



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 79-2018**

**PROVISION OF LABORATORY SERVICES FOR LANDFILLS**

**Note to Bidders: Please be aware of revisions to B13.4**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 PROVISION OF LABORATORY SERVICES FOR LANDFILLS

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, April 5, 2018.

B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

### **B3. SITE INVESTIGATION**

B3.1 Further to C3.1, the Bidder may make an appointment to view the Site by contacting the Contract Administrator.

B3.2 The Bidder is advised that samples to be analysed will originate from any of the thirty three (33) closed landfills, and Brady Road Resource Management Facility.

B3.3 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

### **B4. ENQUIRIES**

B4.1 All enquiries shall be directed to the Contract Administrator identified in D5.1.

B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall promptly notify the Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B4.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B4.5 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B4.6 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

### **B5. CONFIDENTIALITY**

B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

(a) was known to the Bidder before receipt hereof; or

- (b) becomes publicly known other than through the Bidder; or
- (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

## **B6. ADDENDA**

B6.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B6.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B6.3 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

B6.4 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B6.5 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

## **B7. SUBSTITUTES**

B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.

B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.

B7.4 The Bidder shall ensure that any and all requests for approval of a substitute:

- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
- (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
- (c) identify any anticipated cost or time savings that may be associated with the substitute;
- (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract;
- (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract.

- B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.
- B7.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.
- B7.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B7.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B16.
- B7.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

## **B8. BID SUBMISSION**

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
  - (b) Form B: Prices.
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely.
- B8.4 The Bid may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B8.5 If the Bid is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg  
Corporate Finance Department  
Materials Management Division  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1
- B8.5.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B8.6 If the Bid is submitted by facsimile transmission, it shall be submitted to 204-949-1178
- B8.6.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B8.7 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.

B8.8 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B16.1(a).

B8.9 Bids submitted by internet electronic mail (e-mail) will not be accepted.

**B9. BID**

B9.1 The Bidder shall complete Form A: Bid, making all required entries.

B9.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
- (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
- (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.

B9.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B9.4 Paragraph 11 of Form A: Bid shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
- (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B9.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B9.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

**B10. PRICES**

B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B10.1.1 Notwithstanding C11.1.3, prices on Form B: Prices shall not include the Goods and Services Tax (GST) or Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B10.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

**B11. DISCLOSURE**

B11.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B11.2 The Persons are:

- (a) N/A

**B12. QUALIFICATION**

B12.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; and
- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

B12.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>

B12.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba).

B12.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B12.5 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B12.6 The Bidder shall be accredited and maintain status of accreditation for the duration of the contract as per ISO:17025;2005, General Requirements for the Competence of Testing and Calibration Laboratories by one of the following bodies;

- (i) CALA (Canadian Association for Laboratory Accreditation); or
- (ii) Standards Council of Canada.

B12.6.1 Further to B12.6, if any accreditation is suspended or revoked for any parameter to be tested under this Contract the Contract Administrator must be advised immediately in



writing. Upon review, the Contract Administer reserves the right to have the Contractor subcontract the analysis for which accreditation has been suspended at no cost to the City. The subcontractor must meet the conditions of this Bid Opportunity and be approved by the Contract Administer.

### **B13. OPENING OF BIDS AND RELEASE OF INFORMATION**

- B13.1 Bids will not be opened publicly.
- B13.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Price (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- B13.3 After award of Contract, the name(s) of the successful Bidder(s), their address(es) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- B13.4 The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).
- B13.4.1 To the extent permitted, the City shall treat as confidential information, those aspects of a Bid Submission identified by the Bidder as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Protection of Privacy Act (Manitoba), as amended.

### **B14. IRREVOCABLE BID**

- B14.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.
- B14.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

### **B15. WITHDRAWAL OF BIDS**

- B15.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B15.1.1 Notwithstanding C22.5, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B15.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 11 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B15.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
  - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 11 of Form A: Bid; and
  - (c) if the notice has been given by any one of the persons specified in B15.1.3(b), declare the Bid withdrawn.

B15.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B14.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

## **B16. EVALUATION OF BIDS**

B16.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation therefrom (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B12 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B7.

B16.2 Further to B16.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.

B16.3 Further to B16.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B16.4 Further to B16.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B16.4.1 Further to B16.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B16.5 This Contract will be awarded as a whole.

## **B17. AWARD OF CONTRACT**

B17.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B17.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B17.2.1 Without limiting the generality of B17.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
- (d) only one Bid is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B17.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid in accordance with B16.

B17.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

- B17.4 Notwithstanding C4.1, the City may issue a purchase order to the successful Bidder in lieu of the execution of a Contract.
- B17.5 The Contract Documents, as defined in C1.1(n)(ii), in their entirety shall be deemed to be incorporated in and to form a part of the purchase order notwithstanding that they are not necessarily attached to or accompany said purchase order.

## PART C - GENERAL CONDITIONS

### C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Supply of Services* (Revision 2007 04 12) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Supply of Services* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](http://www.winnipeg.ca/matmgt/gen_cond.stm)
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Supply of Services*.

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

#### **D1. GENERAL CONDITIONS**

D1.1 In addition to the *General Conditions for Supply of Services*, these Supplemental Conditions are applicable to the Work of the Contract.

#### **D2. SCOPE OF WORK**

D2.1 The Work to be done under the Contract shall consist of the provision of laboratory testing services for the period from May 1, 2018 until April 30, 2019, with the option of four (4) mutually agreed upon one (1) year extensions.

D2.1.1 The City may negotiate the extension option with the Contractor within ninety (90) Calendar Days prior to the expiry date of the Contract. The City shall incur no liability to the Contractor as a result of such negotiations.

D2.1.2 Changes resulting from such negotiations shall become effective on May 1 of the respective year. Changes to the Contract shall not be implemented by the Contractor without written approval by the Contract Administrator.

D2.2 The major components of the Work are as follows:

- (a) Contractor will be responsible for samples from the time they take possession from the agreed upon location;
- (b) Contractor will be responsible for prepared sample bottles until a City of Winnipeg employee takes possession from the agreed upon location;
- (c) Detailed reports;
- (d) Detailed invoices.

D2.3 The Work shall be done on an "as required" basis during the term of the Contract.

D2.3.1 The type and quantity of Work to be performed under this Contract shall be as authorized from time to time by the Contract Administrator and/or Users.

D2.3.2 Notwithstanding C7.4, the City shall have no obligation under the Contract to purchase any quantity of any item in excess of its actual operational requirements.

D2.4 Notwithstanding D2.1, in the event that operational changes result in substantial changes to the requirements for Work, the City reserves the right to alter the type or quantity of work performed under this Contract, or to terminate the Contract, upon thirty (30) Calendar Days written notice by the Contract Administrator. In such an event, no claim may be made for damages on the ground of loss of anticipated profit on Work.

#### **D3. COOPERATIVE PURCHASE**

D3.1 The Contractor is advised that this is a cooperative purchase.

D3.2 The Contract Administrator may, from time to time during the term of the Contract, approve other public sector organizations and utilities, including but not limited to municipalities, universities, schools and hospitals, to be participants in the cooperative purchase.

D3.3 The Contract Administrator will notify the Contractor of a potential participant and provide a list of the delivery locations and estimated quantities.

D3.4 If any location of the potential participant is more than ten (10) kilometres beyond the boundaries of the City of Winnipeg, the Contractor shall, within fifteen (15) Calendar Days of the

written notice, notify the Contract Administrator of the amount of any additional delivery charge for the location.

- D3.5 If any additional delivery charges are identified by the Contractor, the potential participant may accept or decline to participate in the cooperative purchase.
- D3.6 The Contractor shall enter into a contract with each participant under the same terms and conditions as this Contract except:
- (a) supply under the contract shall not commence until the expiry or lawful termination of any other contract(s) binding the participant for the same services;
  - (b) a participant may specify a duration of Contract shorter than the duration of this Contract;
  - (c) a participant may specify that only some items under this Contract and/or less than its total requirement for an item are to be supplied under its contract; and
  - (d) any additional delivery charge identified and accepted in accordance with clause D3.4 and D3.5 will apply.
- D3.7 Each participant will be responsible for the administration of its contract and the fulfilment of its obligations under its contract. The City shall not incur any liability arising from any such contract.
- D3.8 No participant shall have the right or authority to effect a change in the Contract, or of any other participant in this Contract.

