



INVITATION TO TENDER NO. PS20220171 (the “ITT”)

**CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL
(FOR PREQUALIFIED VENDORS)**

Tenders are to be addressed to the Supply Chain Management office, 4th Floor, City of Vancouver, 453 West 12th Avenue, Vancouver, British Columbia, Canada, V5Y 1V4, and received at bids@vancouver.ca prior to 3:00pm on Wednesday, April 13th, 2022 (the “Closing Time”).

Tenders will not be publicly opened. Tender results can be found within 48 hours of the Closing Time at the following website:

<http://vancouver.ca/doing-business/unverified-tender-results.aspx>

NOTES:

1. All Tenders must be submitted exclusively by email to bids@vancouver.ca and received by the City thereby prior to the Closing Time.
2. Do not submit physical copies of Tenders.
3. All time requirements in this ITT refer exclusively to Pacific Time Zone times in Vancouver, BC.
4. The dates and times of the City’s receipt of Tenders hereunder will be determined exclusively by electronic time stamps recorded on the automated email receipts sent to Tenderers on submission of their Tenders, which time stamps in turn are synchronized to the Network Time Protocol (NTP) provided by the National Research Council of Canada adjusted to local Pacific Time Zone.
5. All queries related to this ITT should be submitted in writing by email to:

Brian Brennan, Contracting Specialist

Email: brian.brennan@vancouver.ca

(the “Contact Person”)

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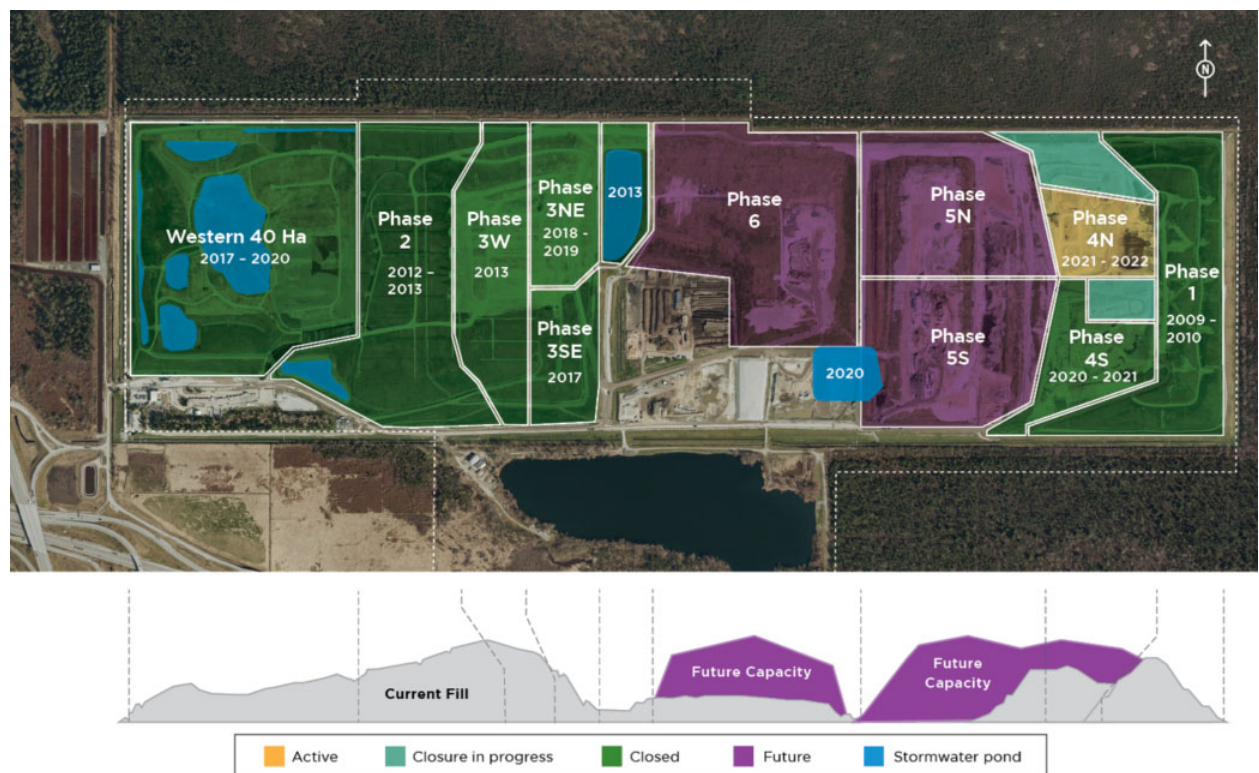
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1.0 OVERVIEW OF PROJECT

The City of Vancouver invites tenders from prequalified construction contractors for provision of certain landfill gas works expansion and upgrade work at the City's landfill facility located at 5400 72nd Street in Delta, BC (the "Landfill"), involving the replacement of the South gas header pipe, installation of leachate collectors and number of vertical gas wells (provisional items).

The Landfill has been in operation since 1966. It currently serves approximately 70% of the Metro Vancouver region. Its existence and operation are authorized by the BC Ministry of Environment and Climate Change (MOE), under an Operational Certificate (OC) issued to the City for it, and under the Metro Vancouver's *Integrated Solid Waste and Resource Management Plan* (ISWRMP). Additional information about the Landfill can be found in the Landfill's annual report at <http://vancouver.ca/home-property-development/annual-reports-for-landfill-and-solid-waste-divisions.aspx>

The Landfill's current filling and closure sequence is shown in general terms in the diagram below.



1.1 Work Scope

The scope in this project includes the supply and installation of the following components:

- Replacement of South Gas Header Pipe (from SE corner of Phase 3SE to SW corner of Phase 1)
- Phase 5 S Lift 3 leachate collectors
- 4 vertical gas wells in Phase 4

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The detailed Work requirements are contained in the Specifications and Drawings.

The Work is to be carried out in coordination with ongoing Landfill operations and any other construction projects that may be occurring there at the same time.

1.2 City Provided

Following contract award, the City's Consultant ("Engineer" under the Contract) will provide "Issued for Construction" Drawings and Specifications for the project. The Consultant will also conduct a survey of the area immediately prior to the start of the Work.

1.3 Location

The Work site is further described in the Tender Documents. Access to it for performance of the Work will be available through the Landfill's main entrance. The Contractor will be required to weigh and obtain weigh slips at the scale for all Work related loads to be delivered to the Work site.

1.4 Schedule

The following table shows the general schedule contemplated for the Work and will be included as a requirement in the contract.

Milestone	Date
Notice of Award	June 9, 2022
Project Kickoff Meeting	June 30, 2022
Contractor Mobilization	July 11, 2022
Substantial Performance	November 10 th , 2022
Total Performance	November 30, 2022

- 1.5 IF A POTENTIAL TENDERER BELIEVES THAT THE CITY MAY BE UNABLE TO SELECT IT DUE TO A CONFLICT OF INTEREST, BUT IS UNCERTAIN ABOUT THIS, THE POTENTIAL TENDERER IS URGED TO CONTACT THE CONTACT PERSON AS SOON AS POSSIBLE WITH THE RELEVANT INFORMATION SO THAT THE CITY MAY ADVISE THE POTENTIAL TENDERER REGARDING THE MATTER. SEE SCHEDULE "L" FOR AN INDICATION OF THE TYPES OF CONFLICTS OF INTEREST THAT OFTEN ARISE.

2.0 SUSTAINABILITY

- 2.1 The City's Procurement Policy, Ethical Purchasing Policy and related Supplier Code of Conduct found at <http://vancouver.ca/doing-business/selling-to-and-buying-from-the-city.aspx> align the City's approach to procurement with its corporate social, environmental and economic sustainability values and goals. They evidence the City's commitment to maximize benefits to the environment through product and service selection, and to ensure safe and healthy workplaces, where human and civil rights are respected. Each Tenderer is expected to adhere to the supplier performance standards set forth in the Supplier Code of Conduct.
- 2.2 A Contractor is to provide environmentally sensitive products or services wherever possible. Where there is a requirement that a Contractor supply materials, and where such materials may cause adverse environmental effects, each Tenderer should indicate the nature of the hazard(s) in its Tender. Furthermore, each Tenderer should advise the City of any known alternatives or substitutes for such materials that would mitigate such adverse effects.

3.0 TENDER DOCUMENTS

3.1 The “Tender Documents” consist of the following and include the documents referred in Section 3.3 below:

- (a) Part A - Introduction and appendices:
 - (i) Appendix 1 - Response Notification Form;
- (b) Part B - Terms and Conditions of ITT Process;
- (c) Part C - Form of Tender (including all schedules),
- (d) Part D - Form of Agreement (including all schedules);
- (e) The sample purge plan titled “Sample Purge Plan Procedure - PPP 16.3 Phase 3NE Header Tie In - min” (available separately, on the FTP site described below);
- (f) Written specifications for the Work (“Specifications”) (available separately, as noted below);
- (g) drawings for the Work (“Drawings”) (available separately, as noted below); and
- (h) all addenda or amendments to the ITT, and all questions and answers in connection with the ITT, issued in writing by the City prior to the Closing Time, as well as any addenda, amendments or questions and answers issued in writing by the City after the Closing Time and accepted in writing by the Tenderers.

3.2 The Specifications and Drawings are incorporated herein by reference and will be available for Tenderers at the following FTP site:

<https://webtransfer.vancouver.ca/>

The user ID is: PS20210810dl@coveftp01

The password is: cr2hiTeF (The password is case sensitive)

3.3 The Specifications and Drawings include the “Master Municipal Specifications and Standard Detail Drawings” contained within Volume II of the Master Municipal Construction Document, except that all of Volume I and the following parts of Volume II thereof are hereby expressly excluded from the Specifications and Drawings and from ITT: Instructions to Tenderers - Part II. General Conditions (including Schedule 17.5.3 Letter Agreement with Referee, Changes and Extra Work flow chart, and Dispute Resolution Process flow chart).

4.0 MANDATORY INFORMATION MEETING

4.1 Tenderers are required to attend the mandatory information meeting (the “**Mandatory Information Meeting**”) on March 17th, 2022 commencing at 1:00 p.m.

4.2 The Mandatory Information Meeting will take place at the Landfill.

4.3 All persons attending the Mandatory Information Meeting on behalf of Tenderers must bring their own personal protective equipment (PPE) consisting of steel toe footwear, high visibility vests, and safety glasses.

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- 4.4 Tenderers are asked to pre-register for the Mandatory Information Meeting by submitting the Mandatory Information Meeting Attendance Form (Appendix 1) to the Contact Person by email prior to Wednesday, March 16, 2022 at 3:00 p.m.

5.0 ADMINISTRATIVE REQUIREMENTS

- 5.1 Tenderers are asked to indicate their intentions to submit Tenders by submitting the Response Notification Form (Appendix 1) to the Contact Person by email on or before Wednesday, March 16, 2022.
- 5.2 It is the sole responsibility of each Tenderer to check the City's website at <http://vancouver.ca/doing-business/open-bids.aspx> regularly for addenda, amendments and questions and answers related to the ITT, which the City may issue at any time during the process, and for any reason, at its discretion.

6.0 CONDUCT OF ITT - INQUIRES AND CLARIFICATIONS

- 6.1 The City will have conduct of the ITT, and all communications are to be directed only to the Contact Person named on the cover page.
- 6.2 It is the responsibility of each Tenderer to thoroughly examine the Tender Documents and satisfy itself as to the full requirements of the ITT and their acceptability to the Tenderer.
- 6.3 The City welcomes inquiries, requests for clarification or comments from registered Tenderers. All inquiries or comments to the City must be in written form only. All inquiries, requests for clarification and comments must be e-mailed to brian.brennan@vancouver.ca prior to Wednesday, April 6, 2022, and must in each case be addressed to the attention of the Contact Person. In response to inquiries, requests for clarification or comments, the City, in its sole discretion, may make amendments to the ITT or may issue questions and answers to all Tenderers who have submitted a Response Notification Form and post them on the City's website.

7.0 ELIGIBILITY TO PARTICIPATE

- 7.1 This ITT is restricted to Tenderers who, pursuant to the City's *RFEOI No. PS20190859 Vancouver Landfill Gas Works - Contractor Prequalification*, have been pre-qualified to submit tenders.
- 7.2 Notwithstanding Section 7.1, the City reserves the unrestricted right to consider or accept Tenders which are submitted by affiliates or joint venture partners of such pre-qualified Tenderers where, prior to or after the Closing Time, the Tenderer or its affiliate or joint venture partner provides documentation satisfactory to the City, in the City's sole discretion, that such entity or entities would have been pre-qualified by the City had such entity or entities initially applied in lieu of the pre-qualified entity.
- 7.3 The pre-qualified Tenderers are:
- BD Hall Constructors Corp.
- JJM Construction Ltd.
- King Hoe Excavating Ltd.
- Jacob Bros. Construction Inc.

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APPENDIX 1 (PART A) - RESPONSE NOTIFICATION FORM



CITY OF VANCOUVER
Supply Chain Management

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To acknowledge your intent to attend the Mandatory Information Meeting and to ensure that you receive the required information, please submit this form to the person identified below in accordance with the ITT:

Brian Brennan
City of Vancouver
Email: brian.brennan@vancouver.ca

Your details:

Tenderer's Name:

"Tenderer"

Address:

Telephone:

Fax: _____

Key Contact Person:

E-mail:

We will attend the Mandatory Information Meeting for: ITT No. PS20220171, "CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM - VANCOUVER LANDFILL".

Signature

Name of Authorized Signatory (Please print)

E-mail Address (Please print)

Date

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APPENDIX 2 (PART A) - RESPONSE NOTIFICATION FORM



CITY OF VANCOUVER
Supply Chain Management

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To acknowledge your intent to submit a Tender and to ensure that you receive the required information, please submit this form to the person identified below in accordance with the ITT:

Brian Brennan
City of Vancouver
Email: brian.brennan@vancouver.ca

Your details:

**Tenderer's Legal
Name:**

"Tenderer"

Address:

Telephone:

Fax: _____

Key Contact Person:

E-mail:

We **WILL** ☐ / **WILL NOT** ☐ submit a Tender in response to ITT No. PS20220171, "CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM - VANCOUVER LANDFILL".

