière évidée
Date du forage: 22 juin 2010
Supervisé par: Fabrice Gigli
Vérifié par: Virginie Renty

Type d'échantillon
TA: Tarière
CF: Cuillère fendue
CA: Carottage
NA: Ne s'applique pas

Analyses chimiques
H: HAP
V: COV
M: Métaux
HG: Mercure

Observations organoleptiques
Olfactives:
N: Nulle
L: Légère
M: Modérée
F: Forte
Visuelles:
N: Nulle
D: Disseminée
S: Saturée



**FRANZ
ENVIRONNEMENT
INC.**

♦ CONSULTATION ♦ INGÉNIERIE ♦ TECHNOLOGIES ♦
Projet No.: 1906-1001

Client: TPSGC

Localisation: Bassins 3 et 4, Secteur 14.3 du Nouveau Havre, Canal-de-Lachine, Qc

Journal de Forage

Niveau de référence: PO-8-14,3-09 (17,15 m)

Élévation de surface: 16,56 m

Élévation du tubage: --

Élévation du produit: --

Élévation de l'eau: --

Forage No: 10FS-7

Diamètre du forage: 20,3 cm

Diamètre du puits: --

Longueur de tubage: --

Longueur de la crépine: --

Ouverture de crépine: --

Prof. puits p/r à la surface:--

Profondeur (m)	PROFIL			ÉCHANTILLON						PUITS	Observations Organoleptiques						Profondeur (m)
	Stratigraphie	Description des sols (couleur, texture, structure)	Élévation (m)/ Profondeur (m)	Numéros d'échantillons	Type d'échantillons	Coups / 0.15 m "N"	Récupération (%)	COV (ppm)	Analyses chimiques		Olfactives			Visuelles			
											N	L	M	F	N	D	
0,0		Surface: Gazon	16,56 0,00														0,0
		REMBLAI : TERRE VÉGÉTALE	16,41 0,15	1	CF	4 7	90	5	H, M, Hg		X			X			
		REMBLAI : SILT avec traces de bois, brun		2	CF	9 8	90	5	H, M, Hg		X			X			
		REMBLAI : SILT ARGILEUX avec blocs, brun/gris	15,95 0,61	3	CF	7 14	20	5	--		X			X			
1,0		Fin du forage	15,65 0,91														1,0
2,0																	2,0
3,0																	3,0
4,0																	4,0

Foreur: Succ. Forage G Downing Ltée
Méthode: Tarière évidée
Date du forage: 22 juin 2010
Supervisé par: Fabrice Gigli
Véifié par: Virginie Renty

Type d'échantillon
TA: Tarière
CF: Cuillère fendue
CA: Carottage
NA: Ne s'applique pas

Analyses chimiques
H: HAP
V: COV
M: Métaux
HG: Mercure

Observations organoleptiques
Olfactives:
N: Nulle
L: Légère
M: Modérée
F: Forte
Visuelles:
N: Nulle
D: Disseminee
S: Saturée

Y : 5 038 625,096. Au niveau des élévations, celles-ci ont été rattachées à un repère de nivellement dont l'élévation est fixée à 17,15 mètres représenté par le niveau du sol au droit du puits d'observation PO-8-14.3-09 effectué par CRA² en 2009.

Tableau B : Coordonnées de la surface au centre de chacun des sondages

Nom du sondage	Coordonnées		
	X	Y	Z (m)
Bassin 3			
10F-7	299906,2428	5038684,4398	16,383
10F-8	299913,2329	5038666,5605	15,962
10F-9	299944,7666	5038678,3833	15,735
10F-10	299924,7765	5038687,5269	16,070
10F-11	299933,8566	5038682,2333	15,840
10F-12	299928,7064	5038668,1161	15,838
10FS-3	299905,6439	5038663,6588	17,082
10FS-4	299945,3475	5038687,9067	15,956
Bassin 4			
10F-1	299811,1003	5038595,2380	17,305
10F-2	299803,9509	5038608,7602	16,496
10F-3	299825,8828	5038599,0653	17,380
10F-4	299822,8840	5038614,8504	16,960
10F-5	299830,3838	5038609,7943	16,965
10F-6	299847,2196	5038595,5506	16,066
10FS-1	299803,3568	5038589,7084	16,740
10FS-2	299840,6809	5038614,9859	16,576
Entre les bassins			
10FS-5	299879,9654	5038625,8480	16,047
10FS-6	299863,3886	5038609,4632	15,835
10FS-7	299851,3913	5038624,4882	16,559

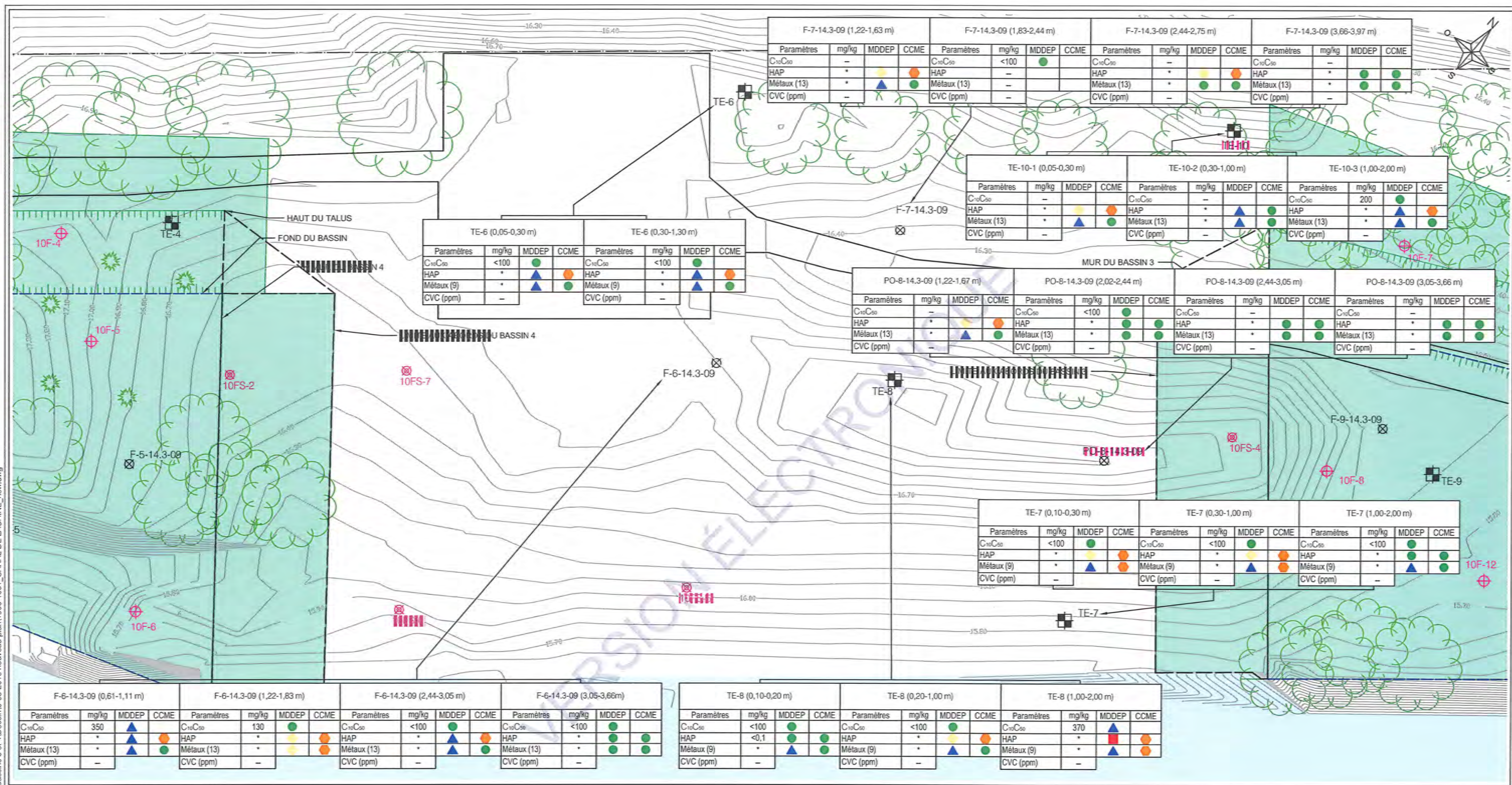
Les élévations mesurées à l'endroit de chacun des forages sont indiquées sur les journaux de sondage inclus à l'annexe 3. Les élévations sont relatives au point de référence arbitraire.