#### **D4. DEFINITIONS**

- D4.1 When used in this Bid Opportunity:
- (a) "**User**" means a person, department or other administrative unit of the City authorized by the Contract Administrator to order Work under this Contract;
  - (b) "**CALA**" means Canadian Association for Laboratory Accreditation;
  - (c) "**cfu/mL**" means colony forming units per millilitre;
  - (d) "**cfu/100mL**" means colony forming units per 100 millilitres;
  - (e) "**E. coli**" means Escherichia coliform;
  - (f) "**ISO/IEC**" means International Standards Organization;
  - (g) "**MDL**" means method detection limit;
  - (h) "**mg/kg**" means milligrams per kilogram;
  - (i) "**mg/L**" means milligrams per litre;
  - (j) "**MPN**" means most probable number;
  - (k) "**MPNU/100mL**" means most probable number units per 100 millilitres;
  - (l) "**pg/L**" means picograms per litre;
  - (m) "**pg/mL**" means picograms per millilitre;
  - (n) "**µg/L**" means micrograms per litre;
  - (o) "**BRRMF**" means Brady Road Resource Management Facility;
  - (p) "**Turn-around Time**" means the time (expressed in Calendar Days) required reporting test results in twenty one (21) days from the time a sample is received by the Contractor.

#### **D5. CONTRACT ADMINISTRATOR**

- D5.1 The Contract Administrator is:
- Chis Kozak  
Supervisor of Environmental Monitoring and Reporting

Telephone No. 204 986-2384  
Email Address: ckozak@winnipeg.ca

D5.2 At the pre-commencement meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

#### **D6. CONTRACTOR'S SUPERVISOR**

D6.1 Further to C6.19, the Contractor shall employ and keep on the Work, at all times during the performance of the Work, a competent supervisor and assistants, if necessary, acceptable to the Contract Administrator. The supervisor shall represent the Contractor on the Site. The supervisor shall not be replaced without the prior consent of the Contract Administrator unless the supervisor proves to be unsatisfactory to the Contractor and ceases to be in his/her employ.

D6.2 Before commencement of Work, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D6.2.1 Further to C5.5 Contract Administrator may give instructions or orders to the Contractor's supervisor and such instructions or orders shall be deemed to have been given to the Contractor.

#### **D7. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE**

D7.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D7.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D7.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

D7.4 A Contractor who violates any provision of D7 may be determined to be in breach of Contract.

#### **D8. NOTICES**

D8.1 Notwithstanding C22.3, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer.

#### **SUBMISSIONS**

#### **D9. AUTHORITY TO CARRY ON BUSINESS**

D9.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

## **D10. INSURANCE**

D10.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured; such liability policy to also contain a cross-liability clause, non-owned automobile liability and products and completed operations cover, to remain in place at all times during the performance of the Work;
- (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Service. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
- (c) Professional liability or Errors and Omissions liability insurance in the amount of at least one million dollars (\$1,000,000) per claim to remain in place at all times during the performance of the Work and throughout the warranty period.

D10.2 Deductibles shall be borne by the Contractor.

D10.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.

D10.4 The Contractor shall not cancel, materially alter, or cause the policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D10.5 The City shall have the right to alter the limits and/or coverages as reasonably required from time to time during the continuance of this agreement.

D10.6 All policies shall be taken out with insurers licensed to carry on business in the Province of Manitoba.

## **CONTROL OF WORK**

### **D11. COMMENCEMENT**

D11.1 The Contractor shall not commence any Work until he/she is in receipt of a notice of award from the City authorizing the commencement of the Work.

D11.2 The Contractor shall not commence any Work on the Site until:

- (a) the Contract Administrator has confirmed receipt and approval of:
  - (i) evidence of authority to carry on business specified in D9;
  - (ii) evidence of the workers compensation coverage specified in C6.14; and
  - (iii) evidence of the insurance specified in D10.
- (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

### **D12. ORDERS**

D12.1 The Contractor shall provide a local Winnipeg telephone number or a toll-free telephone number at which orders for service may be placed.

### **D13. RECORDS**

D13.1 The Contractor shall keep detailed records of the services supplied under the Contract.



- D13.2 The Contractor shall record, as a minimum, for each item listed on Form B: Prices:
- (a) user name(s) and addresses;
  - (b) order date(s);
  - (c) service date(s); and
  - (d) description and quantity of services provided.
- D13.3 The Contractor shall provide the Contract Administrator with a copy of the usage records each year within thirty (30) Calendar Days of the end of year one (1) and within thirty (30) Calendar Days at the end of any Contract extension period should the Contract be extended.

## MEASUREMENT AND PAYMENT

### D14. INVOICES

- D14.1 Further to C11, the Contractor shall submit an invoice for each portion of work performed delivered to:

The City of Winnipeg  
Corporate Finance - Accounts Payable  
4th Floor, Administration Building, 510 Main Street  
Winnipeg MB R3B 1B9

Facsimile No.: 204 949-0864  
Email: [CityWpgAP@winnipeg.ca](mailto:CityWpgAP@winnipeg.ca)

- D14.2 Invoices must clearly indicate, as a minimum:
- (a) the City's purchase order number;
  - (b) date of delivery;
  - (c) delivery address;
  - (d) type and quantity of work performed;
  - (e) the amount payable with GST and MRST shown as separate amounts; and
  - (f) the Contractor's GST registration number.
- D14.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.
- D14.4 **Bid Submissions must not be submitted to the above facsimile number. Bids must be submitted in accordance with B8.**

### D15. PAYMENT

- D15.1 Further to C11, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice.
- D15.2 Further to C11, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.
- D15.3 If the test results and reports as per E2.7 to E2.9 for routine and/or rush samples are not provided to the Contract Administrator within the applicable turn-around time(s) specified in definitions, the test results and report is considered late and the Contractor shall reduce the fees payable with respect to the testing service submitted according to the following rates:
- (a) 1 Calendar Day late, fee reduction is 20%
  - (b) 2 Calendar Days late, fee reduction is 50%
  - (c) 3 or more Calendar Days late, fee reduction is 100%

D15.4 Further to D14.3, if the Contractor has made contact as per E2.10 payment deductions may not be applied.

## **WARRANTY**

### **D16. WARRANTY**

D16.1 Notwithstanding C12, Warranty does not apply to this Contract.

## **PART E - SPECIFICATIONS**

### **GENERAL**

#### **E1. APPLICABLE SPECIFICATIONS**

- E1.1 These Specifications shall apply to the Work.
- E1.2 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B7.

#### **E2. SERVICES**

- E2.1 The Contractor shall supply laboratory testing in accordance with the requirements hereinafter specified
- E2.2 All tests shall be done according to Environmental Protection Agency (EPA) method or 21<sup>st</sup> Standard Methods for the Examination of Water and Wastewater, or method agreed upon between the Contract Administrator and Contractor.
- E2.3 Each test that is not conducted, through human, instrument, or other error shall be reported as "No Result" or "Not Analyzed" with a corresponding explanation stated. In these cases, the City will not be charged for the sample preparation unless the prepared sample is analyzed for other parameters nor shall they be charged for the testing that is not performed.
- E2.4 The Contractor must contact the Contract Administrator as quickly as possible if the samples are damaged, fail to meet submission protocols/standards associated with the analysis, or when information is questionable on the submission form or the sample containers.
- E2.5 The Contractor shall promptly notify the Contract Administrator if the sample(s) are lost, incorrectly analyzed, or incorrectly reported or not tested within the method hold time and request resampling or approval to continue testing.
- E2.6 The Contractor must record the date, time and temperature of all sample(s) that are dropped off, picked up or delivered to the laboratory and make this information available to the Contract Administrator.
- E2.7 Test results and reports shall:
- (i) be available on the web site, with an electronic copy e-mailed to the specified address and contact person(s);
  - (ii) include Quality Control test reports
  - (iii) be made available in hard copy format;
  - (iv) upon request, be made available in an electronic readable format such as Microsoft Excel;
  - (v) be delivered as an electronic file suitable to be used as Electronic Data Deliverables (EDD) in a format such as XML, CSV, XLS and include laboratory and sample specific unique identifiers; and
  - (vi) be in accordance with the requirements outlined under section 5.10 of the ISO/IEC 17025:2005 international standard or otherwise agreed upon between the Contract Administrator and Contractor.
- E2.8 Preliminary or unofficial test results shall be available in accordance with E2.7 with the mutual understanding that the final official results may differ.
- E2.9 Notifications shall be made to the Contract Administrator for the availability of preliminary results on rush analysis.
- E2.9.1 Further to E2.9, Notifications shall be made by phone or email.