Signature

Name of Authorized Signatory (Please print)

E-mail Address (Please print)

Date

1.0 DEFINITIONS AND INTERPRETATION

1.1 Definitions

The following capitalized terms have the meanings set out below when used in the Tender Documents, unless the context requires otherwise:

- (a) **“City”** means the City of Vancouver;
- (b) **“Closing Time”** has the meaning set out on the cover page of the ITT;
- (c) **“Contract”** means a contract substantially in the form of Part D - Form Agreement, to be entered into between the City and a successful Tenderer;
- (d) **“Contractor”** means a Tenderer, the Tender of which the City has accepted, and which Tenderer has consequently entered into a Contract;
- (e) **“Drawings”** means the portion of the Tender Documents consisting of the graphic and pictorial representations of the Work or Work requirements;
- (f) **“Engineer”** means the architect, engineer or other professional consultant who will act as the City’s agent for the purpose of managing and administering a Contract, who may be an employee of the City or an independent consultant engaged by the City on its behalf;
- (g) **“Form of Agreement”** means the form of agreement contained in the Part D - Form of Agreement part of the ITT;
- (h) **“Form of Tender”** means the form of tender prescribed in the Part C - Form of Tender part of the ITT;
- (i) **“GST”** means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time;
- (j) **“Health and Safety Plan”** has the meaning set out in Part B - Terms and Conditions of ITT Process and the Specifications (Part D- Form of Agreement, Schedule 2);
- (k) **“ITT”** means this Invitation to Tender No. PS20220171 CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL, including all Tender Documents;
- (l) **“Information and Privacy Legislation”** includes the *Freedom of Information and Protection of Privacy Act* (British Columbia) and the regulations thereunder;
- (m) **“Losses”** means, in respect of any matter, all:
 - (i) direct and indirect; and
 - (ii) consequential,

claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation, all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement, whether from a third person or otherwise);

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- (n) **“Notice of Award”** has the meaning set out in Part C - Form of Tender;
- (o) **“Notice to Proceed”** has the meaning set out in Part C - Form of Tender;
- (p) **“PST”** means the provincial sales tax payable and imposed pursuant to the *Provincial Sales Tax Act* (British Columbia), as amended or replaced from time to time;
- (q) **“Specifications”** means the portion of the Tender Documents consisting of the written requirements and standards for products, systems, workmanship, quality, and the services necessary for the performance of the Work;
- (r) **“Substantial Performance”** means substantial performance of the Work or any portion thereof to which the concept of Substantial Performance is intended to apply such that, though not necessarily totally complete, it is ready for full use as intended and/or is fully functional as intended as a completed project and the Engineer in writing in accordance with the Contract has certified it as such;
- (s) **“Tender”** means a tender submitted to the City in response to the ITT;
- (t) **“Tender Contract”** means the contract between the City and each Tenderer governing the ITT process;
- (u) **“Tender Documents”** means the documents identified as such in Part A - Introduction part of the ITT;
- (v) **“Tenderer”** means a person or organization submitting a Tender;
- (w) **“Tender Price”** means the monetary amount a Tenderer proposes in its Tender, in the space provided therefor in the Form of Tender, as its all-inclusive, total fee, including, without limitation, all applicable taxes, to carry out and complete the Work in accordance with the Contract;
- (x) **“Total Performance”** means, as certified in writing by the Engineer in accordance with the Contract, the total, complete performance of the Work, or any part thereof to which the concept of Total Performance is intended to apply, as required under the Contract, including correction of all deficiencies, but excluding any warranty work required during warranty periods under the Contract;
- (y) **“Work”** means the total construction and related services required by the Tender Documents; and
- (z) **“Work Site” or “Site”** means the place or places where the Work is to be carried out.

All other capitalized terms used in the ITT have the meanings given to them elsewhere in the ITT.

1.2 Interpretation

- (a) In the Tender Documents, any reference to the masculine, the feminine or the neuter includes the others unless the context requires otherwise. Also, any reference to the singular includes the plural where appropriate.
- (b) If there is a conflict between (i) the Specifications and Drawings and (ii) the other Tender Documents, the other Tender Documents shall prevail over the Specifications and Drawings.

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- (c) In these Tender Documents, the word “should” and the terms “is asked to” and “are asked to” are used to denote actions or Tender inclusions that, while not mandatory, are strongly recommended. In contrast, the terms “will”, “shall”, “must”, “is to”, “are to”, “is required to” and “are required to” are used to denote mandatory requirements of the ITT. If a Tenderer is uncertain as to whether or not a particular action or Tender inclusion is mandatory, the Tenderer should submit an inquiry to the Contact Person.

2.0 SUBMISSION INSTRUCTIONS

- 2.1 Each Tenderer must complete its Tender on the Form of Tender and submit its Tender in accordance with the instructions set forth on the cover page of the ITT and elsewhere herein.
- 2.2 Any Tender received after the Closing Time may be returned unopened to the Tenderer.
- 2.3 Faxed or emailed Tenders and/or other documents will not be accepted.
- 2.4 Each Tender must be signed by an authorized signatory or authorized signatories of the Tenderer (as necessary for due execution on behalf of the Tenderer). Each Tender by a company or partnership should specify the full legal name of the legal entity submitting the Tender.
- 2.5 All blank spaces in the Form of Tender should be filled in and all schedules completed. Any failure by a Tenderer to complete the Form of Tender may result in preference being given to competing Tenderers. All prices and notations should be legibly written in a non-erasable medium. Erasures, interlineations or other corrections should be initialled by an authorized signatory of the Tenderer.
- 2.6 Subject to any alternatives or options in respect of which the City requests pricing or other information in a Schedule to the Form of Tender, Tenders are to be all inclusive and without qualification or condition.
- 2.7 The City may, at any time and for any reason, extend the Closing Time by means of a written amendment published on the City’s website, as set out in Part A - Introduction.
- 2.8 A Tenderer that has already submitted a Tender may amend its Tender prior to the Closing Time: a) by submitting an amendment identifying a plus or minus variance to the Tenderer’s Tender Price; or b) by sending in a completely new Tender, clearly indicating it replaces the previously submitted Tender. Any such revision must clearly identify the ITT number and the Closing Time. A Tender revision submitted as aforesaid shall effectively amend the Tender and the City shall only review and evaluate the Tender as amended.
- 2.9 The City will not be responsible for any cost incurred by any Tenderer in preparing a Tender.

3.0 BONDS

- 3.1 Tenders will be irrevocable and each offer made therein shall remain open for acceptance by the City for a period of ninety (90) calendar days after the Closing Time. Each Tender must be accompanied by a bid bond valid for a period of ninety (90) calendar days commencing on the Closing Time, payable to the “City of Vancouver”, in the amount of ten percent (10%) of the Tender Price, and not a dollar amount, as a guarantee of the due execution of a Contract and the delivery of the performance bond and labour and materials payment bond required by the Form of Tender. The forms of these bonds are to be those issued by the Canadian Construction Documents Committee as follows:

Bid Bond:

CCDC 220 (latest)

Performance Bond: CCDC 221 (latest)

Labour and Material Payment Bond: CCDC 222 (latest)

- 3.2 Since Tenders are to be submitted by email only, scanned copies of required bid bonds are acceptable, provided each such bid bond copy is accompanied by a written acknowledgement from the surety issuing the bid bond that the scanned copy of it submitted with the Tender is a true, authentic and complete copy of the bid bond as issued and as such the City may make full use of it in accordance with its terms and conditions as if it was an original copy thereof.
- 3.3 Each Tender must be accompanied by a “Consent of Surety”, substantially in the form provided as a schedule to the Form of Tender, duly completed by a surety company authorized and licensed to carry on business in British Columbia.
- 3.4 The bid bonds of unsuccessful Tenderers will be returned to them as soon as possible after the Contract is awarded and the bid bond of the Tenderer to whom the award is made will be returned upon execution of the Contract, delivery of a performance bond for 50% of the Tender Price and a labour and material payment bond for 50% of such price, commencement of the Work, and compliance with any other conditions set out in the Form of Tender. The cost of all bond premiums must be included in the Tender Price.
- 3.5 All bonds must be issued by a surety company authorized and licensed to carry on business in British Columbia.

4.0 TENDER PRICE

- 4.1 Subject to any adjustment for changes to the Work, which is approved by the City in accordance with the Tender Documents or Contract Documents, the Tender Price shall be the maximum compensation owing to the Contractor for the Work and the Contractor’s compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing and all other costs and expenses whatsoever incurred in performing the Work.
- 4.2 If unit prices or other price breakdowns are requested in a schedule to the Form of Tender, such information should be included in the Tender. Furthermore, if such unit prices or other price breakdowns are requested in a schedule to the Form of Tender, such amounts may be used to compute interim progress payments and will be reviewed by the City in its evaluation of Tenders; therefore Tenderers should ensure that such amounts accurately reflect their costs for each item. A Tenderer may be required to justify any submitted unit price or other price breakdown.
- 4.3 If an itemized breakdown of the Tender Price is requested in a schedule to the Form of Tender, the City may delete any items in order to meet any budget limitation and award a Contract for only the remaining items to a Tenderer who is agreeable thereto.

5.0 ACCEPTANCE OF TENDERS

- 5.1 Despite anything to the contrary contained in the ITT or the Tender Documents:
- (a) the City need not accept the Tender with the lowest Tender Price or any Tender at all and may reject any and all Tenders at any time, cancel and withdraw the ITT at any time without prior notice or further explanation or accept any Tender, regardless of Tender Price, that is considered advantageous to the City;
 - (b) acceptance of any Tender in whole or in part is contingent on funds being approved and a contract award being made by, or pursuant to authority delegated by, Vancouver City

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Council and the compliance of the Tenderer with the conditions required to be satisfied upon receipt of a Notice of Award;

- (c) Tenders which do not conform to the requirements of the ITT may or may not be disqualified or rejected, and the City may or may not waive any non-conformity, including any material non-conformity, irregularity or anomaly, and including any non-compliance as to the timing of delivery of anything required by or any other requirements of the ITT, and the City may at its sole discretion elect to retain for consideration Tenders which are non-conforming because they do not contain the content or form required by the ITT or because they have not complied with the process for submission set out in the ITT.
- (d) Where the City, in its sole discretion, is of the view that there is anything in any Tender(s) which causes uncertainty about the meaning or intent of any part(s) thereof and which cannot be resolved or clarified from examination of the contents of the Tender(s), then whether or not any such uncertainty actually exists on the face of the Tender, the City may, at any time prior to any Contract award, solicit and/or accept clarification therefor from the Tenderer. Such clarifications may include the City's solicitation and/or acceptance of further documentation or information which will then form part of the Tender. The City's solicitation and/or acceptance of such clarifications from any Tenderers may be exercised without any duty or obligation to inform any other Tenderers thereof or to allow them to modify their Tenders in any way, and the City will have no liability to any Tenderer for any Losses of any kind as a result of any such solicitations and/or acceptances of such clarifications.
- (e) The City's acceptance of any Tender will be based on the City's evaluation of Tenders to determine which of them, if any, in the City's opinion, offers the best overall value to the City taking into account its objectives, goals, resources, policies and any other considerations it may wish to apply. While Tender Price will be an important consideration in that evaluation, the City may take into account other factors affecting overall value, including, without limitation, any concerning methodology proposed, sustainability or Tenderer work history, reputation or experience. The City may also consider overall net impact of Tender Prices on City finances (including both capital and operating costs).
- (f) If the City determines that all Tender Prices are too high or that none of the Tenders offers the City the overall value it seeks, all Tenders may be rejected.
- (g) The City, on its own initiative, prior to accepting any Tender, may negotiate and reach agreement with any one or more Tenderers, whose Tenders, in the City's opinion, offer it the best overall value, to change the scope of the Work and/or modify a Tender and/or the Contract, and the City may do so in each and every case without having any duty or obligation of any kind to inform any other Tenderers thereof or to allow them to modify their Tenders in any way as a result thereof, and the City will have no liability to any other Tenderer for any Losses of any kind resulting therefrom. Notwithstanding the foregoing, all Tenders when submitted to the City pursuant to the ITT must nevertheless conform to the requirements of the ITT and must not propose any variations to the Work or the Contract.
- (h) Each Tenderer acknowledges and agrees that the City will not in any circumstances be liable to the Tenderer for any Losses of any kind it may suffer, incur or experience as a result or arising out of its submission of a Tender hereunder, the City's acceptance or non-acceptance of the Tender or any part thereof, any breach by the City of the Tender Contract between the City and the Tenderer or any Tender acceptance and/or Contract award made not strictly in accordance with the contents of ITT.

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PART B - TERMS AND CONDITIONS OF ITT PROCESS

- (i) The City may award a Contract on the basis of policies and preferences not stated in the Tender Documents or otherwise than as stated in the Tender Documents.
- (j) Prior to any Contract award, a Tenderer may be required to demonstrate financial stability. Should the City so request, a Tenderer may be required to provide annual financial reports or a set of financial statements prepared by an accountant.
- (k) Any and all City guidelines or policies applicable to the ITT will not give rise to any legal rights on the part of any Tenderer, Contractor, subcontractor, supplier, or other person as against the City and will in no case create any liability on the part of the City. In particular, but without limitation to the foregoing, the City's Procurement Policy, as amended or replaced from time to time, is merely an internal guideline for the City and does not create any legal rights for any Tenderer or anyone else or impose upon the City any legal obligations to any Tenderer or anyone else with respect to the ITT.
- (l) The City may reject any Tender by a Tenderer that has engaged in collusion with another Tenderer or otherwise attempted to influence the outcome of the ITT other than through the submission of its Tender.
- (m) The City, in its sole discretion, may elect to accept for consideration Tenders that contain conditions or qualifications that are in the nature of corrections of typos or internal inconsistencies in the ITT or the Form of Agreement or that represent immaterial changes to the Form of Agreement and do not consist of changes of substance or changes to allocations of risk, or with respect to the scope of any Work, that are for the avoidance of uncertainty only and do not in substance involve any deviation from the requirements of the ITT. This Section 5.1(m) is a reservation of rights for the benefit of the City and no Tenderer may rely on this paragraph to qualify its Tender.

6.0 AWARD OF CONTRACT

- 6.1 Award of a Contract will be subject to approval by, or pursuant to authority delegated by, the City's Mayor and Council and the Tenderer's compliance with the conditions required to be met upon receipt of the Notice of Award.
- 6.2 Any successful Tenderer will become a Contractor and will be required to sign a Contract with the City, subject to any amendments approved by the City in writing.