4.4 Synthèse données de terrain

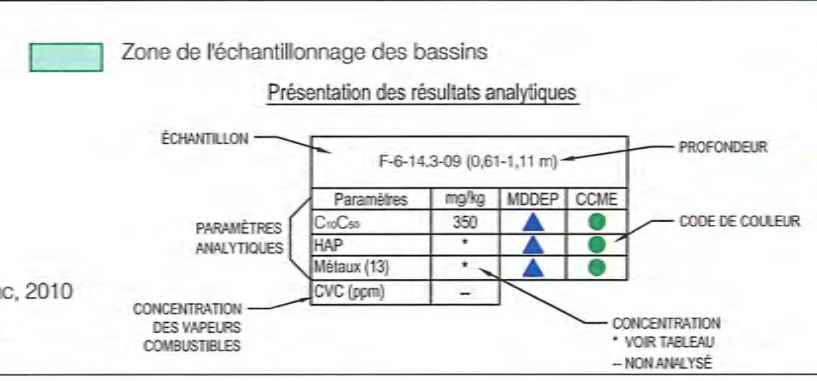
Un tableau récapitulatif des données de terrain recueillies pour chacun des sondages est présenté à la page suivante.

² Conestoga-Rovers & Associés Inc., Évaluation environnementale – Phase 1 et Phase 2, Canal de Lachine, terrain 14.3, N/Ref : R.032945.002 TPSGC, 2009

P:\Projets\STYPS\G1906-1001 Canal Lachine 14.3 Bassins 3 et 4\Dessein\08-2010 nouveau plan\1906-1001_CANAL DE LACHINE_new.dwg



- Légende**
- Limite de propriété
 - Limite du bord l'eau
 - Limite des bassins
 - Limite aux abords du bassin
 - Arbre
 - TE-4 Tranchée, Sanexen, 2001
 - F-6-14.3-09 Forage ou puits, CRA, 2009
 - 10F-6 Forage, Franz Environnement inc, 2010
 - 10FS-2 Forage de surface (2 m), Franz Environnement inc, 2010



- Code de Couleur**
- Teneurs inférieures ou égales aux recommandations résidentielles/parcs du CCME
 - Teneurs supérieures aux recommandations résidentielles/parcs du CCME

- Code de Couleur**
- Teneurs inférieures ou égales aux critères A du MDDEP
 - ▲ Teneurs supérieures aux critères A, mais inférieures ou égales aux critères B du MDDEP
 - Teneurs supérieures aux critères B, mais inférieures ou égales aux critères C du MDDEP
 - Teneurs supérieures aux critères C du MDDEP, mais inférieures ou égales aux valeurs limites du "Règlement sur l'enfouissement des sols contaminés" D843-2001
 - Teneurs supérieures aux valeurs limites du "Règlement sur l'enfouissement des sols contaminés" D843-2001