- E2.10 Notification to the Contract Administrator shall occur before the required turn-around time, if analysis and reporting is not within the required turn-around time accompanied with an estimate of the date when the analysis and reporting will be given.
- E2.11 The Contractor shall supply all the bottles required within five (5) Business Days of ordering for regular testing in a “ready to use” condition and have them available for pick-up by the City from the same location as the drop-off location or have the sample(s) delivered to a location agreed upon between the Contract Administrator and Contractor. Emergency sampling bottles shall be available within the time frame agreed upon between the Contract Administrator and Contractor.
- E2.12 The Contractor shall supply the City with sample kits which includes shipping containers (e.g. coolers), sample bottles, ice packs, directions and precautions and Material Safety Data Sheets; when reagents, preservatives, or special handling is required as part of the sampling protocol at no additional cost.
- E2.13 The Contractor shall accept delivery of samples between the hours of 8:00 a.m. and 5:00 p.m. from Monday to Friday.
- E2.14 All bacteriological test methods (Total Coliform, Fecal Coliform, E. Coli) shall commence the same day that samples are received.
- E2.15 The Contractor shall have a contact person(s) and phone number that the City can contact at any time for emergency purposes.
- E2.16 Emergency testing shall commence immediately upon sample delivery and are considered highest priority for analysis, if the City has met the agreed upon Turn-around Time with regards to availability, acceptability and notification with the Contractor and it has been agreed upon.
- E2.17 If any parameter to be tested under this contract cannot be completed by the Contractor due to an instrument/equipment and/or operational issue and subcontracting is required to maintain the level of service, the Contract Administrator must be advised of the subcontracting and they must meet the conditions of this bid opportunity and be approved.
- E2.18 A corrective Action Report is required if any issues arise impacting the results reported under the Contract or if requested by the Contract Administrator, for issues regarding data-related investigations or service requirements.
- E2.19 Further to E2.19, all Corrective Active Reports shall be submitted to the Contract Administrator.
- E2.20 An accredited method is required for testing all parameters listed below.
- E2.20.1 A non-accredited test method for testing any parameters listed below requires the Contract Administrator’s approval.

**SPECIFIC TESTING**

**E3. SECTION A (BRRMF SURFACE WATER)**

E3.1 Item 1, Total Cyanide in water shall:

- (a) consist of approximately forty six (46) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 1</b>	<b>Total Cyanide, Water</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Total Cyanide	0.005	Mg/L

E3.2 Item 2, Microbiological parameters in water shall:

- (a) consist of approximately forty six (46) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 2</b>	<b>Microbiological Parameters in Water</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
E. Coli	0	MPN/100mL
Fecal Coliform	0	MPN/100mL
Total coliforms	0	MPN/100mL

E3.3 Item 3, Anions in water shall:

- (a) consist of approximately forty six (46) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 3</b>	<b>Anions in Water</b>	
<b>Parameters</b>	<b>MDL</b>	<b>Units</b>
Chloride	2	Mg/L
Sulfate	5	Mg/L

E3.4 Item 4, Anions and Nutrients in water shall:

- (a) consist of approximately forty six (46) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 4</b>	<b>Anions and Nutrients</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Alkalinity, Total (as CaCO <sub>3</sub> )	20	Mg/L
Ammonia, Total (as N)	0.01	Mg/L
Bicarbonate (HCO <sub>3</sub> )	24	Mg/L
Carbonate (CO <sub>3</sub> )	12	Mg/L
Hydroxide (OH)	6.8	Mg/L

E3.5 Item 5, Organic/Inorganic Carbon in water shall:

- (a) consist of approximately forty six (46) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 5</b>	<b>Organic/Inorganic Carbon</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Dissolved Inorganic Carbon	1	Mg/L
Dissolved Organic Carbon	1	Mg/L
Total Dissolved Carbon	1	Mg/L

E3.6 Item 6, Dissolved Metals and Dissolved Mercury in water shall:

- (a) consist of approximately forty six (46) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 6</b>	<b>Dissolved Metals and Dissolved Mercury</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Aluminum Dissolved	0.002	Mg/L
Antimony Dissolved	0.002	Mg/L
Arsenic Dissolved	0.002	Mg/L
Barium Dissolved	0.002	Mg/L
Beryllium	0.002	Mg/L
Bismuth Dissolved	0.002	Mg/L
Boron Dissolved	0.002	Mg/L
Cadmium Dissolved	0.00001	Mg/L
Calcium Dissolved	0.05	Mg/L
Cesium Dissolved	0.0001	Mg/L
Chromium Dissolved	0.002	Mg/L
Cobalt Dissolved	0.0002	Mg/L
Copper Dissolved	0.0002	Mg/L
Iron Dissolved	0.1	Mg/L
Lead Dissolved	0.00009	Mg/L
Lithium Dissolved	0.002	Mg/L
Magnesium Dissolved	0.01	Mg/L
Manganese Dissolved	0.0001	Mg/L
Mercury Dissolved	0.00005	Mg/L
Molybdenum Dissolved	0.0001	Mg/L
Nickel Dissolved	0.001	Mg/L
Phosphorus Dissolved	0.03	Mg/L
Potassium Dissolved	0.02	Mg/L
Rubidium Dissolved	0.0002	Mg/L
Selenium Dissolved	0.001	Mg/L
Silicon Dissolved	0.05	Mg/L
Silver Dissolved	0.0001	Mg/L
Sodium Dissolved	0.02	Mg/L
Strontium Dissolved	0.0001	Mg/L
Tellurium Dissolved	0.0002	Mg/L
Thorium Dissolved	0.0001	Mg/L
Tin Dissolved	0.0002	Mg/L
Titanium Dissolved	0.0002	Mg/L
Tungsten Dissolved	0.0002	Mg/L
Uranium Dissolved	0.0001	Mg/L
Vanadium Dissolved	0.0002	Mg/L
Zinc Dissolved	0.002	Mg/L
Zirconium	0.0004	Mg/L

E3.7 Item 7, Speciated Metals in water shall:

- (a) consist of approximately forty six (46) samples annually;
- (b) have tests performed to include the following parameters:

Item	Speciated Metals	
Parameter	MDL	Parameter
Hexavalent Chromium	0.01	Hexavalent Chromium

**E4. SECTION B (BRRMF GROUNDWATER)**

E4.1 Item 8, Total Cyanide in water shall:

- (a) consist of approximately thirty eight (38) samples annually;
- (b) have tests performed to include the following parameters:

Item 8	Total Cyanide, Water	
Parameter	MDL	Units
Total Cyanide	0.005	Mg/L

E4.2 Item 9, OC Pesticides in water shall:

- (a) consist of approximately thirty nine (39) samples annually;
- (b) have tests performed to include the following parameters:

Item 9	OC PESTICIDES (SELECTED)	
Parameter	MDL	Units
Diazinon	2	Ug/L

E4.3 Item 10, Phenoxy Acid Herbicides in water shall:

- (a) consist of approximately thirty nine (39) samples annually;
- (b) have tests performed to include the following parameters:

Item 10	PHENOXY ACID HERBICIDES	
Parameter	MDL	Units
Dicamba	1	Ug/L
Picloram	5	Ug/L
MCPB	2	Ug/L
2, 4 D (BEE)	2	Ug/L
MCPP	2	Ug/L
MCPA	2	Ug/L
2,4 D	1	Ug/L
2, 4, 5 TP	1	Ug/L
2, 4, 5 T	1	Ug/L
2, 4 DB	1	Ug/L

E4.4 Item 11, Microbiological parameters in water shall:

- (a) consist of approximately sixty two (62) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 11</b>	<b>Microbiological Parameters in Water</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
E. Coli	0	MPN/100mL
Fecal Coliform	0	MPN/100mL
Total coliforms	0	MPN/100mL

E4.5 Item 12, Anions in water shall:

- (a) consist of approximately sixty two (62) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 12</b>	<b>Anions in Water by Ion Chromatography</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Chloride	2	Mg/L
Sulfate	5	Mg/L

E4.6 Item 13, Anions and Nutrients in water shall:

- (a) consist of approximately sixty two (62) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 13</b>	<b>Anions and Nutrients</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Alkalinity, Total (as CaCO <sub>3</sub> )	20	Mg/L
Ammonia, Total (as N)	0.01	Mg/L
Bicarbonate (HCO <sub>3</sub> )	24	Mg/L
Carbonate (CO <sub>3</sub> )	12	Mg/L
Hydroxide (OH)	6.8	Mg/L