7.0 EXAMINATION OF TENDER DOCUMENTS

- 7.1 Each Tenderer should carefully examine all Tender Documents and must also satisfy itself of the extent of the Work. Each Tenderer must make its own estimate of the facilities and difficulties attending the performance and the completion of the Work.
- 7.2 No allowance will be made on behalf of a Contractor for any error, omission or negligence on the Contractor's part or for non-compliance with the requirements of the foregoing clause 7.1.

8.0 SITE EXAMINATION/PRE-SUBMISSION DUE DILIGENCE BY TENDERER

- 8.1 Tenderers should make a careful examination of the Work Site and investigate and satisfy themselves at their own risk and expense as to all matters relating to the nature and extent of the Work, the means of access to the Work Site, the extent of required coordination with public use of adjacent areas, and any and all matters which are referred to in the Specifications and Drawings and other Tender Documents, or which are necessary for the full and proper completion of any Work or are required by the conditions under which it must be performed. No allowance

will be made subsequently for any error, negligence, interpretation, or misinterpretation on a Contractor's part.

- 8.2 The City and the Engineer do not make any representations or warranties concerning the completeness or accuracy of Work Site and geotechnical information (if any) provided in or with the Tender Documents, and each Tenderer must evaluate such information as part of its overall assessment of actual Work Site conditions.
- 8.3 If any Tenderer wishes to evaluate any Work Site conditions, and, for that purpose, requires access or documents from the City beyond the access and documents already provided for in the ITT, the City encourages the Tenderer to submit a written request to the City as far in advance of the Closing Time as is possible. The City will then consider whether or not to facilitate the request. In response to such a request, the City may elect to, itself, undertake a particular study and distribute the results to all Tenderers.

9.0 INTERPRETATION AND CLARIFICATIONS

- 9.1 If any Tenderer is in doubt as to the correct interpretation of any part of the Specifications, Drawings, or other Tender Documents, the Tenderer should request an interpretation of the same from the City by the time stated in Part A - Introduction, Section 6.3. In the absence of such a request, the Tenderer's Tender will be presumed to be based upon the interpretation that may be subsequently given in accordance with the Contract Documents, after award of a Contract.
- 9.2 Prior to the Closing Time, requests for clarification of the Specifications, Drawings, or other Tender Documents may be answered in writing by the City and sent to all prospective Tenderers who have submitted a Response Notification Form on or before the indicated deadline. The City is not responsible for any other explanations or interpretations of the Specifications, Drawings or other Tender Documents.

10.0 PRODUCT APPROVAL

- 10.1 Wherever any material, machinery, equipment or fixture (any "**Product**") is specified or shown in the Tender Documents by reference to a proprietary item, product or model number, catalogue number, manufacturer or trade name or similar reference, each Tenderer obligates itself to submit its Tender and, if applicable, accept award of a Contract based upon the use of such Product. Use of any such reference in the Tender Documents is intended to establish the measure of quality which the City (or its Engineer) has determined to be requisite and necessary for the Work. Where two or more Products are shown or specified, the Contractor has the option of which to use.
- 10.2 For approval of Products other than those specified in the manner described in the preceding paragraph, a Tenderer should submit in writing to the City, at least five business days prior to the Closing Time, a request for approval thereof. Such requests for approval must clearly define and describe the Product for which approval is requested. Requests should be accompanied by manufacturer's literature, specifications, drawings, cuts, performance data or other information necessary to completely describe the items. Approval by the City will be given only in the form of an addendum to the Specifications issued by the City.
- 10.3 Approvals of non-specified Products pursuant to the preceding paragraph shall be effective only if such Products conform technically to the Specifications.

11.0 INSURANCE

- 11.1 Each Tenderer should ensure that it can maintain the insurance described in the Form of Agreement (Part D).

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PART B - TERMS AND CONDITIONS OF ITT PROCESS

11.2 The Tenderer should complete and submit the “Certificate of Existing Insurance” attached as a Schedule to the Form of Tender, together with the “Undertaking of Insurance” attached as a Schedule to the Form of Tender.

11.3 Following Contract award, a successful Tenderer will be required to complete a “Certificate of Insurance” for the Work, a copy of which is attached as a schedule to the Form of Tender.

12.0 WORKSAFEBC

12.1 The Tenderer should ensure that it can comply with all WorkSafeBC requirements, as described in the Form of Agreement (Part D).

13.0 LABOUR RATES AND EQUIPMENT

13.1 Tenderers should provide, if requested in a schedule to the Form of Tender, the force account labour and equipment rates setting out the all-inclusive hourly rates for all applicable types of equipment as well as the all-inclusive hourly rates for all applicable categories of labour, which rates will then apply pursuant to any Contract.

14.0 LISTS OF SUBCONTRACTORS AND SUPPLIERS

14.1 Tenderers must provide, if requested in a schedule to the Form of Tender, lists of proposed subcontractors and suppliers, specifying the name and address of, and the portion of the Work to be completed by, or the equipment or materials to be supplied by, each proposed subcontractor or supplier.

14.2 The City reserves the right to object to any of the proposed subcontractors or suppliers listed in a Tender. If the City objects to a listed subcontractor or supplier, then the City will permit a Tenderer to propose a substitute subcontractor or supplier acceptable to the City. A Tenderer will not be required to make such a substitution and, if the City objects to a listed subcontractor or supplier, the Tenderer may, rather than propose a substitute subcontractor or supplier, consider its Tender rejected by the City and, by written notice, withdraw its tender. The City shall, in that event, return the Tenderer’s bid security.

15.0 TAXES AND FEES

15.1 The successful Tenderer will be required to obtain and pay for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work. The City will not be liable in any manner for the same, and the successful Tenderer agrees to indemnify and save the City harmless from and against all claims and Losses in relation to obtaining and paying for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work.

15.2 Each Tenderer’s Tender Price (and each other price offered by the Tenderer in its Tender, if applicable) must, unless otherwise expressly stated, be inclusive of all applicable municipal, provincial, federal and other taxes, and all customs and excise duties and other assessments and charges, including sales taxes assessed upon the sale of goods and services to the City under the Contract, and the successful Tenderer agrees to indemnify and save the City harmless from and against all claims which shall be made with respect thereto.

16.0 NON-RESIDENT WITHHOLDING TAX

16.1 Tenderers are advised that, if the Contractor is not a resident of Canada, federal tax legislation may require that a certain percentage of any Contract Price otherwise payable to the Contractor be withheld by the City and remitted to the Receiver-General for Canada. The percentage

required to be withheld and remitted varies depending on, among other things, the country of residence, the provisions of any applicable tax treaties and the nature of the payment. Non-resident Tenderers may contact the Vancouver office of the Canada Revenue Agency for further details. Under any Contract, any and all money so withheld and remitted shall be treated as a payment to the Contractor against the Contract Price.

17.0 NO CLAIM AGAINST THE CITY

- 17.1 The Tenderer acknowledges and agrees that the City will not be in any way liable to the Tenderer for any Losses of any kind suffered, incurred or experienced by the Tenderer in connection with the ITT, including, without limiting the generality of the foregoing, any Losses of any kind suffered, incurred or experienced by the Tenderer and directly or indirectly caused by any act or omission of the City or breach of any agreement or duty by the City, express or implied, and by submitting a Tender each Tenderer shall be deemed to have agreed that it has no claim whatsoever against the City for any such Losses.
- 17.2 The Tenderer will indemnify the City and its employees, advisors or representatives (including the Engineer) and hold them harmless from and against any and all demands, claims, actions or suits or threatened demands, claims, actions or suits against the City or any of its employees, advisors or representative (including the Engineer) by any of the Tenderer's subcontractors or materials or equipment suppliers alleging, demanding, claiming or pleading Losses by:
- (a) a breach of the Tender Contract by the City or any of its employees, advisors or representatives (including the Engineer);
 - (b) an unintentional tort, of the City or any of its employees, advisors or representatives (including the Engineer), occurring in the course of conducting the ITT; or
 - (c) liability on any other basis related to the ITT or the Tender Contract.

18.0 DISPUTE RESOLUTION

- 18.1 Any dispute relating in any way to the ITT, except only disputes arising between the City and any Tenderer to whom the City has made an award of a Contract and which arise under such Contract, will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:
- (a) The arbitrator will be selected by the City's Director - Supply Chain Management;
 - (b) Sections 17.1 and 17.2 above will:
 - (i) bind the arbitrator, the Tenderer and the City; and
 - (ii) survive any and all awards made by the arbitrator; and
 - (c) The Tenderer will bear all costs of the arbitration.

19.0 CONFIDENTIALITY AND PRIVACY

- 19.1 Each Tender, once submitted to the City, will be held in accordance with the City's role as a public body required under Information and Privacy Legislation to protect or disclose certain types of records according to certain statutory rules. Each Tender, upon submission to the City, will be received and held in confidence by the City, unless and to the extent that it is or must be disclosed pursuant to Information and Privacy Legislation or other applicable legal requirements, and except that the City may publicly disclose information about or from Tenders,

including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the ITT.

- 19.2 Unsuccessful Tenderers shall, forthwith at the City's request, destroy or return to the City all copies and originals (in any format or medium) of the Tender Documents.

20.0 RELEASE OF INFORMATION RESTRICTED

- 20.1 The release of information about Tenders is restricted. Tenderers may attend the opening and registering of Tenders (referred to on the cover page of the ITT) in order to obtain information concerning the names of the other Tenderers who have submitted a Tender and the Tender Price shown on each Form of Tender. However, no other information is anticipated to be disclosed by the City.

INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
PART C - FORM OF TENDER

Tender of:			
	Legal Name of Person, Partnership or Corporation (the "Tenderer")		
Business Address:			
Postal or Zip Code:			
Cheques Payable to/Remit to Address:			
Postal or Zip Code:			
Key Contact Person:			
Telephone No.:		Fax No.:	
E-mail:			
Tax Registration Numbers (as applicable):			
Dun & Bradstreet Number (if available):		WorkSafeBC Account Number:	
City of Vancouver Business License Number (or, if available, Metro West Inter-municipal Business License Number):		Date, Jurisdiction and Form of Organization (as applicable):	

1.0 TENDER PRICE AND SCHEDULE

Having carefully read and examined the Tender Documents, and on agreeing to the terms and conditions set out in Parts A and B of the ITT, the undersigned Tenderer (for purposes of this Tender, the "Tenderer") offers to complete the Work and to furnish all plant, tools, equipment, labour, products, material and supervision necessary therefor, and to enter into an agreement in the form of the Form of Agreement set forth as Part D of the ITT to execute the Work, for the Tender Price specified below.

ITT NO. PS20220171 CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL

The Tender Price (including all costs, taxes and fees)(as per Schedule A), is _____ dollars
and _____ cents (\$_____)

The Tender Price **includes all PST and GST.**

The Tenderer's offer to complete all of the Work is an offer made according to the following schedule:

- (a) Subject to the City issuing a Notice to Proceed, the Work will begin by July 11th, 2022;
- (b) Substantial performance of the Work will occur by November 10th, 2022; and
- (c) Total performance of the Work will occur by November 30th, 2022.

2.0 ELECTRONIC PAYMENTS ACKNOWLEDGEMENT

If awarded a contract, the Tenderer agrees that all payments to be made by the City will be by electronic funds transfer, and for that purpose the Tenderer will provide the City with the necessary banking information to facilitate this process.

3.0 IRREVOCABILITY; NOTICE OF AWARD

The Tenderer agrees that this Tender is irrevocable and open for City's acceptance for a period of ninety (90) calendar days commencing at the Closing Time, even if the Tender of another Tenderer is accepted by the City prior to that time. If within that period the City delivers to the Tenderer a written notice by which the City accepts the Tender (a "**Notice of Award**"), the Tenderer will, within ten (10) Working Days of the receipt of the Notice of Award, deliver to the City:

- (a) a performance bond and a labour and material payment bond, each in the amount of fifty percent (50%) of the Tender Price, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the City;
- (b) a detailed construction schedule consistent with the preliminary construction schedule included in this Tender, which indicates the timing of the major activities of the Work and provides sufficient detail of the critical events and their inter-relationship to demonstrate such Work will be performed in accordance with the completion dates stated in this Tender;

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CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
PART C - FORM OF TENDER

- (c) a detailed traffic management plan addressing vehicular and pedestrian movement, safety and access with specific detailing on methods, signage and materials used to maintain Work Site operations and access to staff and public users of the Work Site;
- (d) a detailed Work Site-specific safety and health plan addressing as a high-level overview the health and safety issues including, but not limited to hazards, mitigation measures, site orientations, safety meetings, first aid attendant requirements, and training requirements and record keeping;
- (e) a WorkSafeBC number and a “clearance letter” confirming that the Tenderer is in WorkSafeBC compliance;
- (f) banking details to support payments by Electronic Funds Transfer (EFT);
- (g) a completed and signed Certificate of Insurance (in the form attached as a schedule to this Form of Tender) indicating that all of the insurance coverage required by the Contract is in place; and
- (h) a completed Contractor’s Pre-Contract Hazard Assessment Form (in the form of Schedule 11 to the Form of Agreement).

4.0 NOTICE TO PROCEED

The Tenderer agrees that upon the City’s receipt and acceptance (in the City’s discretion) of the required submissions listed above, the Tenderer will, within two (2) Working Days, execute the Contract and all other Contract Documents requiring execution (in each case, as prepared by the City for execution) and return them to the City as executed and that, upon the City’s receipt and acceptance thereof, the City may deliver to the Tenderer a Notice to Proceed and the Tenderer will then:

- (a) commence the relevant Work within two (2) Working Days of the receipt of the Notice to Proceed or such longer time as may be otherwise specified in the Notice to Proceed; and
- (b) issue and post a “Notice of Project” as and when required under section 20.2 of the *Occupational Health & Safety Regulation* (BC Regulation 296/97) and at the same time provide the City with a true copy thereof.

5.0 CONDITIONS

- (a) The Tenderer agrees that if the Tenderer receives a Notice of Award or a Notice to Proceed and fails or refuses to comply with the requirements stated in the foregoing clause 3.0 or clause 4.0, as the case may be, then such failure or refusal will be deemed to be a repudiation of the Tender Contract and refusal to enter into the relevant Contract and the City may, on written notice to the Tenderer, award the Contract to another party. It is further agreed that, as full compensation on account of damages suffered by the City because of such failure or refusal, the bid security shall be forfeited to the City in the amount equal to the lesser of:
 - (i) the face value of the bid security; and
 - (ii) the amount by which the Tender Price is less than the amount for which the City contracts with another party to perform the Work.