TITRE: PLAN AGRANDI DU SITE ENTRE LES BASSINS 3 ET 4 ET RÉSULTATS DES ANCIENS TRAVAUX

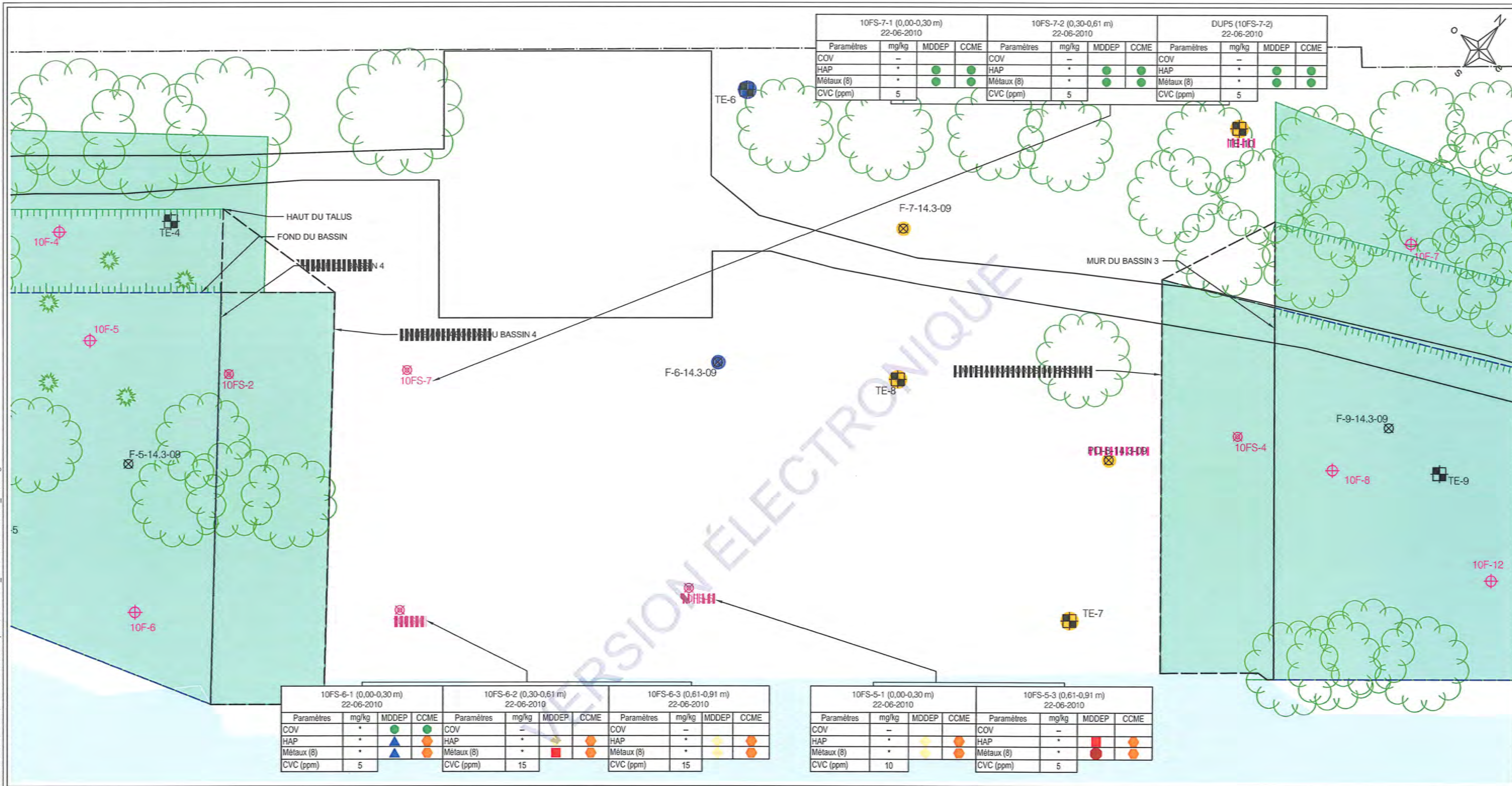
FRANZ ENVIRONNEMENT INC.
CONSULTATION • INGÉNIERIE • TECHNOLOGIES

Date: JUILLET 2010
Dessiné par: I.R.
Revisé par: F.G.
Projet: 1906-1001
Géront projet: V.R.

Projet: CARACTÉRISATION ENVIRONNEMENTALE DE SITE - PHASE III
BASSINS 3 ET 4, SECTEUR 14.3, DU NOUVEAU HAVRE, CANAL-DE-LACHINE, QC
Client: TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA

Échelle 1:300
5 2.5 0 mètres 5 10

FIGURE 2C



- Légende**
- Limite de propriété
 - Limite du bord l'eau
 - Limite des bassins
 - Limite aux abords du bassin
 - Arbre
 - TE-4 Tranchée, Sanexen, 2001
 - F-6-14.3-09 Forage ou puits, CRA, 2009
 - 10F-6 Forage, Franz Environnement inc, 2010
 - 10FS-2 Forage de surface (2 m), Franz Environnement inc, 2010

Présentation des résultats analytiques

ECHANTILLON				PROFONDEUR
10FS-5-3 (0,61-0,91 m)				DATE
22-06-2010				CODE DE COULEUR
Paramètres	mg/kg	MDDEP	CCME	
COV	-	●	●	
HAP	*	●	●	
Métaux (8)	*	●	●	
CVC (ppm)	5			
CONCENTRATION DES VAPEURS COMBUSTIBLES				CONCENTRATION * VOIR TABLEAU -- NON ANALYSÉ

- Code de Couleur**
- Teneurs inférieures ou égales aux recommandations résidentielles/parcs du CCME
 - ▲ Teneurs supérieures aux critères A, mais inférieures ou égales aux critères B du MDDEP
 - Teneurs supérieures aux critères B, mais inférieures ou égales aux critères C du MDDEP
 - Teneurs supérieures aux critères C du MDDEP, mais inférieures ou égales aux valeurs limites du "Règlement sur l'enfouissement des sols contaminés" D843-2001
 - Teneurs supérieures aux valeurs limites du "Règlement sur l'enfouissement des sols contaminés" D843-2001
- Note :** pour les sondages antérieurs effectués en 2001 et 2009 au niveau de la parcelle de terrain située entre les bassins 3 et 4, le niveau de contamination le plus élevé rapporté en regard des critères de la politique du MDDEP, en autant que le degré de contamination dépasse les recommandations du CCME pour usage résidentiel/parc, réfère à la profondeur maximale de nivellement projetée de 0,45 m

- Code de Couleur**
- Teneurs inférieures ou égales aux critères A du MDDEP
 - ▲ Teneurs supérieures aux critères A, mais inférieures ou égales aux critères B du MDDEP
 - Teneurs supérieures aux critères B, mais inférieures ou égales aux critères C du MDDEP
 - Teneurs supérieures aux critères C du MDDEP, mais inférieures ou égales aux valeurs limites du "Règlement sur l'enfouissement des sols contaminés" D843-2001
 - Teneurs supérieures aux valeurs limites du "Règlement sur l'enfouissement des sols contaminés" D843-2001

QUALITÉ ENVIRONNEMENTALE DES SOLS ENTRE LES BASSINS 3 ET 4

FRANZ ENVIRONNEMENT INC.
CONSULTATION • INGÉNIERIE • TECHNOLOGIES

Date: JUILLET 2010
Dessiné par: I.R.
Revisé par: F.G.
Projet: 1906-1001
Gérant projet: V.R.

Projet: CARACTÉRISATION ENVIRONNEMENTALE DE SITE - PHASE III BASSINS 3 ET 4, SECTEUR 14.3, DU NOUVEAU HAVRE, CANAL-DE-LACHINE, QC

Client: TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA

Échelle 1:300

5 2.5 0 mètres 5 10

FIGURE 3C

Tableau 3: Résultats analytiques - Échantillons de sol prélevés à l'endroit des forages effectués entre les bassins 3 et 4 (mg/kg)

TPSGC - Caractérisation environnementale Phase III - Bassins 3 et 4, secteur 14.3 du nouveau havre, Canal-de-Lachine (Qc)