E4.7 Item 14, Organic/Inorganic Carbon in water shall:

- (a) consist of approximately sixty two (62) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 14</b>	<b>Organic/Inorganic Carbon</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Dissolved Inorganic Carbon	1	Mg/L
Dissolved Organic Carbon	1	Mg/L
Total Dissolved Carbon	1	Mg/L



E4.8 Item 15, Dissolved Metals and Total Mercury in water shall:

- (a) consist of approximately sixty two (62) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 15</b>	<b>Dissolved Metals and TOTAL Mercury</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Aluminum Dissolved	0.002	Mg/L
Antimony Dissolved	0.002	Mg/L
Arsenic Dissolved	0.002	Mg/L
Barium Dissolved	0.002	Mg/L
Beryllium	0.002	Mg/L
Bismuth Dissolved	0.002	Mg/L
Boron Dissolved	0.002	Mg/L
Cadmium Dissolved	0.00001	Mg/L
Calcium Dissolved	0.05	Mg/L
Cesium Dissolved	0.0001	Mg/L
Chromium Dissolved	0.002	Mg/L
Cobalt Dissolved	0.0002	Mg/L
Copper Dissolved	0.0002	Mg/L
Iron Dissolved	0.1	Mg/L
Lead Dissolved	0.00009	Mg/L
Lithium Dissolved	0.002	Mg/L
Magnesium Dissolved	0.01	Mg/L
Manganese Dissolved	0.0001	Mg/L
Mercury TOTAL	0.00005	Mg/L
Molybdenum Dissolved	0.0001	Mg/L
Nickel Dissolved	0.001	Mg/L
Phosphorus Dissolved	0.03	Mg/L
Potassium Dissolved	0.02	Mg/L
Rubidium Dissolved	0.0002	Mg/L
Selenium Dissolved	0.001	Mg/L
Silicon Dissolved	0.05	Mg/L
Silver Dissolved	0.0001	Mg/L
Sodium Dissolved	0.02	Mg/L
Strontium Dissolved	0.0001	Mg/L
Tellurium Dissolved	0.0002	Mg/L
Thorium Dissolved	0.0001	Mg/L
Tin Dissolved	0.0002	Mg/L
Titanium Dissolved	0.0002	Mg/L
Tungsten Dissolved	0.0002	Mg/L
Uranium Dissolved	0.0001	Mg/L
Vanadium Dissolved	0.0002	Mg/L
Zinc Dissolved	0.002	Mg/L
Zirconium	0.0004	Mg/L

E4.9 Item 16, Speciated metals in water shall:

- (a) consist of approximately sixty two (62) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 16</b>	<b>Speciated Metals</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Hexavalent Chromium	0.01	Mg/L

E4.10 Item 17, Phenol in water shall:

- (a) consist of approximately thirty nine (39) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item</b>	<b>PHENOL (4AAP)</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Phenol	0.001	Mg/L

E4.11 Item 18, Petroleum Hydrocarbons in water shall:

- (a) consist of approximately thirty nine (39) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 18</b>	<b>PETROLEUM HYDRO. CCME F1 &amp; BTEX IN WATER, PETROLEUM HYDROCARBONS F2-F4 IN WATER, &amp; PETROLEUM HYDROCARBONS F4G IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
F1 (C6-C10)	100	Ug/L
F1 (C6-C10) – BTEX	100	Ug/L
F2 (C10-C16) Hydrocarbons	100	Ug/L
F3 (C16-C34) Hydrocarbons	100	Ug/L
F4 (C34-C50) Hydrocarbons	100	Ug/L
F4G (Grav. Heavy Hydrocarbons)	800	Ug/L

E4.12 Item 19, Volatile Organic Compounds in water shall:

- (a) consist of approximately thirty nine (39) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 19</b>	<b>VOLATILE ORGANIC COMPOUNDS IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
1,1,1,2-Tetrachloroethane	0.5	Ug/L
1,1,1-Trichloroethane	0.5	Ug/L
1,1,2,2-Tetrachloroethane	0.5	Ug/L
1,1,2-Trichloroethane	0.5	Ug/L
1,1-Dichloroethane	0.5	Ug/L
1,1-Dichloroethylene	0.5	Ug/L
1,2-Dichlorobenzene	0.5	Ug/L
1,2-Dichloroethane	0.5	Ug/L
1,2-Dichloropropane	0.5	Ug/L
1,3-Dichlorobenzene	0.5	Ug/L
1,4-Dichlorobenzene	0.5	Ug/L
2-Hexanone	20	Ug/L
Acetone	20	Ug/L
Benzene	0.5	Ug/L
Bromodichloromethane	0.5	Ug/L
Bromoform	0.5	Ug/L
Bromomethane	1	Ug/L
Carbon Disulfide	0.5	Ug/L
Carbon tetrachloride	0.5	Ug/L
Chlorobenzene	0.5	Ug/L
Dibromochloromethane	0.5	Ug/L
Chloroethane	1	Ug/L
Chloroform	0.5	Ug/L
Chloromethane	1	Ug/L
cis-1,2-Dichloroethylene	0.5	Ug/L
cis-1,3-Dichloropropene	0.5	Ug/L
Dichlorodifluoromethane	1	Ug/L
Ethyl Benzene	0.5	Ug/L
1,2-Dibromoethane	0.5	Ug/L
m+p-Xylenes	1	Ug/L
Methyl Ethyl Ketone	20	Ug/L
Methyl Isobutyl Ketone	20	Ug/L
MTBE	0.5	Ug/L
Dichloromethane	0.5	Ug/L
o-Xylene	0.5	Ug/L
Styrene	0.5	Ug/L
Tetrachloroethylene	0.5	Ug/L
Trihalomethanes (total)	2	Ug/L
Toluene	0.5	Ug/L
trans-1,2-Dichloroethylene	0.5	Ug/L
trans-1,3-Dichloropropene	0.5	Ug/L
Trichloroethylene	0.5	Ug/L
Trichlorofluoromethane	1	Ug/L
Vinyl chloride	0.5	Ug/L
Xylenes (Total)	1.5	Ug/L

E4.13 Item 20, Polycyclic Aromatic Hydrocarbons in water shall:

- (a) consist of approximately thirty nine (39) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 20</b>	<b>Polycyclic Aromatic Hydrocarbons</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
1-Methyl Naphthalene	0.00002	Mg/L
2-Methyl Naphthalene	0.00002	Mg/L
Acenaphthene	0.00002	Mg/L
Acenaphthylene	0.00002	Mg/L
Acridine	0.00002	Mg/L
Anthracene	0.00001	Mg/L
B(a)P Total Potency Equivalent	0.00003	Mg/L
Benzo(a)anthracene	0.00001	Mg/L
Benzo(a)pyrene	0.000005	Mg/L
Benzo(b&j)fluoranthene	0.00001	Mg/L
Benzo(g,h,i)perylene	0.00002	Mg/L
Benzo(k)fluoranthene	0.00001	Mg/L
Chrysene	0.00002	Mg/L
Dibenzo(a,h)anthracene	0.000005	Mg/L
Fluoranthene	0.00002	Mg/L
Fluorene	0.00002	Mg/L
Indeno(1,2,3-cd)pyrene	0.00001	Mg/L
Naphthalene	0.00005	Mg/L
Phenanthrene	0.00005	Mg/L
Pyrene	0.00001	Mg/L
Quinoline	0.00002	Mg/L

**E5. SECTION C (BRRMF LEACHATE)**

E5.1 Item 21, Total Cyanide in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 21</b>	<b>Total Cyanide, Water</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Total Cyanide	0.005	Mg/L

E5.2 Item 22, Microbiological parameters in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 22</b>	<b>Microbiological Parameters in Water</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
E. Coli	0	MPN/100mL
Fecal Coliform	0	MPN/100mL
Total coliforms	0	MPN/100mL

E5.3 Item 23, Anions in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 23</b>	<b>Anions in Water by Ion Chromatography</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Chloride	2	Mg/L
Sulfate	5	Mg/L

E5.4 Item 24, Anions and Nutrients in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 24</b>	<b>Anions and Nutrients</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Alkalinity, Total (as CaCO <sub>3</sub> )	20	Mg/L
Ammonia, Total (as N)	0.01	Mg/L
Bicarbonate (HCO <sub>3</sub> )	24	Mg/L
Carbonate (CO <sub>3</sub> )	12	Mg/L
Hydroxide (OH)	6.8	Mg/L