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CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
PART C - FORM OF TENDER

(b) The lowest or any submitted Tender will not necessarily be accepted. The City reserves the right to reject this Tender at any time without further explanation and to accept any Tender considered advantageous to the City.

(c) The schedules attached to this Form of Tender are an integral part of the same.

6.0 ADDENDA, AMENDMENTS AND QUESTIONS AND ANSWERS

The Tenderer acknowledges receipt of the following addenda, amendments and questions and answers to the Tender Documents:

Addendum No.
Amendment No.
Questions and Answers No.

The Tenderer agrees that it thoroughly understands and accepts the terms and conditions contained therein.

7.0 CERTIFICATION

The Tenderer represents and warrants that this Tender complies in all respects with the Tender Documents.

8.0 LABOUR

The above stated price is based on the Work under the Contract being performed by union/non-union labour. (Delete “union” or “non-union” as applicable).

9.0 CONTRACT TERMS IN THE ITT

Without limitation, the Tenderer expressly agrees with the City to all of the terms and conditions set forth in Part A and Part B of the ITT and that it is bound thereby.

INVITATION TO TENDER NO. PS20220171
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PART C - FORM OF TENDER

SIGNED on behalf of the Tenderer this _____ day of _____ 20____ by the duly authorized signatory or signatories of the Tenderer:

Per: _____

Name and Title: _____

Per: _____

Name and Title: _____

If the Tenderer has a corporate seal, the corporate seal should be applied in the space below:

If the Tenderer is an individual, a proprietorship or a partnership, the above signature(s) should be witnessed:

Witness signature

Witness name

Witness address

SCHEDULE "A"

SCHEDULE OF QUANTITIES AND PRICES

Pricing is to be entered on the Excel spreadsheet found at the FTP site described in Part A - Appendix 1 - Section 3.2 of the ITT.

The completed Excel spreadsheet is to be included with the Tender and as such will be incorporated into and form a part of Schedule A to the Form of Tender.

PLEASE READ AND FOLLOW THE INSTRUCTIONS BELOW AND RETURN WITH THE TENDER SUBMISSION

Each of the undersigned now represents and warrants that he or she has thoroughly reviewed the Tenderer's pricing as set out in the Excel spreadsheet the Tenderer has prepared and submitted with its Tender in accordance herewith and in doing so has verified and confirmed and is satisfied that the contents of that spreadsheet, as prepared, correctly and accurately represent the Tenderer's intentions for the pricing of its Tender and for its Tender Price and are consistent in all respects with all other parts of the Tender and that the Tender Price set out in the Form of Tender included with the Tenderer's Tender correctly and accurately sets out the Tenderer's intended Tender Price, and each of the undersigned executes and submits this Schedule A as part of the Tenderer's Tender.

SIGNED this _____ day of _____ 2022 by the duly authorized signatory or signatories of the Tenderer:

Per: _____

Name and Title: _____

Per: _____

Name and Title: _____

SCHEDULE "B"

PRELIMINARY CONSTRUCTION SCHEDULE

The Work is expected to begin by July 11th, 2022 and substantial performance is targeted for November 10th, 2022. Please clearly define time requirements for project milestones identified in the table below. If necessary, please add an attachment to this Schedule.

For further information on schedule and construction sequencing requirements please review Schedule 2 - Specifications and Drawings.

TABLE 1 - PROJECT MILESTONES	
Milestone	Date of Completion
Notice of Award	June 9 th , 2022
Project Kickoff Meeting	June 30 th , 2022
Contractor Mobilization	July 11 th , 2022
Leachate Collectors Tie-in	
Leachate Collectors Completion	
Gas Sample Port #1 Completion	
Gas Sample Port #2 Completion	
Gas Sample Port #3 Completion	
Decommission Existing South Gas Header Pipe Components - Pipe, Isolation Valves, Sample Ports, Flow Meter Stations, and Condensate Drain Traps	
South Gas Header Pipe - West Connection	
Road Crossing #1 Completion	
Road Crossing #2 Completion	
Road Crossing for Phase 5 Gas Sub-header Pipe	
Road Crossing for Phase 5 Gas Lateral Pipe	
South Gas Header Pipe - East Connection	
Storm Drain Pipe Completion	
Condensate Drain Pipe Completion	
Condensate Dropout Cross and Tee Procurement	
Condensate Drain Trap Procurement	
Condensate Drain Trap Completion	
South Header Pressure Testing	

**INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
SCHEDULE "B" (PART C - FORM OF TENDER)**

South Header Commissioning	
Vertical Gas Well Drilling Completion	
Cover Penetration Seal Completion	
Well Head Control Assembly Completion	
Vertical Gas Well Commissioning	
Substantial Performance	November 10 th , 2022
Total Performance	November 30 th , 2022

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20220171, FORM OF TENDER - SCHEDULE B", and is to be signed by the Tenderer.

SCHEDULE "C"

SUBCONTRACTORS AND SUPPLIERS

1.0 SUBCONTRACTORS

The Tenderer intends to use the following subcontractors for the portions of the Work identified below. All subcontractors who will perform any portion of the Work should be listed. The Tenderer must utilize only those Subcontractors named in Schedule "C"; any substitutions require prior written approval from the Engineer. The Tenderer should supply CV's for all Subcontractors and Suppliers listed below.

Subcontractor	Address	Type of Work

Some companies known to provide Work related services are:

- Pipe Welding: Iconix (former Corix), Sandale, ISCO.
- HDPE Pipe Supplier: Iconix (former Corix), ISCO.
- Hydro Excavating: McRae's, Hydrovac.
- Aggregate, Concrete and Asphalt Testing: Metro Testing, Valley Testing, Wood Environment.

Note that the above list is not an endorsement or pre-qualification of any kind for those listed and is not an all-inclusive list for the purposes of this Tender.

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20220171, FORM OF TENDER - SCHEDULE C", and is to be signed by the Tenderer.

2.0 SUPPLIERS

The Tenderer intends to use the following suppliers and manufacturers for the Work. The Tenderer must utilize only those Suppliers and Manufacturers named in Schedule "C"; any substitutions require prior written approval from the Engineer.

Supplier	Manufacturer	Supplier Address	Item

Some manufacturers known to supply Work related products are:

- Pipe: Chemline; Spears; ISCO; Performance;
- Valves: Chemline Plastics; DeZurik; Vahn-tech;.
- Pumps: Jeneer Group;
- Monitoring Devices: QED Environmental Systems;
- Flexible Hose: Kanaflex Corporation;
- Well Head Adapter: QED Environmental Systems.

The above list is not meant to be construed as an endorsement or pre-qualification of any kind for those listed and is not an all-inclusive list for the purposes of this Tender.

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20220171, FORM OF TENDER - SCHEDULE C" and are to be signed by the Tenderer.

SCHEDULE "D"

FORCE ACCOUNT LABOUR & EQUIPMENT RATES

Tenderers should complete the following tables setting out the non-operated hourly rates for all applicable types of equipment as well as the all-inclusive hourly rates for all applicable categories of labour, which rates will then apply pursuant to any Contract.

TABLE 1 - SCHEDULE OF LABOUR RATES

Job Classification	Regular Rate	Overtime Rate
	\$	\$
	\$	\$
	\$	\$
	\$	\$
	\$	\$
	\$	\$

TABLE 2 - SCHEDULE OF EQUIPMENT RATES

No.	Equipment Description	Hourly Rate	No. of Hours	Overhead And Profit	Total Price
		\$		\$	\$
		\$		\$	\$
		\$		\$	\$
		\$		\$	\$
		\$		\$	\$

Labour and materials rates must be inclusive of all taxes except for GST, and all assessments, benefits, small tools, overhead and profits. Payment for Force Account Work performed by the Contractor, including applicable mark-ups, shall be in accordance with GC. 73.

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20220171, FORM OF TENDER - SCHEDULE D", and is to be signed by the Tenderer.

SCHEDULE "E"

FORM OF CONSENT OF SURETY

PROJECT: INVITATION TO TENDER NO. PS20220171 CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL

Should it be required, we the undersigned Surety Company do hereby undertake to become bound as a surety in an approved Contract Performance Bond and Labour and Material Payment Bond, each in the amount of fifty percent (50%) of the awarded Contract Price for the fulfillment of the Contract, which may be awarded to _____ at the Tender Price set forth in the attached Tender, which Performance Bond and Labour and Material Payment Bond we understand are to conform to the applicable CCDC forms and be filed with the City within 10 Working Days of receipt of Notice of Award of the Contract, unless otherwise directed by the City.

We hereby further declare that the undersigned Surety Company is legally entitled to do business in the Province of British Columbia and that it has a net worth over and above its present liabilities and the amounts herein set forth.

The Common Seal of _____
was hereto affixed in the presence of:

SCHEDULE "F"

CERTIFICATE OF INSURANCE

(TO BE COMPLETED IF AWARDED THE CONTRACT)

CERTIFICATE OF INSURANCE

Project Specific Insurance

Section 7 a) – City staff to select the required # of days Written Notice before sending out for completion
Section 2 through 7 – to be completed and executed by the Insurer or its Authorized Representative

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver, 453 W 12th Avenue, Vancouver, BC, V5Y 1V4
and certifies that the insurance policies as listed herein have been issued to the Named Insured(s) and are in full force and effect as of the effective date of the agreement described below.
2. **NAMED INSURED:** *[must be the same name as the Permittee/Licensee or Party(ies) to Contract and is/are either an individual(s) or a legally incorporated company(ies)]*

MAILING ADDRESS:

LOCATION ADDRESS:

DESCRIPTION OF PROJECT/CONTRACT:

ITT NO. PS20220171 CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL

3. **PROPERTY INSURANCE – ALL RISK COURSE OF CONSTRUCTION (Builder's Risk Form) /INSTALLATION FLOATER**
 - Providing All Risk Coverage including Earthquake and Flood up to full replacement cost of the Project/Contract described above
 - Naming the City of Vancouver as an Insured and containing a Loss Payee Clause in favour of the City of Vancouver stating that proceeds of any claims against the Insurer be made payable to City of Vancouver as its interest may appear

INSURER: _____

INSURED VALUES: (Full Replacement Cost value of Project)

TYPE OF COVERAGE: _____

Limit: \$ _____

POLICY NUMBER: _____

Deductible Per Loss: \$ _____

POLICY PERIOD: From _____ to _____

4. **WRAP UP LIABILITY INSURANCE** (Occurrence Form) in the Joint Named Insureds of the Owner, City of Vancouver, Architects, Engineers, Consultants, Sub-consultants, Contractors, and Subcontractors, including their officials, officers, employees, agents, and all participants engaged in or connected with the above Project/Contract, including the following extensions:

- ☒ Personal Injury
- ☒ Cross Liability or Severability of Interest
- ☒ Employees as Additional Insureds
- ☒ Blanket Contractual Liability
- ☒ Broad Form Products and Completed Operations
- ☒ Broad Form Property Damage including Loss of Use
- ☒ Non-Owned Auto Liability

Check Additional Extensions where applicable and included:

- ☐ Work below ground level over 3 metres
- ☐ Excavation, shoring, underpinning, pile driving or caisson
- ☐ Demolition, removal or weakening of support of property
- ☐ Blasting
- ☐ Operation of hoist or attached machinery
- ☐ 24 months Completed Operations
- ☐ 36 months Completed Operations

INSURER: _____ POLICYNUMBER: _____

POLICY PERIOD: From _____ To _____

LIMITS OF LIABILITY: (Bodily Injury and Property Damage Inclusive):

Per Occurrence:\$ _____ Aggregate:\$ _____ Deductible Per Occurrence:\$ _____

5. **AUTOMOBILE LIABILITY INSURANCE** for operation of owned and/or leased vehicles

INSURER: _____

LIMITS OF LIABILITY:

POLICY NUMBER: _____

Combined Single Limit: \$ _____

POLICY PERIOD: From _____ to _____

If vehicles are insured by ICBC, complete and provide Form APV-47.

6. **OTHER INSURANCE** (e.g. Contractors' Equipment) – Please specify Name of Insurer(s), Policy Number, Policy Period, and Limit

7. **POLICY PROVISIONS:**

Where required by the governing contract, agreement, lease, permit or license, it is understood and agreed that:

- a) *SIXTY (60) days written notice of cancellation or material change resulting in reduction of coverage with respect to any of the policies listed herein, either in part or in whole, will be given by the Insurer(s) to the Holder of this Certificate; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply;*
- b) *All property insurance policies must contain a provision in which the Insurer(s), upon payment of a claim will waive all rights of subrogation against the City of Vancouver, its officials, officers, employees or agents;*
- c) *The insurance policy (policies) listed herein shall be primary with respect to the above described project/contract. Any insurance or self-insurance maintained by the City of Vancouver shall be in excess of this insurance and shall not contribute to it.*

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

PRINT NAME OF INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER _____ Dated: _____

SCHEDULE "G"

CERTIFICATE OF EXISTING INSURANCE

(TO BE COMPLETED AND SUBMITTED WITH TENDER)



**CERTIFICATE OF EXISTING INSURANCE
TO BE COMPLETED AND APPENDED TO THE PROPOSAL/TENDER**

Section 2 through 8 – to be completed and executed by the Insurer or its Authorized Representative

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver, 453 W 12th Avenue, Vancouver, BC, V5Y 1V4
and certifies that the insurance policy (policies) as listed herein has/have been issued to the Named Insured and is/are in full force and effect.
2. **NAMED INSURED** *(must be the same name as the proponent/bidder and is either an individual or a legally incorporated company)*

BUSINESS TRADE NAME or DOING BUSINESS AS

BUSINESS ADDRESS

DESCRIPTION OF OPERATION

INVITATION TO TENDER NO. PS20220171 CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL

3. **PROPERTY INSURANCE (All Risks Coverage including Earthquake and Flood)**

INSURER _____	Insured Values (Replacement Cost) -
TYPE OF COVERAGE _____	Building and Tenants' Improvements \$ _____
POLICY NUMBER _____	Contents and Equipment \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____
4. **COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)**
 Including the following extensions:

INSURER _____	
✓ Personal Injury	POLICY NUMBER _____
✓ Property Damage including Loss of Use	POLICY PERIOD From _____ to _____
✓ Products and Completed Operations	Limits of Liability (Bodily Injury and Property Damage Inclusive) -
✓ Cross Liability or Severability of Interest	Per Occurrence \$ _____
✓ Employees as Additional Insureds	Aggregate \$ _____
✓ Blanket Contractual Liability	All Risk Tenants' Legal Liability \$ _____
✓ Non-Owned Auto Liability	Deductible Per Occurrence \$ _____
5. **AUTOMOBILE LIABILITY INSURANCE** for operation of owned and/or leased vehicles

INSURER _____	Limits of Liability -
POLICY NUMBER _____	Combined Single Limit \$ _____
POLICY PERIOD From _____ to _____	<i>If vehicles are insured by ICBC, complete and provide Form APV-47.</i>
6. ☐ **UMBRELLA OR** ☐ **EXCESS LIABILITY INSURANCE** **Limits of Liability (Bodily Injury and Property Damage Inclusive) -**

INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Self-Insured Retention \$ _____
7. **PROFESSIONAL LIABILITY INSURANCE** **Limits of Liability**

INSURER _____	Per Occurrence/Claim \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Occurrence/Claim \$ _____

If the policy is in a "CLAIMS MADE" form, please specify the applicable Retroactive Date: _____
8. **OTHER INSURANCE**

TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____
TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

Dated _____

PRINT NAME OF INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER

SCHEDULE "H"

UNDERTAKING OF INSURANCE

To: City of Vancouver

Re: PS20220171 CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL

Dear Sirs:

We, the undersigned have completed, signed and attached the "Certificate of Existing Insurance" enclosed with this undertaking and now also do hereby undertake and agree that if _____ (the "**Tenderer**") is awarded a Contract, we will insure the Contractor in accordance with the requirements of the Contract, the form of which is included in the Tender Documents and will form part of the Contract Documents.