No projet : 1906-1001

Date Nom (Profondeur, m)	Critères du MDDEP ¹			RESC ²	Recommandations du CCME ^{3,4,5,6} Résidentielle/ Parc	21-juin-10 10F-2-1 0,00-0,61	21-juin-10 10F-2-2 0,61-1,22	21-juin-10 10F-2-3 1,22-1,65	22-juin-10 10F-7-1 0,00-0,61	22-juin-10 10F-7-2 0,61-1,22	22-juin-10 DUP3 Duplicata de 10F-7-2	22-juin-10 10F-7-5 2,44-2,72	22-juin-10 10FS-5-1 0,00-0,30	22-juin-10 10FS-5-3 0,61-0,91	22-juin-10 10FS-6-1 0,00-0,30	22-juin-10 10FS-6-2 0,30-0,61	22-juin-10 10FS-6-3 0,61-0,91	22-juin-10 10FS-7-1 0,00-0,30	22-juin-10 10FS-7-2 0,30-0,61	22-juin-10 DUP5 Duplicata de 10FS-7-2	
	Paramètres	A	B																		C
COMPOSÉS ORGANIQUES VOLATILS																					
Benzène	0,1	0,5	5	5	0,03	0,0068	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzène	0,2	1	10	10	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzène	0,2	1	10	10	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzène	0,2	1	10	10	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzène	0,2	1	10	10	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzène	0,2	3	50	50	0,082	0,018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrène	0,2	5	50	50	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluène	0,2	5	30	30	0,37	0,08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylènes Totaux	0,2	5	50	50	11	2,4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroforme	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorure de vinyle	0,4	0,4	0,4	0,4	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroéthane	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroéthane	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroéthylène	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroéthylène (cis+trans)	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorométhane	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane (cis+trans)	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tétrachloroéthane	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tétrachloroéthylène	0,2	5	50	50	0,2	0,2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tétrachlorure de carbone	0,1	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroéthane	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroéthane	0,2	5	50	50	5	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichloroéthylène	0,2	5	50	50	0,1	0,1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HYDROCARBURES AROMATIQUES POLYCYCLIQUES																					
Acénaphthène	0,1	10	100	100	-	-	0,1	<0,1	<0,1	<0,1	<0,1	0,1	<0,1	<0,1	5,5	<0,1	0,1	<0,1	<0,1	<0,1	<0,1
Acénaphthylène	0,1	10	100	100	-	-	<0,1	0,1	<0,1	<0,1	0,2	0,2	<0,1	<0,1	0,8	<0,1	0,4	0,2	<0,1	<0,1	<0,1
Anthracène	0,1	10	100	100	2,5	2,5	0,3	0,3	0,2	<0,1	0,5	0,6	<0,1	0,2	25	0,2	0,4	0,2	<0,1	<0,1	<0,1
Benzo(a)anthracène	0,1	1	10	34	1	1	0,8	1,1	0,5	0,2	2,3	3,5	<0,1	0,5	33	0,5	0,8	0,4	<0,1	<0,1	<0,1
Benzo(a)pyrène	0,1	1	10	34	20	20	0,7	1,1	0,5	0,1	2,2	2,3	<0,1	0,6	27	0,5	1,7	1,1	<0,1	<0,1	<0,1
Benzo(b,j,k)fluoranthène	0,1	1	10	136	1	1	1,3	1,9	0,9	0,3	3,8	4,1	<0,1	1,1	47	0,9	2,6	1,5	0,2	0,1	<0,1
Benzo(c)phénanthrène	0,1	1	10	56	-	-	0,1	0,2	<0,1	<0,1	0,3	0,4	<0,1	<0,1	4,6	<0,1	0,1	<0,1	<0,1	<0,1	<0,1
Benzo(g,h,i)pyrénylène	0,1	1	10	18	-	-	0,4	0,6	0,2	<0,1	1,3	1,3	<0,1	0,4	14	0,3	1,5	0,9	<0,1	<0,1	<0,1
Chrysène	0,1	1	10	34	-	-	0,8	1,1	0,5	0,2	2,2	2,5	<0,1	0,5	28	0,4	1,0	0,5	<0,1	<0,1	<0,1
Dibenzo(a,h)anthracène	0,1	1	10	82	1	1	0,1	0,2	<0,1	<0,1	0,4	0,4	<0,1	<0,1	5,1	<0,1	0,3	0,2	<0,1	<0,1	<0,1
Dibenzo(a,i)pyrène	0,1	1	10	34	-	-	<0,1	<0,1	<0,1	<0,1	0,2	0,2	<0,1	<0,1	2,4	<0,1	0,2	<0,1	<0,1	<0,1	<0,1
Dibenzo(a,j)pyrène	0,1	1	10	34	-	-	<0,1	<0,1	<0,1	<0,1	0,1	0,1	<0,1	<0,1	1,2	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Dibenzo(a,l)pyrène	0,1	1	10	34	-	-	0,2	0,3	0,1	<0,1	0,6	0,5	<0,1	0,2	7,5	0,1	0,5	0,2	<0,1	<0,1	<0,1
7,12-Diméthylbenzo(a)anthracène	0,1	1	10	34	-	-	<0,1	<0,1	<0,1	<0,1	0,1	0,1	<0,1	<0,1	0,6	<0,1	0,1	<0,1	<0,1	<0,1	<0,1
Fluoranthène	0,1	10	100	100	50	50	1,6	2,1	1,1	0,4	3,7	4,2	<0,1	1,3	75	1,1	1,7	0,6	0,1	0,1	<0,1
Fluorène	0,1	10	100	100	-	-	0,1	<0,1	<0,1	<0,1	0,1	0,1	<0,1	<0,1	11	<0,1	0,1	<0,1	<0,1	<0,1	<0,1
Indeno(1,2,3-cd)pyrène	0,1	1	10	34	1	1	0,3	0,5	0,2	<0,1	1,2	1,2	<0,1	0,3	14	0,3	0,9	0,5	<0,1	<0,1	<0,1
3-Méthylcholanthrène	0,1	1	10	150	-	-	<0,1	<0,1	<0,1	<0,1	0,1	0,1	<0,1	<0,1	0,2	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Naphthalène	0,1	5	50	56	0,013	0,013	0,1	0,1	<0,1	<0,1	0,1	0,2	<0,1	<0,1	1,4	<0,1	0,1	<0,1	<0,1	<0,1	<0,1
Phénanthrène	0,1	5	50	56	0,045	0,045	1,1	1,3	0,8	0,3	1,6	2,1	<0,1	0,6	7,1	0,4	1,4	0,4	<0,1	<0,1	<0,1
Pyrène	0,1	10	100	100	10	10	1,4	1,9	1,0	0,3	3,5	4,0	<0,1	1,0	57	0,9	1,6	0,7	0,1	0,1	<0,1
Méthyl-2-Naphtalène	0,1	1	10	56	-	-	0,1	0,1	<0,1	<0,1	0,1	0,2	<0,1	<0,1	1,2	<0,1	0,1	<0,1	<0,1	<0,1	<0,1
Méthyl-1-Naphtalène	0,1	1	10	56	-	-	<0,1	0,1	<0,1	<0,1	0,1	0,2	<0,1	<0,1	1,0	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Diméthyl-1,3-Naphtalène	0,1	1	10	56	-	-	<0,1	0,1	<0,1	<0,1	0,2	0,2	<0,1	<0,1	0,8	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Triméthyl-2,3,5-Naphtalène	0,1	1	10	56	-	-	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	0,3	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Facteur d'équivalence de toxicité (FET)	-	-	-	-	5,3	5,3	1,052	1,667	0,667	0,152	3,365	3,518	0	0,799	41,92	0,677	2,455	1,554	0,02	0,01	0
MÉTAUX																					
Mercuré (Hg)	0,2	2	10	50	6,6	6,6	0,09	0,12	0,05	0,03	0,11	0,1	0,05	0,03	0,36	<0,02	0,24	0,07	0,03	0,04	0,05
Arsenic (As)	6	30	50	250	12	12	9	10	8	8	16	15	7	<5	40	<5	110	18	<5	<5	<5
Cadmium (Cd)	1,5	5	20	100	10	10	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	1,3	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5
Chrome (Cr)	85	250	800	4000	64	64	14	14	14	15	15	13	12	14	11	13	13	14	33	34	40
Cuivre (Cu)	40	100	500	2500	63	63	49	45	30	40	51	42	19	370	56000	92	49	290	20	17	23
Nickel (Ni)	50	100	500	2500	50	50	20	19	26	25	24	20	13	19	14	19	13	14	18	17	23
Piomb (Pb)	50	500	1000	5000	140	140	62	440	34	25	130	86	19	75	510	28	140	190	22	20	27
Zinc (Zn)	110	500	1500	7500	200	200	110	94	91	150	160	170	59	160	550	110	130	85	75	55	79