E5.5 Item 25, Organic/ Inorganic Carbon in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 25</b>	<b>Organic/Inorganic Carbon</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Dissolved Inorganic Carbon	1	Mg/L
Dissolved Organic Carbon	1	Mg/L
Total Dissolved Carbon	1	Mg/L

E5.6 Item 26, Speciated Metals in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 26</b>	<b>Speciated Metals</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Hexavalent Chromium	0.01	Mg/L

E5.7 Item 27, Dissolved Metals in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 27</b>	<b>Dissolved Metals</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Aluminum Dissolved	0.002	Mg/L
Antimony Dissolved	0.002	Mg/L
Arsenic Dissolved	0.002	Mg/L
Barium Dissolved	0.002	Mg/L
Beryllium Dissolved	0.002	Mg/L
Bismuth Dissolved	0.002	Mg/L
Boron Dissolved	0.002	Mg/L
Cadmium Dissolved	0.00001	Mg/L
Calcium Dissolved	0.05	Mg/L
Cesium Dissolved	0.0001	Mg/L
Chromium Dissolved	0.002	Mg/L
Cobalt Dissolved	0.0002	Mg/L
Copper Dissolved	0.0002	Mg/L
Iron Dissolved	0.1	Mg/L
Lead Dissolved	0.00009	Mg/L
Lithium Dissolved	0.002	Mg/L
Magnesium Dissolved	0.01	Mg/L
Manganese Dissolved	0.0001	Mg/L
Mercury Dissolved	0.00005	Mg/L
Molybdenum Dissolved	0.0001	Mg/L
Nickel Dissolved	0.001	Mg/L
Phosphorus Dissolved	0.03	Mg/L
Potassium Dissolved	0.02	Mg/L
Rubidium Dissolved	0.0002	Mg/L
Selenium Dissolved	0.001	Mg/L
Silicon Dissolved	0.05	Mg/L
Silver Dissolved	0.0001	Mg/L
Sodium Dissolved	0.02	Mg/L
Strontium Dissolved	0.0001	Mg/L
Tellurium Dissolved	0.0002	Mg/L
Thorium Dissolved	0.0001	Mg/L
Tin Dissolved	0.0002	Mg/L
Titanium Dissolved	0.0002	Mg/L
Tungsten Dissolved	0.0002	Mg/L
Uranium Dissolved	0.0001	Mg/L
Vanadium Dissolved	0.0002	Mg/L
Zinc Dissolved	0.002	Mg/L
Zirconium Dissolved	0.0004	Mg/L

E5.8 Item 28, Total Metals in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 28</b>	<b>Total Metals</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Aluminum	0.005	Mg/L
Antimony	0.0005	Mg/L
Arsenic	0.001	Mg/L
Barium	0.005	Mg/L
Beryllium	0.0005	Mg/L
Bismuth	0.001	Mg/L
Boron	0.01	Mg/L
Cadmium	0.0001	Mg/L
Calcium	0.2	Mg/L
Chromium	0.005	Mg/L
Cobalt	0.0005	Mg/L
Copper	0.001	Mg/L
Iron	0.1	Mg/L
Lead	0.0005	Mg/L
Lithium	0.005	Mg/L
Magnesium	0.05	Mg/L
Manganese	0.002	Mg/L
Mercury	0.00005	Mg/L
Molybdenum	0.001	Mg/L
Nickel	0.001	Mg/L
Phosphorus	0.1	Mg/L
Potassium	0.2	Mg/L
Rubidium	0.0002	Mg/L
Selenium	0.2	Mg/L
Silicon	0.05	Mg/L
Silver	0.0001	Mg/L
Sodium	0.1	Mg/L
Strontium	0.001	Mg/L
Tellurium	0.001	Mg/L
Thorium	0.001	Mg/L
Tin	0.001	Mg/L
Titanium	0.005	Mg/L
Tungsten	0.001	Mg/L
Uranium	0.0001	Mg/L
Vanadium	0.001	Mg/L
Zinc	0.005	Mg/L
Zirconium	0.001	Mg/L

E5.9 Item 29, Petroleum Hydrocarbons and Oil and Grease in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 29</b>	<b>PETROLEUM HYDRO. CCME F1 &amp; BTEX IN WATER, PETROLEUM HYDROCARBONS F2-F4 IN WATER, &amp; PETROLEUM HYDROCARBONS F4G IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
F1 (C6-C10)	100	Ug/L
F1 (C6-C10) – BTEX	100	Ug/L
F2 (C10-C16) Hydrocarbons	100	Ug/L
F3 (C16-C34) Hydrocarbons	100	Ug/L
F4 (C34-C50) Hydrocarbons	100	Ug/L
F4G (Grav. Heavy Hydrocarbons)	800	Ug/L
Oil and Grease	1	Mg/L

E5.10 Item 30, Volatile Organic Compounds in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 30</b>	<b>VOLATILE ORGANIC COMPOUNDS IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
1,1,1,2-Tetrachloroethane	0.5	Ug/L
1,1,1-Trichloroethane	0.5	Ug/L
1,1,2,2-Tetrachloroethane	0.5	Ug/L
1,1,2-Trichloroethane	0.5	Ug/L
1,1-Dichloroethane	0.5	Ug/L
1,1-Dichloroethylene	0.5	Ug/L
1,2-Dichlorobenzene	0.5	Ug/L
1,2-Dichloroethane	0.5	Ug/L
1,2-Dichloropropane	0.5	Ug/L
1,3-Dichlorobenzene	0.5	Ug/L
1,4-Dichlorobenzene	0.5	Ug/L
2-Hexanone	20	Ug/L
Acetone	20	Ug/L
Benzene	0.5	Ug/L
Bromodichloromethane	0.5	Ug/L
Bromoform	0.5	Ug/L
Bromomethane	1	Ug/L
Carbon Disulfide	0.5	Ug/L
Carbon tetrachloride	0.5	Ug/L
Chlorobenzene	0.5	Ug/L
Dibromochloromethane	0.5	Ug/L
Chloroethane	1	Ug/L
Chloroform	0.5	Ug/L
Chloromethane	1	Ug/L
cis-1,2-Dichloroethylene	0.5	Ug/L
cis-1,3-Dichloropropene	0.5	Ug/L



Dichlorodifluoromethane	1	Ug/L
Ethyl Benzene	0.5	Ug/L
1,2-Dibromoethane	0.5	Ug/L
m+p-Xylenes	1	Ug/L
Methyl Ethyl Ketone	20	Ug/L
Methyl Isobutyl Ketone	20	Ug/L
MTBE	0.5	Ug/L
Dichloromethane	0.5	Ug/L
o-Xylene	0.5	Ug/L
Styrene	0.5	Ug/L
Tetrachloroethylene	0.5	Ug/L
Trihalomethanes (total)	2	Ug/L
Toluene	0.5	Ug/L
trans-1,2-Dichloroethylene	0.5	Ug/L
trans-1,3-Dichloropropene	0.5	Ug/L
Trichloroethylene	0.5	Ug/L
Trichlorofluoromethane	1	Ug/L
Vinyl chloride	0.5	Ug/L
Xylenes (Total)	1.5	Ug/L

E5.11 Item 31, Phenol in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 31</b>	<b>Phenol</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Phenol	0.001	Mg/L

E5.12 Item 32, Polycyclic Aromatic Hydrocarbons in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 32</b>	<b>Polycyclic Aromatic Hydrocarbons</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
1-Methyl Naphthalene	0.00002	Mg/L
2-Methyl Naphthalene	0.00002	Mg/L
Acenaphthene	0.00002	Mg/L
Acenaphthylene	0.00002	Mg/L
Acridine	0.00002	Mg/L
Anthracene	0.00001	Mg/L
B(a)P Total Potency Equivalent	0.00003	Mg/L
Benzo(a)anthracene	0.00001	Mg/L
Benzo(a)pyrene	0.000005	Mg/L
Benzo(b&j)fluoranthene	0.00001	Mg/L
Benzo(g,h,i)perylene	0.00002	Mg/L
Benzo(k)fluoranthene	0.00001	Mg/L
Chrysene	0.00002	Mg/L

Dibenzo(a,h)anthracene	0.000005	Mg/L
Fluoranthene	0.00002	Mg/L
Fluorene	0.00002	Mg/L
Indeno(1,2,3-cd)pyrene	0.00001	Mg/L
Naphthalene	0.00005	Mg/L
Phenanthrene	0.00005	Mg/L
Pyrene	0.00001	Mg/L
Quinoline	0.00002	Mg/L
3,3'- Dichlorobenzidine	0.0008	Mg/L
4,4' – Methylenebis (2 – chloroaniline)	0.0005	mg/L
Dinitropyrene	0.002	Mg/L
Perylene	0.0008	Mg/L