Dated at _____, British Columbia, this _____ day of _____ 20_____.

By: _____

Title: _____

Full Corporate Name of Insurer:

The "Certificate of Existing Insurance" provided with the ITT should be completed and signed and enclosed with this schedule, both of which are to be signed by the Insurance Company or an authorized broker on behalf of the Insurance Company. A SEPARATE FORM (AND CERTIFICATE OF EXISTING INSURANCE) SHOULD BE SIGNED FOR EACH POLICY IF THE TENDERER HAS MORE THAN ONE INSURER OR BROKER FOR ITS POLICIES.

SCHEDULE "I"

LABOUR FORCE & WORKING HOURS

Tenderers should complete the following tables setting out the estimated labour force for manual direct man-hours and manual indirect man-hours required to complete the Work inclusive of sub-contractor employees.

ESTIMATED LABOUR FORCE FOR MANUAL DIRECT MAN-HOURS AND MANUAL INDIRECT MAN-HOURS

Classification	Contract or Sub-contract	Number of Labour Force	Period of Employment	
			From Week Number Following Award of Contract	To Week Number Following Award of Contract

TABLE 2 - WORKING HOURS

The Tenderer should complete the following table setting out the intended normal working hours.

	From (AM)	To (PM)	Number of Working Hours (After deduction of breaks)
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			
Total Number of Working Hours per Week =			

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20220171, FORM OF TENDER - SCHEDULE I", and is to be signed by the Tenderer.

SCHEDULE "J"

PROPOSED KEY PERSONNEL

The Tenderers should provide details of its key personnel, in the table below, proposed to facilitate and delivery the Work.

TABLE 1 - PROPOSED KEY PERSONNEL

Name	Current Position and Responsibilities (Including the Nature of any Supervisory or Management Responsibilities)	Key Duties Under This Contract	Relevant Qualifications and Training	Length of Service in Current Organisation	Experience in Current or Equivalent Position (Years)

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20220171, FORM OF TENDER - SCHEDULE J", and is to be signed by the Tenderer.

CASH FLOW FORECAST



INVITATION TO TENDER ("ITT") NO. PS20220171
CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL

FORM OF AGREEMENT

between

and
CITY OF VANCOUVER

_____, 20____

INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
PART D - FORM OF AGREEMENT

This AGREEMENT (this “**Agreement**”) is made as of the day of _____.

BETWEEN:

CITY OF VANCOUVER, having an office at
453 West 12th Avenue
Vancouver, British Columbia, V5Y 1V4

(hereinafter referred to as the “**Owner**” or the “**City**”)

OF THE FIRST PART

AND:

[NTD: INSERT CONTRACTOR NAME/ADDRESS]

(hereinafter referred to as the “**Contractor**”)

OF THE SECOND PART

WHEREAS:

- A. The Owner has appointed Sperling Hansen and Associates Inc. (the “**Engineer**”) to act as its sole and exclusive agent for purposes of managing and administering the performance of the Work by the Contractor in accordance with the Specifications, Drawings and other Contract Documents; and
- B. The Contractor agrees to perform the Work and to furnish all plant, tools, equipment, labour, Products, materials, supervision and all other resources necessary therefor as hereinafter set forth.

NOW THEREFORE THIS AGREEMENT WITNESSES as follows:

ARTICLE 1 ROLE OF THE ENGINEER

The Owner hereby designates and appoints the Engineer as its sole and exclusive agent for the purpose of, on behalf of the Owner, managing and administering the performance of the Work, as set out in the Contract Documents. Unless otherwise notified in writing by the Owner to the Contractor, the agency of the Engineer shall continue for the entire duration of this Contract including the period of any guarantees or warranties given by or through the Contractor. In the event of the revocation in writing of the agency of the Engineer by the Owner, the Engineer shall have no further authority under this Contract, except as may be specifically designated in writing by the Owner and agreed to in writing by the Engineer, and all references to the Engineer in this Contract shall thereafter be deemed to be references to the Owner or to such other person designated in writing to the Contractor. The Engineer may from time to time delegate to a representative the performance of, or the authority to perform, the duties, responsibilities, rights and obligations of the Owner in respect of which the Engineer has been designated and appointed as its sole and exclusive agent.

ARTICLE 2 WORK

The Contractor will carry out the Work, and will furnish all materials, equipment, products, labour, services and supervision necessary to carry out the Work as specified in and in accordance with all of the Contract Documents.

All of the Work shall be done, performed or furnished by the Contractor in a proper and workmanlike manner and in accordance with the requirements of the Contract Documents (as hereinafter defined).

ARTICLE 3 CONTRACT DOCUMENTS

INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
PART D - FORM OF AGREEMENT

3.1 The following are the Contract Documents, whether or not attached to this Agreement:

- (a) this Agreement and the following schedules:
 - (i) Schedule 1 - General Conditions (the “**General Conditions**”);
 - (ii) Schedule 2 - Specifications and Drawings (the Specifications and Drawings listed in but not attached to Schedule 2 are incorporated by reference);
 - (iii) Schedule 3 - Schedule of Quantities and Prices;
 - (iv) Schedule 4 - Subcontractors and Suppliers;
 - (v) Schedule 5 - Construction Schedule;
 - (vi) Schedule 6 - Performance and Labour and Material Payments Bonds;
 - (vii) Schedule 7 - Insurance Certificates;
 - (viii) Schedule 8 - Force Account Labour and Equipment Rates;
 - (ix) Schedule 9 - Insurance;
 - (x) Schedule 10 - Owners List of Known Workplace Hazards (City Pre-Contract Hazard Assessment Form);
 - (xi) Schedule 11 - Contractor Pre-Contract Hazard Assessment Form;
 - (xii) Schedule 12 - Vancouver Landfill Site Safety Orientation/Agreement;
 - (xiii) Schedule 13 - Vancouver Landfill Gas Safe Work Control Procedures;
 - (xiv) Schedule 14 - Contractor Safety Absolutes;
 - (xv) Schedule 15 - Submittal Form Template;
 - (xvi) Schedule 16 - Material Disclosure;
 - (xvii) Schedule 17 - Summary of Submittals;
 - (xviii) Schedule 18 - Cash Flow Forecast;
 - (xix) Schedule 19 - Contractor’s Key Personnel;
- (b) the Tender (incorporated by reference);
- (c) the Specifications and Drawings (i.e., those not included in Schedule 2 but incorporated herein by reference);
- (d) the Traffic Management Plan (incorporated by reference); and
- (e) the Health and Safety Plan (incorporated by reference).

3.2 The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intent and spirit of the Contract Documents is that the Contractor is required to complete the Work in every detail within the times and for the purposes designated,

and that the Contractor shall furnish and do any and everything necessary for such purposes notwithstanding any omission from the Contract Documents.

ARTICLE 4 SCHEDULE OF WORK

- 4.1 The Contractor will commence the Work as directed in writing by the Owner.
- 4.2 The Contractor will perform the Work diligently and in accordance with the Construction Schedule (the “**Contract Time**”), subject to the provisions of the Contract Documents for adjustments to the Contract Time.
- 4.3 Time shall be of the essence in this Contract.

ARTICLE 5 PAYMENT

5.1 Contract Price

- (a) The Contract Price (inclusive of all PST, GST and other taxes, duties assessments, charges and fees, all permit and inspection costs, and all WorkSafeBC assessments relating to the Work) to do, perform and supply all the Work in accordance with, and perform all the obligations specified by, the Contract Documents is **[To Be Determined]**
- (b) The GST payable by the Owner to the Contractor is **[To Be Determined]**. This amount is included in the Contract Price.
- (c) The (i) aforesaid GST and (ii) the PST and all other taxes, duties, assessments, charges and fees included in the Contract Price will be remitted by the Contractor to the applicable authorities as and when the Owner pays the Contract Price to the Contractor or as earlier required by applicable law.
- (d) All amounts are in Canadian dollars.
- (e) The Contract Price may be adjusted only as provided for in the Contract Documents.

5.2 Application for Payment

- (a) During progress of the Work, the Contractor may make application to the Engineer for payment, in the form approved by the Engineer, on or before the last day of every month for any portion of the Work done to the date of the application, provided that the Engineer may at any time require as a condition of payment the submission of documentation set out in GC.60.
- (b) On Substantial Performance being certified in accordance with the procedures set out in Section 2 of GC.60 and the value of the certified deficiencies being agreed upon, the Contractor may make application to the Engineer for payment of the balance of all monies then owing under this Contract to the Contractor, submitting also such documentation as is required by GC 60.
- (c) On correction and completion of all deficiencies in the Work as set out in the Certificate of Substantial Performance, the Contractor shall submit its application to the Engineer for final payment, accompanied by the documentation required by GC 60.

5.3 Payment

- (a) The payment for any Work under this Contract which shall be made to the Contractor by the Owner shall not be construed as an acceptance of any Work as being in accordance with

the Contract Documents. The issuance of the Certificate of Total Performance shall constitute a waiver by the Contractor of all claims except those previously made in writing and still unsettled, if any, and specified by the Contractor in its application for final payment pursuant to Section 5.2(c) above.

(b) Payments to the Contractor will be made by the Owner as follows:

- (i) On or before the fifth day of the month following an application for payment made by the Contractor, the Engineer will adjust, if necessary, and certify the Contractor's application for payment. Where the Engineer makes any changes to the amount submitted by the Contractor for payment, the Contractor shall be notified in writing within five Working Days and shall be given the opportunity to defend the Contractor's application without delay.
- (ii) Within thirty calendar days of the date the Owner receives any Engineer-certified application for payment, the Owner will make payment to the Contractor up to the value of the completed Work as certified by the Engineer less any holdback required by the *Builders Lien Act* and less the aggregate of any previous payments, all in accordance with the Contract and with the *Builders Lien Act* (if and to the extent applicable).
- (iii) The Owner will, in addition to other holdbacks as provided by the Contract Documents, be entitled to deduct and retain from payments otherwise due to the Contractor, a maintenance security holdback in the amount of five percent of the Contract Price (the "Maintenance Security Holdback") to cover the cost of corrections to the work that may be required under GC 51. The balance of the Maintenance Security Holdback not required under GC 51, and remaining at the end of the warranty period, shall be paid without interest to the Contractor.

The Contractor may substitute a letter of credit, in the amount of the Maintenance Security Holdback, in a form and from a financial institution acceptable to the Owner, for the Maintenance Security Holdback.

- (iv) Where the Engineer has issued a certificate of completion in respect of a subcontract to which the Contractor was a party, and where 55 calendar days have elapsed since the issuance of the certificate without any claims of builders lien being filed which arose under the subcontract, the Owner will release to the Contractor any holdback amount retained pursuant to the *Builders Lien Act* for such subcontract work.
- (v) After 55 calendar days have elapsed from the date of the Certificate of Substantial Performance issued in accordance with GC.60 and upon the Engineer's satisfaction that no encumbrance, lawful claim or lien exists, the Owner will, within a further ten calendar days, make payment to the Contractor of all monies due under this Contract at the date of Substantial Performance, including the release of all remaining *Builders Lien Act* holdback amounts, if any, but retaining at least twice the estimated value of the certified deficiencies, and retaining the Maintenance Security Holdback.
- (vi) Upon the issuance of the Certificate of Total Performance, the Owner will make a final payment of all monies owing to the Contractor under the Contract, except for the Maintenance Security Holdback, which shall be released as specified in Section 5.3(b)(iii).

5.4 Interest on Overdue Payments

Where payment is not made in accordance with the payment provisions contained in Section 5.3 above, the overdue amount shall bear interest at the lending rate of the Bank of Montreal for its prime commercial customers and such interest shall be calculated from and after the date upon which such payment was due and shall accrue until the date that payment of the overdue amount together with interest is made. This interest obligation on the Owner shall constitute the sole remedy of the Contractor for late payment.

ARTICLE 6 NOTICES

- 6.1 Unless otherwise specifically provided in the Contract Documents, all notices, instructions, orders or other communications in writing shall be conclusively deemed to have been given to the Contractor if delivered to the Contractor personally (or in the case of a company, to any of its officers or directors personally), or to the Contractor's superintendent or foreman, or delivered by mail to the Contractor at the business address of the Contractor set forth below:

Contractor:

[NTD: Insert Contractor information]

- 6.2 Unless otherwise specifically provided in the Contract Documents all notices, requests, claims or other communications by the Contractor shall be in writing and shall be given by personal delivery or by registered mail addressed to the Owner at the following address:

Owner:

City of Vancouver
453 West 12th Avenue
Vancouver, British Columbia
V5Y 1V4

Attention: [insert],

Engineer:

Sperling Hansen and Associates Inc.