- : Aucun critère
- : Non analysé
- 1: Politique de protection des sols et de réhabilitation des terrains contaminés, 1998 (révisée en novembre 2001 du ministère de l'Environnement du Québec)
- 2: Valeurs limites du «Règlement sur l'enfouissement des sols contaminés» D843-2001
- 3: Recommandations canadiennes pour la qualité des sols: Environnement et santé humaine (Mise à jour 7,0, septembre 2007)
- 4: Recommandations canadiennes pour la qualité des sols - protection de l'environnement pour les HAP cancérogènes et non cancérogènes (2010)
- 5: Recommandations canadiennes pour la qualité des sols - protection de la santé humaine pour les HAP cancérogènes et non cancérogènes (2010), fondées sur un risque de cancer

Annexe / Schedule II

Certificat d'analyse M770345 des piles 1 et 2-3

Certificate of analysis M770345 for piles 1 and 2-3



SM

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Certificat d'analyse

No M770345, version 1

Émis le: 2013-07-25

Client: **PARCS CANADA**
Mme Karine Lalonde
1899, Boul. De Périgny
Chambly, Québec
J3L 4C3

No client: 2025
Tél.: 450-447-4838
Télé.: 450-658-2428
No projet: 17240
Bon de commande: 54967-4111-30023881
No dossier MDDEP:

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002
Sous-projet: Sols

Nature de l'échantillon: Sol

No éch.	Description	Résultat	Unité	Norme	Analysé le
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Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989537	/ Pile 1-1						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	11.5	%				2013-07-24
	Mercure (Hg)	0.45	mg/Kg	A=0.2	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphène	1.76	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	0.70	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Anthracène	3.13	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Benzo (a) anthracène	4.39	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (a) pyrène	3.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	1.77	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Somme)	5.42	mg/Kg	A=0.1	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	0.86	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	1.67	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Chrysène	4.45	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	0.62	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	0.26	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<0.75	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	0.76	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	14.0	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Fluorène	1.91	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	1.42	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	1.35	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	1.86	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	5.04	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	14.3	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Pyrène	11.6	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	0.21	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	% de récupération des étalons analogues	-	-				2013-07-24
	<i>d10-acénaphène</i>	91	%				2013-07-24
	<i>d10-phénanthrène</i>	87	%				2013-07-24
	<i>d12-Benzo[ghi]pérylène</i>	70	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	26.6	mg/Kg	A=6	B=30	C=50	2013-07-24
	Cuivre (Cu)	58	mg/Kg	A=40	B=100	C=500	2013-07-24
	Plomb (Pb)	165	mg/Kg	A=50	B=500	C=1000	2013-07-24
	Zinc (Zn)	124	mg/Kg	A=110	B=500	C=1500	2013-07-24

- L'interprétation des critères est spécifiée à titre indicatif seulement.

- Ce certificat ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite des Laboratoires d'analyses S.M. inc.

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

- (PNA) indique un Paramètre Non Accrédité.



Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989538	/ Pile 1-2						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	9.6	%				2013-07-24
	Mercure (Hg)	0.23	mg/Kg	A=0.2	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphène	0.15	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	0.14	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Anthracène	0.51	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Benzo (a) anthracène	1.36	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (a) pyrène	1.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	0.56	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Somme)	1.90	mg/Kg	A=0.1	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	0.21	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	0.72	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Chrysène	1.22	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	0.25	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	0.13	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<0.50	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	2.24	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Fluorène	0.24	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	0.59	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	<0.10	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	1.71	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Pyrène	1.96	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	% de récupération des étalons analogues	-	-				2013-07-24
	d10-acénaphène	90	%				2013-07-24
	d10-phénanthrène	84	%				2013-07-24
	d12-Benzo[ghi]pérylène	70	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	20.4	mg/Kg	A=6	B=30	C=50	2013-07-24
	Cuivre (Cu)	45	mg/Kg	A=40	B=100	C=500	2013-07-24
	Plomb (Pb)	236	mg/Kg	A=50	B=500	C=1000	2013-07-24
	Zinc (Zn)	96	mg/Kg	A=110	B=500	C=1500	2013-07-24

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Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989540	/ Pile 1-3						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	10.2	%				2013-07-24
	Mercure (Hg)	0.34	mg/Kg	A=0.2	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphène	0.67	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	0.21	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Anthracène	2.57	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Benzo (a) anthracène	3.08	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (a) pyrène	2.21	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	1.09	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Somme)	3.68	mg/Kg	A=0.1	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	0.50	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	1.37	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Chrysène	2.64	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	0.43	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	0.25	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<0.75	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	0.30	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	6.31	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Fluorène	1.42	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	1.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	0.37	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	0.40	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	0.46	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	10.2	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Pyrène	5.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	% de récupération des étalons analogues	-	-				2013-07-24
	<i>d10-acénaphène</i>	92	%				2013-07-24
	<i>d10-phénanthrène</i>	88	%				2013-07-24
	<i>d12-Benzo[ghi]pérylène</i>	76	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	23.3	mg/Kg	A=6	B=30	C=50	2013-07-24
	Cuivre (Cu)	49	mg/Kg	A=40	B=100	C=500	2013-07-24
	Plomb (Pb)	139	mg/Kg	A=50	B=500	C=1000	2013-07-24
	Zinc (Zn)	113	mg/Kg	A=110	B=500	C=1500	2013-07-24