E5.13 Item 33, OC/OP Pesticides and PCB in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 33</b>	<b>OC/OP PESTICIDES (SELECTED) &amp; PCB</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Hexachloroethane	0.01	Ug/L
Hexachlorobutadiene	0.009	Ug/L
Hexachlorocyclopentadiene	0.02	Ug/L
Aldrin + Dieldrin	0.005	Ug/L
Aldrin	0.005	Ug/L
A – BHC	0.005	Ug/L
B - BHC	0.005	Ug/L
G – BHC	0.005	Ug/L
A – Chlordane	0.005	Ug/L
G – Chlordane	0.005	Ug/L
Chlordane (total)	0.005	Ug/L
O, p DDD	0.005	Ug/L
P,p DDD	0.005	Ug/L
O,p DDD + p,p DDD	0.005	Ug/L
O,p DDE	0.005	Ug/L
P,p DDE	0.005	Ug/L
O,p + p,p DDE	0.005	Ug/L
O,p DDT	0.005	Ug/L
P,p DDT	0.005	Ug/L
O,p DDT + p,p DDT	0.005	Ug/L
DDT + Metabolites	0.005	Ug/L
Dieldrin	0.005	Ug/L
Endosulfan I	0.005	Ug/L
Endosulfan II	0.005	Ug/L
Total Endosulfan	0.005	Ug/L
Endrin	0.005	Ug/L
Endrin Aldehyde	0.005	Ug/L
Endrin Ketone	0.005	Ug/L
Heptachlor	0.005	Ug/L
Heptachlor Epoxide	0.005	Ug/L

Hexachlorobenzene	0.005	Ug/L
Lindane	0.003	Ug/L
Methoxychlor	0.014	Ug/L
Mirex	0.005	Ug/L
Octachlorostyrene	0.005	Ug/L
Total PCB	0.1	Ug/L
Aroclor 1016	0.05	Ug/L
Aroclor 1221	0.1	Ug/L
Aroclor 1232	0.05	Ug/L
Aroclor 1242	0.05	Ug/L
Aroclor 1248	0.05	Ug/L
Aroclor 1254	0.05	Ug/L
Aroclor 1260	0.05	Ug/L
Toxaphene	0.2	Ug/L
Diazinon	2	Ug/L

E5.14 Item 34, Phenoxy Acid Herbicides in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 34</b>	<b>PHENOXY ACID HERBICIDES</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Dicamba	1	Ug/L
Picloram	5	Ug/L
MCPB	2	Ug/L
2, 4 D (BEE)	2	Ug/L
MCPP	2	Ug/L
MCPA	2	Ug/L
2,4 D	1	Ug/L
2, 4, 5 TP	1	Ug/L
2, 4, 5 T	1	Ug/L
2, 4 DB	1	Ug/L

E5.15 Item 35, Dioxins and Furans in water shall:

- (a) consist of approximately one (1) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 35</b>	<b>Dioxins and Furans</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
2,3,7,8-Tetra CDD	11.4	Pg/L
1,2,3,7,8-Penta CDD	11.4	Pg/L
1,2,3,4,7,8-Hexa CDD	11.4	Pg/L
1,2,3,6,7,8-Hexa CDD	11.4	Pg/L
1,2,3,7,8,9-Hexa CDD	11.4	Pg/L
1,2,3,4,6,7,8-Hepta CDD	11.4	Pg/L
Octa CDD	11.4	Pg/L
Total Tetra CDD	11.4	Pg/L
Total Penta CDD	11.4	Pg/L

Total Hexa CDD	11.4	Pg/L
Total Hepta CDD	11.4	Pg/L
2,3,7,8-Tetra CDF	11.4	Pg/L
1,2,3,7,8-Penta CDF	11.4	Pg/L
2,3,4,7,8-Penta CDF	11.4	Pg/L
1,2,3,4,7,8-Hexa CDF	11.4	Pg/L
1,2,3,6,7,8-Hexa CDF	11.4	Pg/L
2,3,4,6,7,8-Hexa CDF	11.4	Pg/L
1,2,3,7,8,9-Hexa CDF	11.4	Pg/L
1,2,3,4,6,7,8-Hepta CDF	11.4	Pg/L
1,2,3,4,7,8,9-Hepta CDF	11.4	Pg/L
Octa CDF	11.4	Pg/L
Total Tetra CDF	11.4	Pg/L
Total Penta CDF	11.4	Pg/L
Total Hexa CDF	11.4	Pg/L
Total Hepta CDF	11.4	Pg/L

E5.16 Item 36, Extractable in water shall:

- (a) consist of approximately twelve (12) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 36</b>	<b>Extractable</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
4,4'-Methylenebis(2-chloroaniline)	0.5	Ug/L

**E6. SECTION D (CLOSED LANDFILL SURFACE WATER)**

E6.1 Item 37, Microbiological parameters in water shall:

- (a) consist of approximately twenty five (25) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 37</b>	<b>Microbiological Parameters in Water</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
E. Coli	0	MPN/100mL
Fecal Coliform	0	MPN/100mL
Total coliforms	0	MPN/100mL

E6.2 Item 38, Anions in water shall:

- (a) consist of approximately twenty five (25) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 38</b>	<b>Anions in Water by Ion Chromatography</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Chloride	2	Mg/L
Sulfate	5	Mg/L

E6.3 Item 39, Total Mercury in water shall:

- (a) consist of approximately twenty five (25) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 39</b>	<b>Total Mercury</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Mercury	0.002	ug/L

E6.4 Item 40, Hexavalent Chromium in water shall:

- (a) consist of approximately twenty five (25) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 40</b>	<b>Hexavalent Chromium</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Hexavalent Chromium	0.01	Mg/L

E6.5 Item 41, Volatile Organic Compounds in water shall:

- (a) consist of approximately twenty five (25) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 41</b>	<b>VOLATILE ORGANIC COMPOUNDS IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
1,1,1,2-Tetrachloroethane	0.5	Ug/L
1,1,1-Trichloroethane	0.5	Ug/L
1,1,2,2-Tetrachloroethane	0.5	Ug/L
1,1,2-Trichloroethane	0.5	Ug/L
1,1-Dichloroethane	0.5	Ug/L
1,1-Dichloroethylene	0.5	Ug/L
1,2-Dichlorobenzene	0.5	Ug/L
1,2-Dichloroethane	0.5	Ug/L
1,2-Dichloropropane	0.5	Ug/L
1,3-Dichlorobenzene	0.5	Ug/L
1,4-Dichlorobenzene	0.5	Ug/L
2-Hexanone	20	Ug/L
Acetone	20	Ug/L
Benzene	0.5	Ug/L
Bromodichloromethane	0.5	Ug/L
Bromoform	0.5	Ug/L
Bromomethane	1	Ug/L
Carbon Disulfide	0.5	Ug/L
Carbon tetrachloride	0.5	Ug/L
Chlorobenzene	0.5	Ug/L
Dibromochloromethane	0.5	Ug/L
Chloroethane	1	Ug/L
Chloroform	0.5	Ug/L
Chloromethane	1	Ug/L
cis-1,2-Dichloroethylene	0.5	Ug/L
cis-1,3-Dichloropropene	0.5	Ug/L
Dichlorodifluoromethane	1	Ug/L
Ethyl Benzene	0.5	Ug/L

1,2-Dibromoethane	0.5	Ug/L
m+p-Xylenes	1	Ug/L
Methyl Ethyl Ketone	20	Ug/L
Methyl Isobutyl Ketone	20	Ug/L
MTBE	0.5	Ug/L
Dichloromethane	0.5	Ug/L
o-Xylene	0.5	Ug/L
Styrene	0.5	Ug/L
Tetrachloroethylene	0.5	Ug/L
Trihalomethanes (total)	2	Ug/L
Toluene	0.5	Ug/L
trans-1,2-Dichloroethylene	0.5	Ug/L
trans-1,3-Dichloropropene	0.5	Ug/L
Trichloroethylene	0.5	Ug/L
Trichlorofluoromethane	1	Ug/L
Vinyl chloride	0.5	Ug/L
Xylenes (Total)	1.5	Ug/L

E6.6 Item 42, Phenol in water shall:

- (a) consist of approximately twenty five (25) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 42</b>	<b>Phenol</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Phenol	0.001	Mg/L