[insert]

provided that, each notice, request, claim or other communication that this Agreement requires to be directed to the Engineer shall be in writing and shall be given by the Contractor by personal delivery or by registered mail, addressed to the Engineer at the address set forth below, with a copy to the Owner at the address set forth above.

- 6.3 Any of the said addresses may be changed from time to time by written notice to the other party.
- 6.4 Any such notices, instructions, orders, requests or other communications sent by mail as aforesaid shall be deemed to have been given on the second Working Day following the mailing thereof.

ARTICLE 7 GENERAL

- 7.1 This Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns of the Parties hereto.

INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
PART D - FORM OF AGREEMENT

- 7.2 Except as expressly set forth in the foregoing Section 7.1 or in Schedule 1, nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the Owner and the Contractor.
- 7.3 This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and cancels and supersedes any prior understandings and agreements between the parties hereto with respect thereto. There are no representations, warranties, terms, conditions, undertakings or collateral agreements, express, implied or statutory, between the parties in relation to the subject matter hereof other than as expressly set forth in this Agreement.
- 7.4 No modification of or amendment to this Agreement is valid or binding unless set forth in writing and fully executed by the parties hereto and no waiver of any breach of any term or provision of this Agreement is effective or binding unless made in writing and signed by the party purporting to give such waiver and, unless otherwise provided, is limited to the specific breach waiver.
- 7.5 This Agreement is governed by and must be construed in accordance with the laws of the Province of British Columbia.
- 7.6 This Agreement is subject to the exclusive jurisdiction of the courts in the Province of British Columbia except to the extent necessary to enforce, in another jurisdiction, any judgment of any court in the Province of British Columbia.
- 7.7 The Contractor agrees to do all things and execute all deeds, instruments, transfers or other documents as may be necessary or desirable to give full effect to the provisions of this Agreement and the transactions contemplated by it.
- 7.8 If any term or condition of this Agreement is for any reason held to be illegal, invalid, ineffective, inoperable or otherwise unenforceable, it shall be severed and deemed to be deleted from this Agreement and the validity and enforceability of the remainder of this Agreement shall not be affected or impaired thereby. If any term or condition of this Agreement is found to be illegal, invalid ineffective, inoperable or otherwise unenforceable, but would not be so if some part of it were deleted, the term or condition shall apply with such modifications as may be necessary to make it enforceable.
- 7.9 This Agreement may be executed in any number of counterparts. All counterparts, taken together, constitute one instrument. A party may execute this Agreement by signing any counterpart.
- 7.10 Delivery of an executed signature page to this Agreement by either party by electronic transmission shall be as effective as delivery of a manually executed copy of this Agreement by such party.

INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
PART D - FORM OF AGREEMENT

IN WITNESS WHEREOF the parties hereto have executed this Agreement on the date first herein above written.

CITY OF VANCOUVER

by its authorized signatories:

Signature: _____

Name: _____

Title: Category Manager

Signature: _____

Name: _____

Title: Chief Purchasing Officer

Signature: _____

Name: _____

Title: General Manager, Engineering Services Department

Signature: _____

Name: _____

Title: Director, Legal Services Department

[INSERT NAME OF CONTRACTOR]

by its authorized signatories:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

GC.1 DEFINITIONS

Where used in this Agreement, unless otherwise defined:

“Agreement” means the contract/agreement between the City and the Contractor regarding performance of the Work and as set out in the Contract Documents;

“Applicable Laws” means all laws, statutes, bylaws, regulations, ordinances, standards, codes, orders, decrees, restrictions, and rules (including all occupational health and safety requirements) whether federal, provincial, or municipal in origin, having the force of law, existing at common law or enacted by any public authority having jurisdiction in relation to any aspect of the Project in force from time to time during the term of the Agreement;

“Certificate of Insurance” means, subject always to GC.53, a certificate of insurance duly completed by the Contractor’s insurers or insurance brokers, in a form acceptable to the Owner;

“Certificate of Substantial Performance” means, subject always to Section 5.3 of the Agreement and to the warranty under GC.51, the certificate issued by the Engineer indicating that Substantial Performance of the Work has been achieved. Under no circumstances will issuance of the Certificate of Substantial Performance be deemed to mean that the Owner has accepted the Work as being in compliance with the Contract Documents;

“Certificate of Total Performance” means, subject always to section 5.3 of the Agreement and to the warranty under GC.51, a certificate issued by the Engineer accepting the Contractor’s certification that the entire Work of the Contract has been performed by the Contractor to the requirements of the Contract Documents;

“City” or “Owner” means the City of Vancouver, a municipal corporation continued pursuant to the Vancouver Charter, acting in its capacity as the owner and operator of the Landfill, but expressly excludes the City of Vancouver, acting in its regulatory capacity;

“Construction Schedule” means, subject to GC.22, the times scheduled for the Work as set out in Schedule 5 hereto;

“Contract” means the contract/agreement between the City and the Contractor regarding performance of the Work and as set out in the Contract Documents;

“Contract Documents” means the documents described as such in Article 3 hereof;

“Contract Price” means the amount stipulated in Article 4 of the Agreement as the price payable to the Contractor for performance of the Work in accordance with the Contract;

“Contract Time” means the time or times during which the Work is to be performed pursuant to the Contract;

“Drawings” means all plans, profiles, drawings, sketches within, and all other graphic and pictorial portions of, the documents prepared for or in connection with the Work embraced under this Contract, which have been approved for use by the Owner or the Engineer, including those listed in Schedule 2 and those contained within the Master Municipal Specifications and Standard Detail Drawings, which are in turn contained within Volume II of the Master Municipal Construction Document, as further described in GC.4;

“Engineer” means the Engineer as defined in the Agreement or his delegate, who may be an employee of the Owner or an independent engineer engaged by the Owner on its behalf;

“Environmental Legislation” means any laws, statutes, regulations, orders, bylaws, permits or lawful requirements of any governmental authority with respect to environmental protection;

“GST” means the tax payable and imposed pursuant to Part IX of the Excise Tax Act (Canada), as amended or replaced from time to time;

“Invitation to Tender” or “ITT” means the City’s Invitation to Tender PS20220171 CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL;

“Health and Safety Plan” means the contractor’s Health and Safety Plan included in the Tender;

“Landfill” means the City of Vancouver Landfill located at 5400 72nd Street, Delta, British Columbia;

“materials” means, depending on the context, materials, supplies, equipment and other things incorporated or to be incorporated into or used in carrying out the Work as required by the Contract Documents;

“Notice of Award” has the meaning set out in the ITT;

“Notice to Proceed” has the meaning set out in the ITT;

“Other Contractors” means any person, firm or corporation employed by or having a contract with the Owner and/or associated parties otherwise than through the Contractor in connection with the Work;

“Plant” means every temporary or accessory means necessary or required to carry on or complete the Work and extra work, in the time and manner herein provided including, without limiting the generality of the foregoing, all tools, fixed and moveable machinery, engines, motor vehicles, trucks, compressors, all temporary structures such as workshops, sheds, storehouses, shoring forms, trestles and hoardings and all other appliances, apparatus or equipment of every sort, kind and description whatsoever;

“Products” means equipment, supplies, materials and other things incorporated or to be incorporated into the Work or used in carrying out the Work as required by the Contract Documents;

“Progress Reports” means written Work related progress reports prepared by or for the Engineer from time to time while the Work is underway, including, without limitation, detailed information regarding any deficiencies therein from time to time, any discussions with and instructions to the Contractor, the number of personnel at the Work Site from time to time, materials delivered to the Work Site and all such things and matters the Engineer might consider ought to be so recorded therein;

“PST” means the provincial sales tax payable and imposed pursuant to the *Provincial Sales Tax Act* (British Columbia), as amended or replaced from time to time;

“Specifications” mean the portion of the Contract Documents, wherever located and whenever issued, consisting of the written requirements and standards for Products, systems, workmanship, quality, and the services necessary for the performance of the Work, including those listed in Schedule 2 and those contained within the Master Municipal Specifications and Standard Detail Drawings, which in turn are contained within Volume II of the Master Municipal Construction Document, as further described in GC.4;

“Subcontractor” means the person or persons with whom the Contractor has made an agreement to perform a portion or portions of the Work or to supply Products therefor;

“Substantial Performance” means substantial completion of the Work, or a portion thereof to which the concept of Substantial Performance is intended under the Contract to apply, such that, though not necessarily totally complete, it is ready for use as intended and/or is fully functional as intended as a completed project and the Engineer in writing in accordance with the Contract has certified it as having been substantially performed;

“Tender” means the Contractor’s tender dated _____ submitted in response to the ITT;

“Total Performance” means, as certified in writing by the Engineer in accordance with the Contract, the full completion as required under the Contract of all the Work, or a portion thereof to which the concept of Total Performance is intended under the Contract to apply, including the full correction of all deficiencies identified in connection with the Substantial Performance thereof, but excluding any warranty work required during warranty periods under the Contract;

“Traffic Management Plan” has the meaning set out in GC.36;

“WorkSafeBC” means the workers compensation board established and functioning pursuant to the *Workers Compensation Act* (British Columbia) (the “WCA”), as amended, and/or related or successor legislation, and any successors in function thereto;

“WorkSafeBC Regulations” means the WCA, and all regulations thereunder, as amended or re-enacted from time to time;

“Work” means (unless the context requires a different meaning) the total construction and related services required by the Contract Documents, including, without limitation, the supply of all Products required therefor and all work(s) mentioned or referred to in the Contract Documents, including all extra or additional work or materials, matters or things which may be ordered by the Owner or the Engineer as herein provided;

“Work Site” or **“Site”** means the place(s) where the Work is to be carried out.

“Working Day” means any day other than a Saturday, Sunday or “holiday” as defined in the *Interpretation Act* (British Columbia).

GC.2 INTERPRETATION

In this Contract, the masculine includes the feminine and bodies corporate, and each includes the others. Also, any reference to the singular includes the plural where appropriate.

Drawings and Specifications are intended to be complementary. Should any difference exist between the Drawings and Specifications, or should any errors or inconsistency occur in any or between any of the Drawings and Specifications, the Contractor, before proceeding, shall bring them to the attention of the Engineer. The Engineer shall resolve the error or inconsistency and the Contractor shall proceed with the Work in the manner directed by the Engineer.

The Engineer will furnish from time to time such detail drawings and specifications as the Engineer may consider necessary for the Contractor’s guidance. These detail drawings and specification shall be considered Drawings and Specification, respectively, and shall take precedence over Drawings or Specifications, and shall be considered as explanatory of them and not as indicating changes in the Work or as giving rise to any entitlement to a change in the Contract Price.

On all Drawings, figures take precedence over scaled dimensions. Scaling of dimensions, if done, is done at the Contractor's own risk. Despite the above, in the event of any inconsistency between the Drawings and Specifications or between any other Contract Documents or within any Contract Documents which could be construed as creating an ambiguity regarding the amount of Work involved, the cost or amount of Product to be supplied, the Contract Price being lower or higher, or any other similar discrepancy or inconsistency, the discrepancy or conflict will be resolved as follows:

- (a) the portion of the Contract Documents most favourable to the Owner will be deemed to be correct;
- (b) the more stringent will take precedence over the less stringent;
- (c) the more expensive item will take precedence over the less expensive; and
- (d) if none of the foregoing rules (a), (b) and (c) can be applied by the Engineer, the more specific provision will take precedence over the less specific.

GC.3 PERSONAL EXAMINATION

The Contractor has carefully and thoroughly examined the Work Site prior to entering into this Contract and the Contractor is familiar with conditions at the Work Site. Notwithstanding any other provision hereof, no adjustment to the Contract Price shall be made in relation to conditions at the Work Site that should reasonably have been noted by the Contractor as a result of its examination of the Work Site. The Contractor has examined carefully the Drawings, Specifications and other Contract Documents. The Contractor has satisfied itself as to the character, quality and quantity of work to be performed, as to the materials to be furnished, and as to the requirements of the Drawings, Specifications and other Contract Documents. The Drawings show or describe conditions as they are believed by the Engineer to exist, but it is not to be inferred that all of the conditions as shown thereon are actually existent, nor shall the Owner or any of its officials, employees or agents be liable for any loss sustained by the Contractor as a result of any variance between the conditions as stated in the Drawings or other Contract Documents and the actual conditions revealed during the progress of the Work, or otherwise.

The Contractor agrees that the Contractor has satisfied itself by the Contractor's own investigation and research regarding all conditions, that the Contractor's conclusion to enter into the Contract is based upon such investigation and that the Contractor will make no claim against the Owner or the Engineer because any estimates, tests or representations of any kind affecting the Work made by any officer, employee or agent of the Owner or the Engineer that may prove to be in any respect erroneous. The Contractor assumes the risk of unforeseen conditions and agrees to complete the Work under whatever circumstances may develop. Any information shown or described in the Drawings, Specifications or any other Contract Documents as to the soil or material borings or tests of existing material is not guaranteed, and no claim for extra work or damages will be considered if it is found during construction that the actual soil or material conditions vary from those indicated.

GC.4 MASTER MUNICIPAL SPECIFICATIONS AND STANDARD DETAIL DRAWINGS

The Contract Documents incorporate by reference the "Master Municipal Specifications and Standard Detail Drawings" contained within Volume II of the Master Municipal Construction Document (printing 2000) ("MMCD"), except that all of Volume I and the following parts of Volume II of the MMCD are hereby expressly excluded from the Contract Documents: Instructions to Tenderers - Part II. General Conditions (including Schedule 17.5.3 Letter Agreement with Referee, Changes and Extra Work flow chart, and Dispute Resolution Process flow chart).

GC.5 PERFORMANCE BOND

The Contractor shall, if it has not yet done so, immediately upon execution of this Agreement, deliver to the Owner a performance bond in the amount of 50% of the Contract Price, issued by a surety licensed to carry on the business of suretyship in the Province of British Columbia, and in a form acceptable to the Owner for the due and proper performance of the Contract, including the warranty obligations hereunder as required in the Notice of Award. The expense of the bond shall be borne by the Contractor.

GC.6 LABOUR AND MATERIALS PAYMENT BOND

The Contractor, if it has not yet done so, immediately upon execution of this Agreement, shall deliver to the Owner a labour and materials bond in the amount of 50% of the Contract Price, issued by a surety licensed to carry on the business of suretyship in the Province of British Columbia, and in a form acceptable to the Owner for the due and proper payment of the labour and materials used under the Contract as required in the Notice of Award. The expense of the bond shall be borne by the Contractor.