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Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989541	/ Pile 2-1						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	9.4	%				2013-07-24
	Mercure (Hg)	<0.20	mg/Kg	A=0.2	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphthène	0.15	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	0.13	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Anthracène	0.37	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Benzo (a) anthracène	1.05	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (a) pyrène	0.74	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	0.40	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Somme)	1.36	mg/Kg	A=0.1	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	0.16	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	0.40	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Chrysène	0.90	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	0.13	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	<0.25	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<0.50	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	1.95	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Fluorène	0.19	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	0.37	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	0.12	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	0.14	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	1.50	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Pyrène	1.73	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	<u>% de récupération des étalons analogues</u>	-	-				2013-07-24
	<i>d10-acénaphthène</i>	92	%				2013-07-24
	<i>d10-phénanthrène</i>	86	%				2013-07-24
	<i>d12-Benzo[ghi]pérylène</i>	75	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	8.8	mg/Kg	A=6	B=30	C=50	2013-07-24
	Cuivre (Cu)	44	mg/Kg	A=40	B=100	C=500	2013-07-24
	Plomb (Pb)	83	mg/Kg	A=50	B=500	C=1000	2013-07-24
	Zinc (Zn)	126	mg/Kg	A=110	B=500	C=1500	2013-07-24

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Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989542	/ Pile 2-2						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	11.2	%				2013-07-24
	Mercure (Hg)	0.21	mg/Kg	A=0.2	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Anthracène	0.11	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Benzo (a) anthracène	0.47	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (a) pyrène	0.39	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	0.16	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Sommmation)	0.70	mg/Kg	A=0.1	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	0.26	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Chrysène	0.42	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<0.25	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	0.67	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Fluorène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	0.22	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	<0.10	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	0.29	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Pyrène	0.64	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	<u>% de récupération des étalons analogues</u>	-	-				2013-07-24
	<i>d10-acénaphène</i>	89	%				2013-07-24
	<i>d10-phénanthrène</i>	82	%				2013-07-24
	<i>d12-Benzo[ghi]pérylène</i>	71	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	14.5	mg/Kg	A=6	B=30	C=50	2013-07-24
	Cuivre (Cu)	51	mg/Kg	A=40	B=100	C=500	2013-07-24
	Plomb (Pb)	93	mg/Kg	A=50	B=500	C=1000	2013-07-24
	Zinc (Zn)	123	mg/Kg	A=110	B=500	C=1500	2013-07-24

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Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989543	/ Pile 2-3						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	10.9	%				2013-07-24
	Mercure (Hg)	<0.20	mg/Kg	A=0.2	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Anthracène	0.12	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Benzo (a) anthracène	0.37	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (a) pyrène	0.30	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	0.14	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Somme)	0.55	mg/Kg	A=0.1	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	0.20	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Chrysène	0.31	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	0.58	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Fluorène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	0.18	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	<0.10	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	0.30	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Pyrène	0.55	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	<u>% de récupération des étalons analogues</u>	-	-				2013-07-24
	d10-acénaphène	93	%				2013-07-24
	d10-phénanthrène	86	%				2013-07-24
	d12-Benzo[ghi]pérylène	77	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	7.8	mg/Kg	A=6	B=30	C=50	2013-07-24
	Cuivre (Cu)	37	mg/Kg	A=40	B=100	C=500	2013-07-24
	Plomb (Pb)	53	mg/Kg	A=50	B=500	C=1000	2013-07-24
	Zinc (Zn)	80	mg/Kg	A=110	B=500	C=1500	2013-07-24

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Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989545	/ Pile 3-1						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	11.2	%				2013-07-24
	Mercure (Hg)	<0.20	mg/Kg	A=0.2	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphène	0.13	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	0.18	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Anthracène	0.34	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Benzo (a) anthracène	1.19	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (a) pyrène	0.94	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	0.49	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Somme)	1.66	mg/Kg	A=0.1	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	0.14	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	0.59	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Chrysène	0.93	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	0.20	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	<0.25	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<0.50	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	1.82	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Fluorène	0.14	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	0.55	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	<0.10	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	1.10	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Pyrène	1.60	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	<u>% de récupération des étalons analogues</u>	-	-				2013-07-24
	<i>d10-acénaphène</i>	93	%				2013-07-24
	<i>d10-phénanthrène</i>	87	%				2013-07-24
	<i>d12-Benzo[ghi]pérylène</i>	77	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	17.5	mg/Kg	A=6	B=30	C=50	2013-07-24
	Cuivre (Cu)	55	mg/Kg	A=40	B=100	C=500	2013-07-24
	Plomb (Pb)	143	mg/Kg	A=50	B=500	C=1000	2013-07-24
	Zinc (Zn)	133	mg/Kg	A=110	B=500	C=1500	2013-07-24

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Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989546	/ Pile 3-2						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	12.1	%				2013-07-24
	Mercure (Hg)	0.33	mg/Kg	A=0.2	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	0.19	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Anthracène	0.23	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Benzo (a) anthracène	1.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (a) pyrène	0.89	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	N/A	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	0.47	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Somme)	1.60	mg/Kg	A=0.1	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	0.15	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	0.55	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Chrysène	0.89	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	0.16	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<0.25	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	1.47	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Fluorène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	0.47	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	<0.10	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	0.56	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Pyrène	1.32	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	<u>% de récupération des étalons analogues</u>	-	-				2013-07-24
	<i>d10-acénaphène</i>	94	%				2013-07-24
	<i>d10-phénanthrène</i>	87	%				2013-07-24
	<i>d12-Benzo[ghi]pérylène</i>	71	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	21.3	mg/Kg	A=6	B=30	C=50	2013-07-24
	Cuivre (Cu)	50	mg/Kg	A=40	B=100	C=500	2013-07-24
	Plomb (Pb)	193	mg/Kg	A=50	B=500	C=1000	2013-07-24
	Zinc (Zn)	134	mg/Kg	A=110	B=500	C=1500	2013-07-24

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Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Projet: Bassin du nouveau Havre-CLAC-KL-2013-002