E6.7 Item 43, Petroleum Hydrocarbons in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 43</b>	<b>PETROLEUM HYDRO. CCME F1 &amp; BTEX IN WATER, PETROLEUM HYDROCARBONS F2-F4 IN WATER, &amp; PETROLEUM HYDROCARBONS F4G IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
F1 (C6-C10)	100	Ug/L
F1 (C6-C10) – BTEX	100	Ug/L
F2 (C10-C16) Hydrocarbons	100	Ug/L
F3 (C16-C34) Hydrocarbons	100	Ug/L
F4 (C34-C50) Hydrocarbons	100	Ug/L
F4G (Grav. Heavy Hydrocarbons)	800	Ug/L

**E7. SECTION E (CLOSED LANDFILL GROUNDWATER)**

E7.1 Item 44, Microbiological parameters in water shall:

- (a) consist of approximately fifty (50) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 44</b>	<b>Microbiological Parameters in Water</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
E. Coli	0	MPN/100mL
Fecal Coliform	0	MPN/100mL
Total coliforms	0	MPN/100mL

E7.2 Item 45, Anions in water shall:

- (a) consist of approximately fifty (50) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 45</b>	<b>Anions in Water by Ion Chromatography</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Chloride	2	Mg/L
Sulfate	5	Mg/L

E7.3 Item 46, Dissolved Mercury in water shall:

- (a) consist of approximately fifty (50) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 46</b>	<b>Dissolved Mercury</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Dissolved Mercury	0.002	ug/L

E7.4 Item 47, Hexavalent Chromium in water shall:

- (a) consist of approximately fifty (50) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 47</b>	<b>Hexavalent Chromium</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Hexavalent Chromium	0.01	Mg/L

- E7.5 Item 48, Volatile Organic Compounds in water shall:
- (a) consist of approximately fifty (50) samples annually;
  - (b) have tests performed to include the following parameters:

<b>Item 48</b>	<b>VOLATILE ORGANIC COMPOUNDS IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
1,1,1,2-Tetrachloroethane	0.5	Ug/L
1,1,1-Trichloroethane	0.5	Ug/L
1,1,2,2-Tetrachloroethane	0.5	Ug/L
1,1,2-Trichloroethane	0.5	Ug/L
1,1-Dichloroethane	0.5	Ug/L
1,1-Dichloroethylene	0.5	Ug/L
1,2-Dichlorobenzene	0.5	Ug/L
1,2-Dichloroethane	0.5	Ug/L
1,2-Dichloropropane	0.5	Ug/L
1,3-Dichlorobenzene	0.5	Ug/L
1,4-Dichlorobenzene	0.5	Ug/L
2-Hexanone	20	Ug/L
Acetone	20	Ug/L
Benzene	0.5	Ug/L
Bromodichloromethane	0.5	Ug/L
Bromoform	0.5	Ug/L
Bromomethane	1	Ug/L
Carbon Disulfide	0.5	Ug/L
Carbon tetrachloride	0.5	Ug/L
Chlorobenzene	0.5	Ug/L
Dibromochloromethane	0.5	Ug/L
Chloroethane	1	Ug/L
Chloroform	0.5	Ug/L
Chloromethane	1	Ug/L
cis-1,2-Dichloroethylene	0.5	Ug/L
cis-1,3-Dichloropropene	0.5	Ug/L
Dichlorodifluoromethane	1	Ug/L
Ethyl Benzene	0.5	Ug/L
1,2-Dibromoethane	0.5	Ug/L
m+p-Xylenes	1	Ug/L
Methyl Ethyl Ketone	20	Ug/L
Methyl Isobutyl Ketone	20	Ug/L
MTBE	0.5	Ug/L
Dichloromethane	0.5	Ug/L
o-Xylene	0.5	Ug/L
Styrene	0.5	Ug/L
Tetrachloroethylene	0.5	Ug/L
Trihalomethanes (total)	2	Ug/L
Toluene	0.5	Ug/L
trans-1,2-Dichloroethylene	0.5	Ug/L
trans-1,3-Dichloropropene	0.5	Ug/L
Trichloroethylene	0.5	Ug/L
Trichlorofluoromethane	1	Ug/L
Vinyl chloride	0.5	Ug/L
Xylenes (Total)	1.5	Ug/L



E7.6 Item 49, Phenol in water shall:

- (a) consist of approximately fifty (50) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 49</b>	<b>Phenol</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Phenol	0.001	Mg/L

E7.7 Item 50, Petroleum Hydrocarbons in water shall:

- (a) consist of approximately fifty (50) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 50</b>	<b>PETROLEUM HYDRO. CCME F1 &amp; BTEX IN WATER, PETROLEUM HYDROCARBONS F2-F4 IN WATER, &amp; PETROLEUM HYDROCARBONS F4G IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
F1 (C6-C10)	100	Ug/L
F1 (C6-C10) – BTEX	100	Ug/L
F2 (C10-C16) Hydrocarbons	100	Ug/L
F3 (C16-C34) Hydrocarbons	100	Ug/L
F4 (C34-C50) Hydrocarbons	100	Ug/L
F4G (Grav. Heavy Hydrocarbons)	800	Ug/L

**E8. SECTION F (CLOSED LANDFILL LEACHATE)**

E8.1 Item 51, Microbiological parameters in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 51</b>	<b>Microbiological Parameters in Water</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
E. Coli	0	MPN/100mL
Fecal Coliform	0	MPN/100mL
Total coliforms	0	MPN/100mL

E8.2 Item 52, Anions in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 52</b>	<b>Anions in Water by Ion Chromatography</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Chloride	2	Mg/L
Sulfate	5	Mg/L

E8.3 Item 53, Total Mercury in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 53</b>	<b>Total Mercury</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Total Mercury	0.002	ug/L

E8.4 Item 54, Hexavalent Chromium in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 54</b>	<b>Hexavalent Chromium</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Hexavalent Chromium	0.01	Mg/L

E8.5 Item 55, Volatile Organic Compounds in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 55</b>	<b>VOLATILE ORGANIC COMPOUNDS IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
1,1,1,2-Tetrachloroethane	0.5	Ug/L
1,1,1-Trichloroethane	0.5	Ug/L
1,1,2,2-Tetrachloroethane	0.5	Ug/L
1,1,2-Trichloroethane	0.5	Ug/L
1,1-Dichloroethane	0.5	Ug/L
1,1-Dichloroethylene	0.5	Ug/L
1,2-Dichlorobenzene	0.5	Ug/L
1,2-Dichloroethane	0.5	Ug/L
1,2-Dichloropropane	0.5	Ug/L
1,3-Dichlorobenzene	0.5	Ug/L
1,4-Dichlorobenzene	0.5	Ug/L
2-Hexanone	20	Ug/L
Acetone	20	Ug/L
Benzene	0.5	Ug/L
Bromodichloromethane	0.5	Ug/L
Bromoform	0.5	Ug/L
Bromomethane	1	Ug/L
Carbon Disulfide	0.5	Ug/L
Carbon tetrachloride	0.5	Ug/L
Chlorobenzene	0.5	Ug/L
Dibromochloromethane	0.5	Ug/L
Chloroethane	1	Ug/L
Chloroform	0.5	Ug/L
Chloromethane	1	Ug/L
cis-1,2-Dichloroethylene	0.5	Ug/L
cis-1,3-Dichloropropene	0.5	Ug/L
Dichlorodifluoromethane	1	Ug/L
Ethyl Benzene	0.5	Ug/L

1,2-Dibromoethane	0.5	Ug/L
m+p-Xylenes	1	Ug/L
Methyl Ethyl Ketone	20	Ug/L
Methyl Isobutyl Ketone	20	Ug/L
MTBE	0.5	Ug/L
Dichloromethane	0.5	Ug/L
o-Xylene	0.5	Ug/L
Styrene	0.5	Ug/L
Tetrachloroethylene	0.5	Ug/L
Trihalomethanes (total)	2	Ug/L
Toluene	0.5	Ug/L
trans-1,2-Dichloroethylene	0.5	Ug/L
trans-1,3-Dichloropropene	0.5	Ug/L
Trichloroethylene	0.5	Ug/L
Trichlorofluoromethane	1	Ug/L
Vinyl chloride	0.5	Ug/L
Xylenes (Total)	1.5	Ug/L

E8.6 Item 56, Phenol in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 56</b>	<b>Phenol</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Phenol	0.001	Mg/L