GC.7 WORKSAFE BC COVERAGE AND CONTRACTOR TO BE PRIME CONTRACTOR

1. **Payment of WorkSafeBC Assessments** - The Contractor agrees that it shall at its own expense procure and carry or cause to be procured and carried and paid for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract. The Contractor agrees that the Owner has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the Owner to the Contractor. The Owner shall have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or service performed in fulfilling this Contract have been paid in full.
2. **Prime Contractor** - If and to the extent that the Work Site or any part thereof is a "multiple employer workplace" within the meaning of Part 3 of the *Workers Compensation Act* (British Columbia) ("WCA"), and unless otherwise specified in the Contract Documents or notified to the contrary by the Engineer, the Contractor shall be the "Prime Contractor" under that part of the WCA notwithstanding that the Owner, the Engineer or an Other Contractor may provide from time to time some of the services normally provided by such "Prime Contractor".

If the Contractor is the "Prime Contractor" as provided for above, the Contractor shall:

- a. **Compliance with Law:** as such comply with all Applicable Laws and all reasonable rules established by the Owner regarding occupational health and safety at the Work Site and of which the Contractor is given timely notice through the Engineer;
- b. **Safety Programs:** initiate, maintain and supervise all safety programs and measures in connection with the performance of the Work, which programs and measures shall respond fully to the requirements of all Applicable Laws relative to occupational health and safety, all to the satisfaction of the Engineer;
- c. **Site Meetings:** conduct regular safety meetings at the Work Site, no less frequently than weekly, record minutes of such meetings and give copies of such minutes to the Engineer on a weekly basis;
- d. **Safety Equipment:** supply and maintain at the Work Site all safety equipment necessary to protect workers and others from accident or injury; and

- e. *First Aid:* supply and maintain at the Work Site all personnel, equipment and supplies necessary for the provision of appropriate first-aid to any worker or person suffering an accident or injury at or about the Work Site, and establish an emergency procedure for prompt removal of any such person from the Work Site to a hospital, clinic or medical office for further treatment.
- f. *Notice to Project:* prior to commencement of construction, the Contractor will:
 - (1) complete and file a "Notice of Project" with the WorkSafeBC in compliance with Section 20.2 of the WorkSafeBC Rules, and
 - (2) post the Notice of Project at the Work Site, and
 - (3) provide a copy of the Notice of Project to the Owner and confirm in writing that the Notice of Project has been posted at the Work Site.

If, or for so long as the Contractor is not the "Prime Contractor", the Contractor shall:

- a. *Compliance with Law:* comply with all Applicable Laws, and all reasonable rules established by the Owner of which the Contractor is given timely notice through the Engineer, relative to occupational health and safety;
- b. *Compliance with Directions:* comply with all reasonable directions issued by the "Prime Contractor" regarding compliance with Applicable Laws, and rules established by the Owner, relative to occupational health and safety; and
- c. *Site Safety Meetings:* attend all Site safety meetings convened by the "Prime Contractor".

Whether or not the Contractor is the "Prime Contractor", it shall:

- a. *Reporting:* report immediately to the "Prime Contractor" (if not the Contractor) and the Engineer all accidents and injuries of any kind or severity occurring on or about the Work Site and involving employees of the Contractor or any Subcontractor, or any other person of which the Contractor is aware, and arising out of or in connection with the Work;
- b. *Written Confirmation:* confirm in writing each report made under subparagraph (a); and
- c. *City Policy:* respect and adhere to the Owner's safety and training policies relative to the Work Site and the Work.

If the Engineer determines that the Contractor is not in compliance with its obligations as "Prime Contractor", if applicable, the Owner may, but is not obliged to, provide some or all of the services required to discharge those obligations. All costs incurred by the Owner in providing such services shall be paid by the Contractor to the Owner, and may be deducted from any amount then or thereafter becoming due to the Contractor under the Contract.

- 3. **Initial Proof of WorkSafeBC Registration/Good Standing** - Upon request of the Engineer or the Owner, the Contractor will provide the Owner and the Engineer with the Contractor's or any Subcontractors' WorkSafeBC registration number.
- 4. **Subsequent Proof of WorkSafeBC Registration/Good Standing** - Concurrently with making any application for payment under this Contract, the Contractor will provide the Owner with written confirmation that the Contractor and all Subcontractors are registered in good standing with WorkSafeBC and that all assessments have been paid.

5. **Pre-Contract Hazard Assessment** - The Contractor may or may not have received, as part of the Contract Documents, a "Pre-Contract Hazard Assessment" prepared by or for the Owner pursuant to the Owner's statutory obligations under the WorkSafeBC/H&S Regulation (Section 119 of the WCA) as an "owner of a workplace". Despite the Owner's statutory obligations, the Prime Contractor now acknowledges and agrees that the Contractor may not rely on the "Pre-Contract Hazard Assessment" and now agrees to assume by the terms of this Contract full responsibility for carrying out the Owner's obligations under Section 119 of the WCA, including without limitation and by way of example only, conducting all due diligence inquiries of all applicable Owner staff and departments in order to ascertain what, if any, information is known or has been recorded by Owner staff about the Work Site that is necessary to identify and eliminate or control hazards to the health or safety of persons at the Work Site. The Owner now agrees to make all reasonable efforts to assist the Contractor in obtaining timely access to Owner staff and Owner records for this purpose. The Contractor will immediately start conducting such due diligence inquiries and must complete and deliver written confirmation of the completion of such inquiries to the Engineer prior to the Owner being obligated to issue the Notice to Proceed.
6. **Special Indemnity Against WorkSafeBC Non-Compliance** - The Contractor will indemnify the Owner and hold harmless the Owner from all manner of claims, demands, costs, losses, penalties and proceedings arising out of or in any way related to:
- (a) unpaid WorkSafeBC assessments of the Contractor or any other employer for whom the Contractor is responsible under this Contract;
 - (b) the acts or omissions of any person engaged directly or indirectly by the Contractor in the performance of this Contract, or for whom the Contractor is liable pursuant to the Contractor's obligations as the Prime Contractor, and which acts or omissions are or are alleged by WorkSafeBC to constitute a breach of the WorkSafeBC/H&S Regulation or other failure to observe safety rules, regulations and practices of WorkSafeBC, including any and all fines and penalties levied by WorkSafeBC; or
 - (c) any breach of the Contractor's obligations under this GC.7.

GC.8 LABOUR

The Contractor agrees to employ appropriate tradesmen for the Work. Where the tradesmen are covered by collective agreements, the Contractor shall abide by the conditions of the collective agreements covering such tradesmen. Notwithstanding the foregoing, the Contractor shall pay or cause to be paid to every person employed on the Work not less than the wages or remuneration generally accepted as current at the time.

The Contractor shall endeavour to avoid labour problems and minimize work stoppages, jurisdictional or other labour disputes on the Work Site.

GC.9 COMMENCEMENT AND COMPLETION OF THE WORK

The Contractor shall not commence the Work or procure any material therefor until it has received the Notice to Proceed from the Owner. Forthwith after the receipt of the Notice to Proceed, the Contractor shall at once begin and continuously carry on to completion (subject as herein provided) the Work and shall complete and give full possession thereof to the Owner before the date for Total Performance specified herein, unless a longer period shall be allowed in writing by the Engineer, in which case it shall be carried on to completion and possession given to the Owner within the additional time so allowed. No progress or interim estimate or certificate shall release the Contractor or its surety from any responsibility or shall be taken as evidence of any such release, or as an acceptance of any Work or material, or as a waiver of any condition herein. The whole Work and every portion and detail thereof shall, at the time of

completion, be put and left by the Contractor in good and satisfactory condition, finished in all respects and at the time must be fully up to the requirements of the Drawings and Specifications in every particular aspect; and all surplus and refuse material and rubbish must be removed by the Contractor from the vicinity of the Work; the Work Site must be left by the Contractor in a neat and tidy condition; all damages to adjacent property, including pavements, foot walks, boulevards, sod, trees, shrubs and plants, or other things injured or interfered with by the Contractor, or in any way due to its work, must be made good by the Contractor; all wages must be paid, and every other requirement of the Contract must be complied with by the Contractor. The Contractor shall complete all of the Work in full compliance with all Environmental Legislation. In case of the Contractor's failure to finish the Work properly and fully, and as required, or in case of the Work or any part thereof being assumed by the Owner, as provided in these General Conditions, the Owner may proceed to finish the Work for the Contractor as its agent in this respect and at the Contractor's expense or proceed as provided in GC.62.

GC.10 DELAY IN PROGRESS OF THE WORK

1. Delays

- (a) If the Contractor is delayed in the performance of the Work by an act, omission or wilful default of the Owner, or the Engineer, or anyone employed or engaged by them, contrary to the provisions of the Contract Documents, then the time fixed herein for completion shall be extended for such reasonable time as the Engineer may decide.
- (b) If the Contractor is delayed in the performance of the Work by an order issued by a court or other public authority and provided that such order was not issued as the result of an act or fault of the Contractor or anyone employed or engaged by the Contractor directly or indirectly, then the time fixed for completion herein shall be extended for such reasonable time as the Engineer may decide.
- (c) If the Contractor is delayed in the performance of the Work by labour strikes, fire, or by unforeseeable causes beyond the Contractor's control, then the time fixed for completion herein shall be extended for such reasonable time as the Engineer may decide, but in no case shall the extension of time be less than the time lost as the result of the event causing the delay, unless such shorter extension is agreed to by the Contractor. The Contractor shall not be entitled to payment for any costs, loss, or damages incurred as the result of such delay.
- (d) The Engineer may, from time to time and for such period as the Engineer may deem expedient, suspend in whole or in part, the performance of the Work under the Contract, and the Engineer will order the time herein fixed for the completion of the Work to be extended for a period which is deemed by the Engineer equivalent to the time lost by reason of such suspension.
- (e) No extension shall be made for delay unless written notice of claim is given to the Engineer not later than seven calendar days after the commencement of delay, provided however, that in the case of a continuing cause of delay only one notice of claim shall be necessary.
- (f) In the event that the Work is delayed or suspended in accordance with:
 - (i) Sections 1(a) or (d) of this GC.10, the Contractor shall not be entitled to make any claim by reason of such delay or suspension for any losses, costs of damages except and unless, within seven calendar days of the occurrence of such delay or suspension the Contractor shall give notice in writing to the Engineer of the basis of its claim. Such claim shall be limited to such unavoidable direct costs

(excluding all charges for storage of Products, tools and equipment and indirect, overhead or other like costs) incurred as a result of such delay or suspension, and approved by the Engineer. In the case of a delay as described in Section 1(a) or a suspension pursuant to Section 1(d), a sum equal to five percent of such approved, unavoidable direct costs (in lieu of all profit) shall also be allowed. Despite any other term of this Contract, in no event will the Owner's liability for any delay claim (whether under this GC.10 or otherwise, at law or in equity, in contract or in tort) exceed the lesser of \$500 for each Working Day of delay or two percent of the Contract Price. All unavoidable direct costs claimed by the Contractor must be submitted and substantiated to the Engineer for verification on a weekly basis as incurred, failing which, they shall not be considered nor payable by the Owner. Authorization for any payment of the claim shall only be given in a writing duly signed and issued by the Engineer; and

- (ii) Sections 1(b) or 1(c), the Contractor shall not be entitled to payment for any costs, loss, or damages incurred as the result of such delay and despite any other term of this Contract, the Owner will incur no liability for any such delay claim whether or not such claim is brought at law or in equity, contract or tort, or any other basis.

2. Non-Avoidance

No delay or suspension described in this GC.10 shall vitiate or avoid the Contract, or any part thereof, or any security or obligation for the performance thereof, unless the Owner elects to the contrary.

3. Resumption of Work

At the end of such delay or suspension, or upon the removal of the cause thereof, or upon the Contractor receiving notice from the Engineer requiring the resumption of work, the Contractor shall at once resume the performance of the Work and diligently carry on the same under the direction of the Engineer.

4. Continuance of Work After Time Fixed for Completion

The Contractor shall not construe any direct or inferred permission to continue work after expiry of the time for completion of the Work, as stipulated in the Contract or as amended by the order of the Engineer, as a waiver of damages for non-compliance with the requirement for the completion of the Work by or within such time. The Engineer may provide for the withholding of such amounts from amounts otherwise due to the Contractor as the Engineer deems necessary to satisfy claims by the Engineer, the Owner or Other Contractors caused by such non-compliance with the requirement for the completion of the Work by or within such time.

GC.11 SPECIFICATIONS AND DRAWINGS

The Contractor shall keep in its field office and available to the Engineer a complete set of the Specifications and Drawings, and of any further drawings which may from time to time be supplied or approved by the Engineer. The Contractor shall be supplied with three (3) sets of Specifications.

Wherever standard Specifications are referred to, they shall be the latest edition of those Specifications and they shall be considered to be a part of the Contract.

The Contractor will be supplied with three (3) prints of each of the Drawings and the Contractor must satisfy itself as to the accuracy of the said copies in every detail. Any additional copies desired will be furnished by the Engineer at cost to the Contractor.

The Drawings forming part of the Contract are intended to show the position and extent of the works, the general features of the design and construction, and the dimensions and proportions of all principal parts, but neither they nor the Specifications are guaranteed to show or describe every part or detail of the Work; anything omitted from the Drawings and Specifications, which may fairly be considered to be necessary for the proper execution and completion of the Work, shall be deemed to be required of the Contractor under the Contract.

Anything whatever which may be imperfectly specified or imperfectly shown on the Drawings, must be taken, considered and done as if it were perfectly shown and perfectly specified.

All dimensions on the Drawings, except as noted thereon, are shown in metric units.

The Engineer may from time to time issue further drawings or revised drawings as the Engineer deems necessary and such drawings shall be deemed to form part of the Contract. All sets of Drawings and Specifications shall be kept up to date at all times utilizing the Engineer's revised drawings and other documents issued to the Contractor.

All Drawings, Specifications, model and copies thereof furnished by the Engineer are and shall remain the Engineer's property. Such documents and models are to be used only with respect to the Work, are not to be copied or revised in any manner without the written authorization of the Engineer and are to be returned to the Engineer on request at the completion of the Work.