Nature de l'échantillon: Sol

Sous-projet: Sols

No éch.	Description	Résultat	Unité	Norme			Analysé le
1989547	/ Pile 3-3						
	Prélevé le: 2013-07-17	Par: K.Lalonde/A.Beaudet	Reçu le: 2013-07-17				
	Pourcentage d'humidité	10.8	%				2013-07-24
	Mercure (Hg)	<u>0.23</u>	mg/Kg	<u>A=0.2</u>	B=2	C=10	2013-07-24
	HAP	-	-				2013-07-24
	Acénaphène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Acénaphthylène	<u>0.13</u>	mg/Kg	<u>A=0.1</u>	B=10	C=100	2013-07-24
	Anthracène	<u>0.17</u>	mg/Kg	<u>A=0.1</u>	B=10	C=100	2013-07-24
	Benzo (a) anthracène	<u>0.69</u>	mg/Kg	<u>A=0.1</u>	B=1	C=10	2013-07-24
	Benzo (a) pyrène	<u>0.54</u>	mg/Kg	<u>A=0.1</u>	B=1	C=10	2013-07-24
	benzo (b) fluoranthène	<u>N/A</u>	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	benzo(j)fluoranthène	<u>N/A</u>	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo [k] fluoranthène	<u>0.28</u>	mg/Kg	<u>A=0.1</u>	B=1	C=10	2013-07-24
	Benzo (bjk) fluoranthène (Somme)	<u>0.99</u>	mg/Kg	<u>A=0.1</u>	B=1	C=10	D=136 2013-07-24
	Benzo (c) phénanthrène	0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Benzo (g,h,i) pérylène	<u>0.34</u>	mg/Kg	<u>A=0.1</u>	B=1	C=10	2013-07-24
	Chrysène	<u>0.54</u>	mg/Kg	<u>A=0.1</u>	B=1	C=10	2013-07-24
	Dibenzo (a,h) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,h) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,i) pyrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Dibenzo (a,l) pyrène	<u><0.25</u>	mg/Kg	<u>A=0.1</u>	B=1	C=10	2013-07-24
	Diméthyl-1,3 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Diméthyl-7,12 benzo (a) anthracène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Fluoranthène	<u>1.03</u>	mg/Kg	<u>A=0.1</u>	B=10	C=100	2013-07-24
	Fluorène	<0.10	mg/Kg	A=0.1	B=10	C=100	2013-07-24
	Indéno (1,2,3-cd) pyrène	<u>0.32</u>	mg/Kg	<u>A=0.1</u>	B=1	C=10	2013-07-24
	Méthyl-1 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-2 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Méthyl-3 cholanthrène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	Naphthalène	<0.10	mg/Kg	A=0.1	B=5	C=50	2013-07-24
	Phénanthrène	<u>0.48</u>	mg/Kg	<u>A=0.1</u>	B=5	C=50	2013-07-24
	Pyrène	<u>0.93</u>	mg/Kg	<u>A=0.1</u>	B=10	C=100	2013-07-24
	Triméthyl-2,3,5 naphthalène	<0.10	mg/Kg	A=0.1	B=1	C=10	2013-07-24
	<u>% de récupération des étalons analogues</u>	-	-				2013-07-24
	<i>d10-acénaphène</i>	90	%				2013-07-24
	<i>d10-phénanthrène</i>	83	%				2013-07-24
	<i>d12-Benzo[ghi]pérylène</i>	71	%				2013-07-24
	Métaux	-	-				2013-07-24
	Arsenic (As)	<u>14.8</u>	mg/Kg	<u>A=6</u>	B=30	C=50	2013-07-24
	Cuivre (Cu)	<u>48</u>	mg/Kg	<u>A=40</u>	B=100	C=500	2013-07-24
	Plomb (Pb)	<u>143</u>	mg/Kg	<u>A=50</u>	B=500	C=1000	2013-07-24
	Zinc (Zn)	<u>118</u>	mg/Kg	<u>A=110</u>	B=500	C=1500	2013-07-24

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**SM**LABORATOIRES
D'ANALYSES
S.M. INC.


Certificat d'analyse (suite)

No M770345, version 1

Émis le: 2013-07-25

Méthode d'analyse	Description	Référence externe	Procédure interne
Balayage de métaux par ICPMS	Digestion et ICPMS	MA.200-Mét 1.1	ILCE-069
Hydrocarbures Aromatiques Polycycliques (HAP)	GCMS	MA.400 - HAP 1.1	ILCE-061
Mercure	Digestion acide, vapeur froide et dosage AA	MA.200-Hg 1.0; EPA 245.6	ILCE-032
Humidité / siccité	Gravimétrie	MENVIQ.90.05/210 Met. 1.2	ILCE-030


 France Luneau, Chimiste, chargée de projet




 Denise Arbic, Chimiste, Chef de service

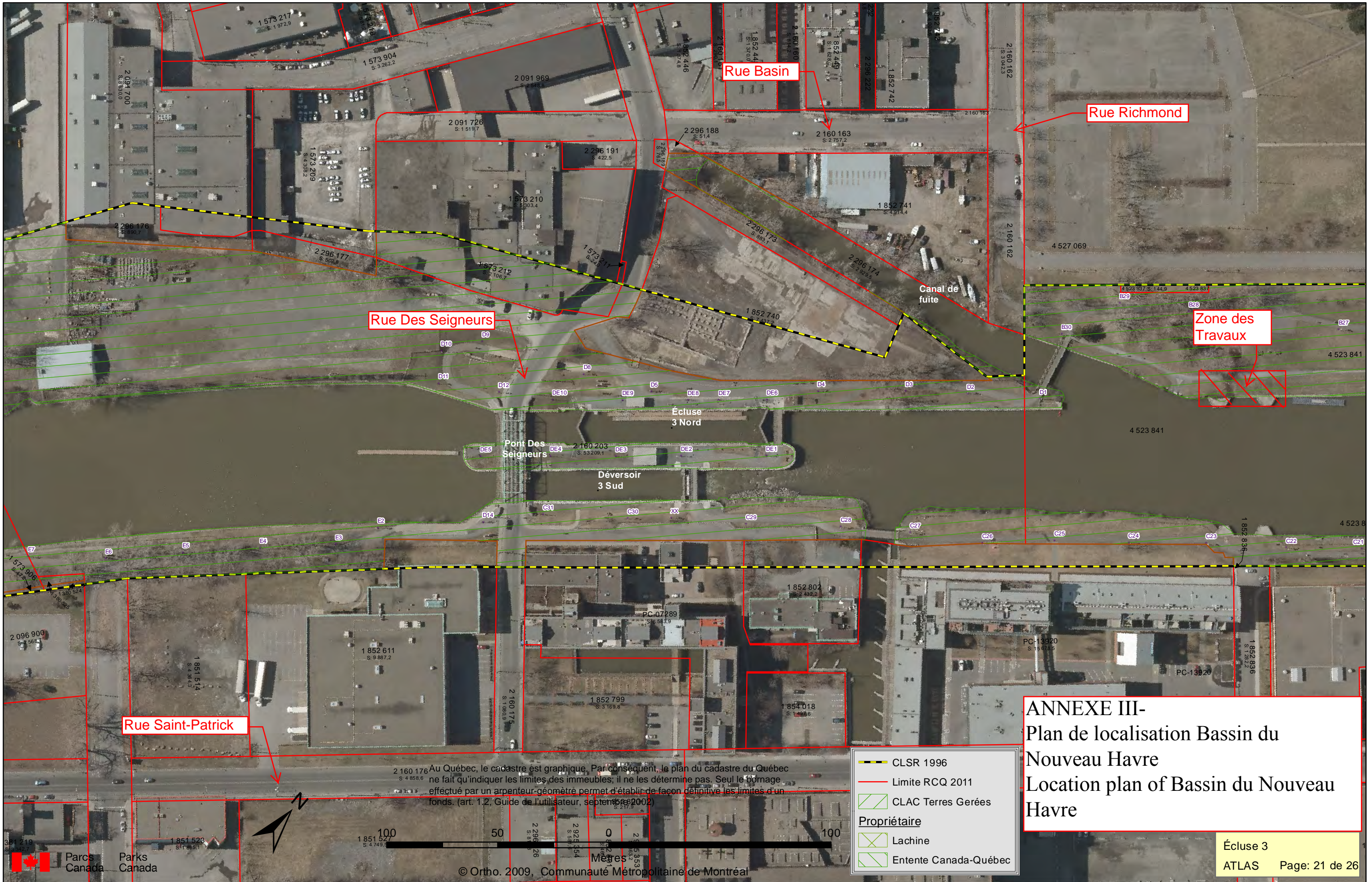


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Annexe / Schedule III

Plan de localisation Bassin du Nouveau Havre

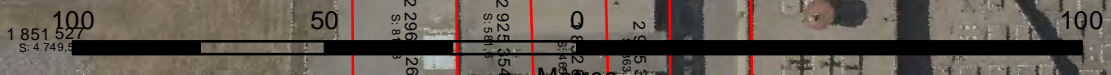
Location plan of Bassin du Nouveau Havre