E8.7 Item 57, Organic/Inorganic Carbon in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 57</b>	<b>Organic/Inorganic Carbon</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Dissolved Organic Carbon	1	Mg/L

E8.8 Item 58, Petroleum Hydrocarbons in water shall:

- (a) consist of approximately ten (10) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 58</b>	<b>PETROLEUM HYDRO. CCME F1 &amp; BTEX IN WATER, PETROLEUM HYDROCARBONS F2-F4 IN WATER, &amp; PETROLEUM HYDROCARBONS F4G IN WATER</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
F1 (C6-C10)	100	Ug/L
F1 (C6-C10) – BTEX	100	Ug/L
F2 (C10-C16) Hydrocarbons	100	Ug/L
F3 (C16-C34) Hydrocarbons	100	Ug/L
F4 (C34-C50) Hydrocarbons	100	Ug/L
F4G (Grav. Heavy Hydrocarbons)	800	Ug/L

**E9. SECTION G (FABRICATED SOIL SURFACE WATER)**

E9.1 Item 59, nutrients in water shall:

- (a) consist of approximately twenty (20) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 59</b>	<b>Nutrients</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Dissolved Nitrate (NO <sub>3</sub> )	0.044	Mg/L
Nitrate plus Nitrite (N)	0.014	Mg/L
Dissolved Nitrite (NO <sub>2</sub> )	0.033	Mg/L
Dissolved Ammonia (N)	0.15	Mg/L
Orthophosphate (P)	0.03	Mg/L
Total Kjeldahl Nitrogen	1.3	Mg/L
Dissolved Nitrite (N)	0.01	Mg/L
Dissolved Nitrate (N)	0.01	Mg/L

**E10. SECTION H (FABRICATED SOIL FEEDSTOCK)**

E10.1 Item 60, calculated parameters in soil shall:

- (a) consist of approximately six (6) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 60</b>	<b>Calculated Parameters</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
C:N Ratio	N/A	N/A
Nitrogen (N)	0.01	%

E10.2 Item 61, anions in soil shall:

- (a) consist of approximately six (6) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 61</b>	<b>Anions</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Soluble Chloride	10	Mg/L

E10.3 Item 62, elements in soil shall:

- (a) consist of approximately six (6) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 62</b>	<b>Hexavalent Chromium</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Hexavalent Chromium	0.08	Mg/kg

E10.4 Item 63, nutrients in soil shall:

- (a) consist of approximately six (6) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 63</b>	<b>Nutrients</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Available (KCL) Ammonia (N)	2	Mg/kg
Available (NH <sub>4</sub> F) Nitrogen (N)	10	Mg/kg
Available (NH <sub>4</sub> F) Phosphorus (P)	5	Mg/kg
Available (NH <sub>4</sub> OAc) Potassium (K)	10	Mg/kg
Available (CaCl <sub>2</sub> ) Sulphur (S)	20	Mg/kg
Total Kjeldahl Nitrogen	600	Mg/kg

E10.5 Item 64, physical properties in soil shall:

- (a) consist of approximately six (6) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 64</b>	<b>Physical Properties</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
% sand by hydrometer		%
% silt by hydrometer		%
Clay Content		%
Soluble (2:1) pH		pH
Loss on Ignition	1	%
Texture		
Moisture	0.3	%
Bulk Density	1	Kg/m <sup>3</sup>
Total Organic Carbon (C)	0.2	%

E10.6 Item 65, soluble parameters in soil shall:

- (a) consist of approximately six (6) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 65</b>	<b>Soluble Parameters</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Soluble Conductivity	0.02	dS/m
Soluble pH		
Saturation %		%
Soluble Calcium (Ca)	5	Mg/L
Soluble Magnesium (Mg)	5	Mg/L
Soluble Potassium (K)	20	Mg/L
Soluble Sodium (Na)	5	Mg/L
Soluble Sulphur (S)	30	Mg/L
Sodium Adsorption Ratio	0.1	

E10.7 Item 66, total metals in soil shall:

- (a) consist of approximately six (6) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 66</b>	<b>Total Metals</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Total Aluminum (Al)	100	Mg/kg
Total Antimony (Sb)	0.1	Mg/kg
Total Arsenic (As)	0.5	Mg/kg
Total Barium (Ba)	0.1	Mg/kg
Total Beryllium (Be)	0.2	Mg/kg
Total Bismuth (Bi)	0.1	Mg/kg
Total Cadmium (Cd)	0.05	Mg/kg
Total Calcium (Ca)	100	Mg/kg
Total Chromium (Cr)	1	Mg/kg
Total Cobalt (Co)	0.3	Mg/kg
Total Copper (Cu)	0.5	Mg/kg
Total Iron (Fe)	100	Mg/kg
Total Lead (Pb)	0.1	Mg/kg
Total Magnesium (Mg)	100	Mg/kg
Total Manganese (Mn)	0.2	Mg/kg
Total Mercury (Hg)	0.05	Mg/kg
Total Molybdenum (Mo)	0.1	Mg/kg
Total Nickel (Ni)	0.8	Mg/kg
Total Phosphorus (P)	10	Mg/kg
Total Potassium (K)	100	Mg/kg
Total Selenium (Se)	0.5	Mg/kg
Total Silver (Ag)	0.05	Mg/kg
Total Sodium (Na)	100	Mg/kg
Total Strontium (Sr)	0.1	Mg/kg
Total Thallium (Tl)	0.05	Mg/kg
Total Tin (Sn)	0.1	Mg/kg
Total Titanium (Ti)	1	Mg/kg
Total Vanadium (V)	2	Mg/kg
Total Zinc (Zn)	1	Mg/kg
Total Zirconium (Zr)	0.5	Mg/kg

**E11. SECTION I (FABRICATED SOIL)**

E11.1 Item 67, inorganics in soil shall:

- (a) consist of approximately twenty (20) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 67</b>	<b>Inorganics</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Organic Matter	0.35	%
Total Organic Carbon (C)	0.2	%

E11.2 Item 68, nutrients in soil shall:

- (a) consist of approximately twenty (20) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 68</b>	<b>Nutrients</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Available (KCL) Ammonia (N)	2	Mg/kg
Available (NH4F) Nitrogen (N)	10	Mg/kg
Available (NH4F) Phosphorus (P)	5	Mg/kg
Available (NH4OAc) Potassium (K)	10	Mg/kg
Available (CaCl2) Sulphur (S)	20	Mg/kg
Total Kjeldahl Nitrogen	600	Mg/kg

E11.3 Item 69, soluble parameters in soil shall:

- (a) consist of approximately twenty (20) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 69</b>	<b>Soluble Parameters</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Soluble Conductivity	0.02	dS/m
Soluble pH		
Saturation %		%

E11.4 Item 70, physical properties in soil shall:

- (a) consist of approximately twenty (20) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 70</b>	<b>Physical Properties</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Moisture	0.3	%

E11.5 Item 71, elements in soil shall:

- (a) consist of approximately twenty (20) samples annually;
- (b) have tests performed to include the following parameters:

<b>Item 71</b>	<b>Elements</b>	
<b>Parameter</b>	<b>MDL</b>	<b>Units</b>
Total Antimony (Sb)	1	Mg/kg
Total Arsenic (As)	2	Mg/kg
Total Barium (Ba)	2	Mg/kg
Total Beryllium (Be)	0.8	Mg/kg
Total Cadmium (Cd)	0.1	Mg/kg
Total Chromium (Cr)	2	Mg/kg
Total Cobalt (Co)	1	Mg/kg
Total Copper (Cu)	2	Mg/kg
Total Lead (Pb)	1	Mg/kg
Total Molybdenum (Mo)	0.8	Mg/kg
Total Nickel (Ni)	2	Mg/kg
Total Selenium (Se)	1	Mg/kg
Total Silver (Ag)	0.1	Mg/kg
Total Thallium (Tl)	0.2	Mg/kg
Total Tin (Sn)	2	Mg/kg
Total Uranium (U)	0.4	Mg/kg
Total Vanadium (V)	2	Mg/kg
Total Zinc (Zn)	20	Mg/kg

**E12. TURN AROUND TIME**

E12.1 The Turn Around Time shall be;

- (a) Based on the date that the samples were received (at the testing laboratory) and the reporting date.
- (b) The test is considered fulfilled by submitting an official report or preliminary report in accordance with the specifications outlined under E2.2 to E2.9.

E12.2 The Contractor shall not exceed the “extraction time”, “hold time” or “analysis time” written in their own standard operating procedure regardless of the listed Turn-around Times.