ANNEXE III-
Plan de localisation Bassin du
Nouveau Havre
Location plan of Bassin du Nouveau
Havre

Au Québec, le cadastre est graphique. Par conséquent, le plan du cadastre du Québec ne fait qu'indiquer les limites des immeubles; il ne les détermine pas. Seul le bornage effectué par un arpenteur-géomètre permet d'établir de façon définitive les limites d'un fonds. (art. 1.2, Guide de l'utilisateur, septembre 2002)

- CLSR 1996
- Limite RCQ 2011
- CLAC Terres Gerées
- Propriétaire**
- Lachine
- Entente Canada-Québec

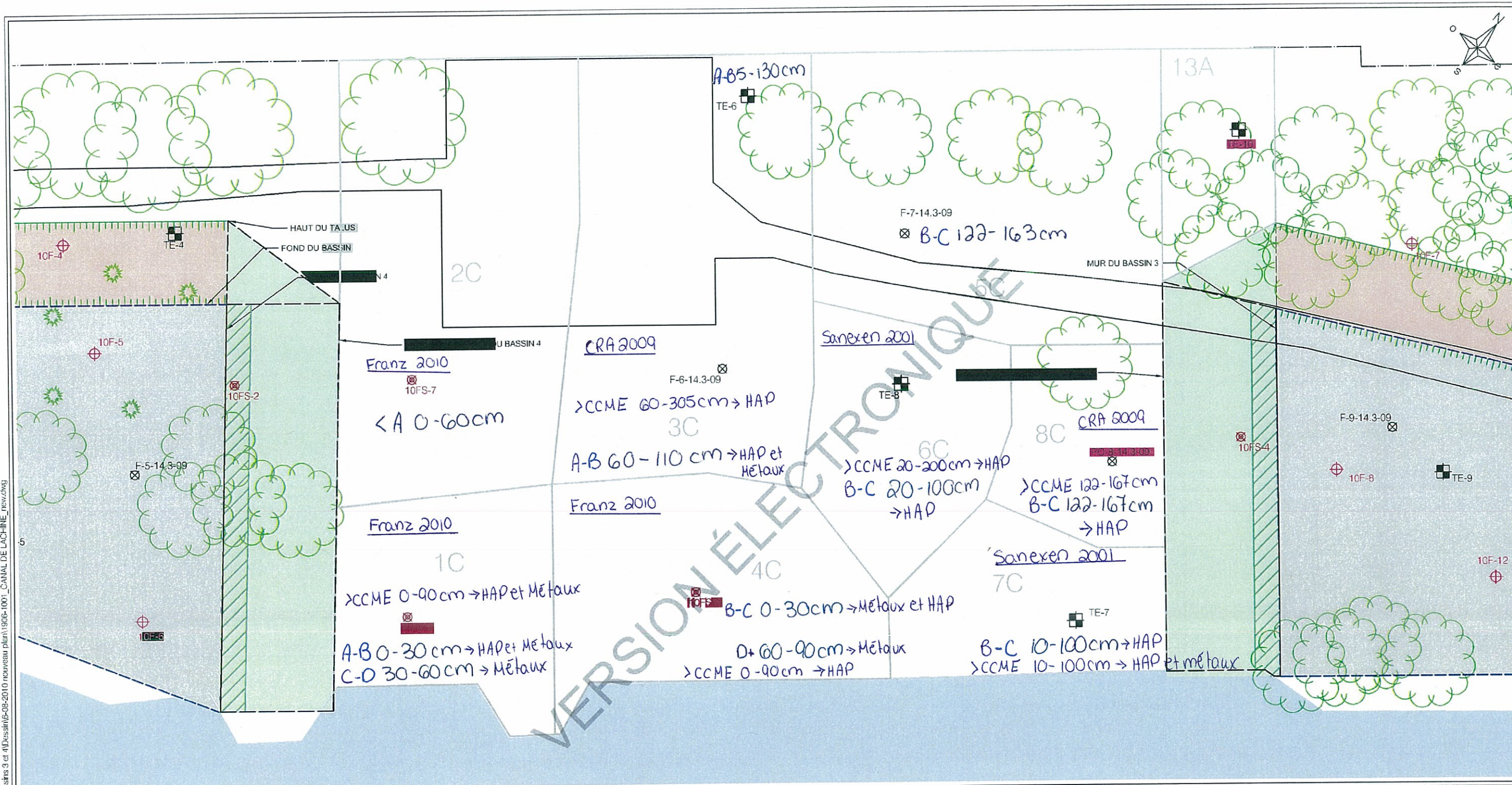


Annexe / Schedule IV

Polygones - Zones à excaver entre les bassins 3 et 4

Polygons – Areas to excavate between basins 3 and 4

P:\Projets\STVPSGC\1906-1001 Canal Lachine 14.3 Bassins 3 et 4\Dessein\5-08-2010 nouveau plan\1906-1001_CANAL DE LACHINE_rev1.dwg



- Légende**
- Limite de propriété
 - Limite du bord l'eau
 - Limite des bassins
 - Limite aux abords du bassin
 - Arbre
 - TE-4 Tranchée, Sanexen, 2001
 - F-6-14.3-09 Forage ou puits, CRA, 2009
 - 10F-6 Forage, Franz Environnement inc, 2010
 - 10FS-2 Forage de surface (2 m), Franz Environnement inc, 2010
 - Zone de l'aménagement du bassin
 - Zone de nivellement des pentes autour du bassin
 - Zone de talus
 - Zone d'excavation derrière les murs pour les ancrages
 - Limite des polygones

1C Nom du polygone

ANNEXE IV -
Polygones - Zones à excaver entre les bassins 3 et 4
Polygons - Areas to excavate between basins 3 and 4

Titre: POLYGONES - ZONES À EXCAVER ENTRE LES BASSINS 3 ET 4

FRANZ ENVIRONNEMENT INC.
 CONSULTATION • INGÉNIERIE • TECHNOLOGIES

Date: JUILLET 2010
 Dessiné par: I.R.
 Revisé par: F.G.
 Projet: 1906-1001
 Client: TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA

Échelle 1:300

5 2.5 0 metres 5 10

FIGURE 4C