GC.12 SHOP DRAWINGS

The Contractor shall submit, with such promptness so as to cause no delay in its work, or that of any Other Contractor, one (1) electronic pdf file and one (1) copy of all shop or setting drawings and schedules required for the Work of the Contractor, and the Engineer shall pass upon them with reasonable promptness. The Contractor shall make any corrections required by the Engineer, and file with the Engineer one (1) sepia and one (1) copy.

The Engineer's review of shop drawings or schedules shall not relieve the Contractor from responsibility for any deviation from Drawings and Specifications unless the Contractor has in writing called the Engineer's attention to such deviation at the time of submission, nor shall it relieve the Contractor from the responsibility for errors of any sort in shop drawings or schedules.

GC.13 RECORD PLANS

At the time or before the Contractor applies to the Engineer for a Certificate of Substantial Performance, the Contractor shall deliver to the Engineer, to his or her satisfaction, three (3) complete sets of plans, prepared by a duly qualified professional engineer in accordance with the Record Drawings Standards outlined in the Specifications, showing the Work as constructed.

GC.14 ENGINEER SOLE JUDGE

Should any discrepancies appear in, or any difference of opinion or misunderstanding arise as to the meaning of, the Contract Documents, or should any difference of opinion or misunderstanding arise as to any omissions therefrom, or misstatements therein, in any respect, or as to quality or dimensions or sufficiency of materials, Products, Plant or Work, or any part thereof, or as to the due and proper execution of the Work, or as to the measurement of quantity or valuation of any Work executed or to be executed under the Contract or as to any additional work required thereupon, or deductions therefrom, or as to any other questions or matters arising out of the

Contract, the same shall be determined by the Engineer and the Engineer's decisions shall be final and binding upon all parties concerned, and from such decisions there shall be no appeal; and the Contractor shall immediately, when ordered by the Engineer, proceed with and execute the Work, or any part thereof, forthwith, according to such decisions, and with such additions to or deductions from the Contract Price as are provided for under the terms of the Contract, without making any claim for any extension of time in completing the Contract or the Work, unless otherwise provided for in a writing signed by the Engineer in compliance herewith.

In all cases of misunderstanding and disputes, oral arrangements will not be considered, and the Contractor must produce written authority in support of its contentions, and shall advance no claim in the absence of such written authority, or use, or attempt to use, any conversation with any person whomsoever against the Engineer or the Owner or in prosecuting any claim against any of them.

GC.15 ENGINEER'S ABSENCE

In the absence of the Engineer, any of the Engineer's assistants, whom the Engineer may designate to supervise the Work, shall have (subject to the instructions of the Engineer) full power to decide as to the manner of conducting and executing the Work in every particular aspect, and the Contractor shall follow the instructions or orders of the person so designated.

GC.16 ACCESS AND ASSISTANCE

The Contractor shall furnish the Engineer and any of the Engineer's assistants at all times with convenient means of access to all parts of the Work, and also with all required assistance, to facilitate thorough examination of the same, and inspection, culling or removal of doubtful or defective material or Products and for any other purpose required in connection with the Work, or in the discharge of their respective duties, for which service no additional allowance will be made.

GC.17 COMMUNICATIONS WITH CONTRACTOR

At all times during the performance of the Work, the Contractor will maintain within the Greater Vancouver area an office equipped with a telephone and staffed at all times on all Working Days between 8:30 a.m. and 4:30 p.m. with a representative of the Contractor authorized to act on its behalf in connection with the Work and the Contract.

Before commencement of construction, the Contractor will provide the Engineer with a list of at least three persons with authority to act on the Contractor's behalf in times of emergency in connection with the Work, at least one of whom will be available at all times 24 hours per day after commencement of the Work until completion thereof.

Any notice or communication to the Contractor pursuant to the Contract will be deemed to be well and sufficiently given, delivered and received by the Contractor if delivered in person to any of its apparent representatives, or if mailed or sent to the Contractor at the address set out in the Agreement, or to its place of business, if that is different from the address given there, or left for the Contractor at any Work site or by fax or e-mail to the Contractor's fax number or email address as set out in the Agreement or in the Contractor's Tender.

In any written or printed notice the Owner gives communicating to the Contractor regarding requirements for the Work or otherwise in connection with the Work or the Contract, the Owner will not be obligated to specify minutely or in detail everything required, or to specify by measurement the exact extent thereof, or the precise place or places where any part of the Work, material or Products may be defective, or where any of the Specifications have not been observed, but a reference in such notice to the clause or clauses bearing upon the matter, or a

description of the locality in general terms that is sufficiently clear, in the Engineer's opinion, to indicate where the defects or trouble exists, will be deemed to be ample notice.

GC.18 CONTRACTOR'S SUPERINTENDENT AND EMPLOYEES

The Contractor shall keep on the Work Site, during the progress of the Work, a competent superintendent and any necessary assistants, all satisfactory to the Engineer. The superintendent shall not be changed except with the consent of the Engineer, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in its employ. The superintendent shall represent the Contractor in the Contractor's absence and directions given to the superintendent shall be held to be given to the Contractor. The Contractor shall give efficient supervision to the Work, using its best skill and attention.

Should any person employed on the Work Site, or in connection therewith, give any just cause for complaint, the Engineer may require that such person be replaced forthwith, and such person shall not be again employed by the Contractor on the Work Site without the consent, in writing, of the Engineer.

GC.19 INSPECTION OF WORK

The Engineer may appoint inspectors or surveyors to inspect all materials used, Products made and all Work done. Such inspections may extend to any or all parts of the Work and to the preparation or manufacture of the Products to be used whether on Site or elsewhere. Inspectors and surveyors are not authorized to revoke, alter, enlarge or accept any portion of the Work or to issue instructions contrary to the Drawings and Specifications.

GC.20 PROGRESS REPORTS

The Contractor shall ensure that in carrying out the Work its duly authorized representatives shall review, consider and take into account all Progress Reports, each one as soon as reasonably practicable after creation thereof, but in any event within not more than 1 day thereafter, and at the same time sign or initial each Progress Report to acknowledge having read and considered it and taken it into account, and, within not more than 7 calendar days thereafter, the Contractor shall notify the Engineer in writing of any parts of any such report with which the Contractor disagrees and of the basis for such disagreement.

GC.21 WEEKLY MEETINGS

The Contractor shall meet weekly with the Engineer on the Work Site to discuss work done in the previous week, and work proposed to be done in the week just starting, and at other times, as requested by the Engineer during the course of the Work.

GC.22 CONSTRUCTION SCHEDULE

The Contractor shall have furnished, or shall immediately furnish, the Engineer with a complete construction schedule ("**Construction Schedule**") consistent with the Total Performance date set out in the Contractor's Tender and herein, in addition to the preliminary construction schedule provided in the Contractor's Tender, showing all material dates on which each material component of the Contractor's proposed program of operations will be performed so as to attain Total Performance on the required date. The Construction Schedule must include the various subdivisions of the Work and the dates of the commencing and finishing of each. The Construction Schedule shall be completed using Microsoft Project or other scheduling software as approved by the Engineer.

The form of the Construction Schedule must be approved by the Engineer. On the last day of each calendar month, an updated copy of the Construction Schedule shall be submitted to the Engineer with particulars indicating the percentage completed of each division of the Work to that date.

The Contractor shall immediately advise the Engineer of any deviations from, or proposed changes to, the Construction Schedule. If, in the opinion of the Engineer, the Construction Schedule as submitted is inadequate to ensure the completion of the Work within the time limited therefor, or is otherwise not in accordance with the Tender, or if the Work is not being adequately or properly prosecuted in any respect, the Engineer, without derogating from the Owner's rights under the Contract, shall have the right to require the Contractor to submit a new Construction Schedule providing for proper and timely completion of the Work, and the Contractor shall be entitled to no claim for extension of time on account of such requirement, and such new Construction Schedule, when accepted by the Engineer, shall be a Contract Document.

GC.23 MAINTENANCE OF SCHEDULE

1. Work Delayed by the Contractor

- (a) The Contractor shall at all times provide a sufficient number of skilled personnel to maintain the progress of the Work and compliance with the Construction Schedule, and, if in the opinion of the Engineer, the Contractor delays the progress of the works of Other Contractors, then the Contractor shall be responsible for all loss and damage, including, without limitation, that of Other Contractors for stand-by time and/or delay occasioned thereby.
- (b) If, in the opinion of the Engineer, the Contractor delays or is about to delay the Work or the progress of any portion of the Work as shown by the Construction Schedule, then upon written notification by the Engineer, the Contractor shall use such additional overtime work or shifts as may be necessary to catch up and/or maintain the progress of the Work and the cost and expenses incurred by use of said overtime work or shifts shall be borne entirely by the Contractor.

2. Work Accelerated by the Engineer

- (a) Should the Engineer be required to expedite the final completion of the Work or the works of Other Contractors, then, provided the Contractor is not in default of any of the provisions of the Contract affecting the Construction Schedule, the Engineer may order the Contractor to work additional shifts for which the Owner will pay:
 - (i) the substantiated extra premium wage incurred by such shift work;
 - (ii) the approved additional wages of supervision; and
 - (iii) an agreed percentage addition for profit for accelerated work.
- (b) Such instructions to the Contractor will only be valid when given in writing by the Engineer. The Contractor shall be responsible for having time sheets covering all such shift work checked and approved daily by the Engineer and claims for reimbursement of the extra wages will only be accepted when properly supported by such signed time sheets.

3. Work Out-of-Sequence

The Contractor shall at no additional cost perform its Work as to operation or location out-of-sequence as and when directed by the Engineer.

4. Execution of Other Works or Contracts

- (a) The Contractor shall afford all facilities for the execution of any other works which may be undertaken by the Owner or by such parties as may be employed by them, so that such works may be properly and conveniently completed, and the Engineer shall have full authority to make and enforce such regulations as the Engineer may deem necessary for the conduct of the works; and the Contractor shall proceed in such manner and complete in such order such portions of the Work as the Engineer may require, and the Engineer shall be the sole judge as to what facilities are due and proper, and can be afforded without any undue interference with the execution of the Contract.
- (b) The Contractor shall at all times give free access and every reasonable facility to the employees of the Owner and to Other Contractors, to such portion of the works and adjoining land as may be necessary to enable them to execute and maintain works of any description; such accommodation and access being regulated and directed by the Engineer and no inconvenience or alleged inconvenience arising therefrom shall form any ground for claims, losses or damages, compensation or otherwise, by the Contractor against the Owner.

GC.24 EMERGENCIES

The Engineer has the authority in an emergency to stop the progress of the Work whenever in the Engineer's opinion such stoppage may be necessary to ensure the safety of life, or the Work or neighbouring property. This includes authority to make changes in the Work, and to order, assess and award the cost of work extra to the Agreement or otherwise, as may in the Engineer's opinion be necessary. The Engineer shall within two Working Days confirm in writing any such instructions.

GC.25 SUBCONTRACTORS AND SUPPLIERS

The Contractor shall supply complete information to Subcontractors and equipment and material suppliers. The Contractor agrees to bind every Subcontractor by the terms of the Contract Documents as far as applicable to their component of the Work. Where Specifications and Drawings are required to provide complete information on any aspect of the Work, the Contractor shall supply them to the Subcontractor or supplier concerned.

In every subcontract, to the extent the *Builders Lien Act* is applicable, the Contractor shall specify that the Contractor or agent of the Contractor shall be the person responsible for payment certification under that subcontract for the purposes of the *Builders Lien Act* (and not the Owner or Engineer).

GC.26 CONTRACTOR'S PLANT AND UTILITIES

The Contractor shall at its own expense supply, maintain and remove its field office, all other Plant, and whatever electric or telephone facilities the Contractor requires for its Plant for either domestic or construction purposes.

The Contractor must provide and properly maintain, in clean and sanitary condition, suitable and convenient privy or toilet accommodation for the Contractor's employees so that they shall not

be a source of inconvenience, complaint or nuisance to the public or to others in the vicinity of the Work Site.

The Contractor shall make all necessary arrangements with the Engineering Department of the Owner for obtaining water from the Owner.

GC.27 PLANT, LABOUR AND MATERIALS

The Contractor at its own expense shall provide all necessary temporary buildings and storage grounds and shall furnish all necessary labour, materials and Plant together with all proper and required facilities for moving and transporting the same, so that the Contract and all Work required to be done under it can and will be carried on in a workmanlike manner, properly, satisfactorily, continuously and expeditiously, to completion, to the Engineer's satisfaction in all respects. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality.

Should any Plant, equipment, appliance, materials or workmanship which the Engineer may deem to be inferior or unfit for use in or on the Work be brought on the Work Site or used, the same shall be wholly removed therefrom within 24 hours after notification to that effect from the Engineer, and in the case of failure or neglect on the part of the Contractor to remove the same the Engineer may cause the same to be taken away at the Contractor's expense, and deposited, wasted or otherwise disposed of in any locality, place or way the Engineer considers convenient or proper, and the Contractor shall forthwith pay to the Owner on demand, all expenses incurred including storage, if any, or the same may be deducted or collected by the Owner as provided in GC.58.

GC.28 MATERIAL AND EQUIPMENT SUPPLIED BY THE CONTRACTOR

Products and equipment supplied by the Contractor shall be as specified in the Contract Documents. If the Contractor wishes to supply and install Products or use equipment other than as specified, the Contractor shall apply for and must receive written permission from the Engineer before incorporating such items into the Work. Descriptive literature and price schedules covering such alternative Products or equipment shall be supplied to the Engineer if requested.

The Contractor shall furnish for the approval of the Engineer as the Engineer may reasonably require samples of any Products of any kind to be used in the Work and no Products shall be used which are in any way inferior to the approved samples; but it is understood that the approval of any Product shall not subject the Owner or the Engineer to pay for the same or prevent the rejection afterwards of any portion thereof which is found in the Engineer's judgement to be unsound or unfit to be used; nor shall such approval be considered as any waiver of objection to the Work at any subsequent period on account of the unsoundness or imperfection of the Products used.

GC.29 MATERIAL IN IMPERIAL UNITS

Where manufactured Products that are specified in metric units are not available, materials manufactured to Imperial units may be substituted, provided the Contractor can satisfy the Engineer that the substitute materials are at least equivalent to those specified.

GC.30 SUPPLY OF MATERIALS BY THE OWNER

The Contractor's responsibility for materials, equipment and other things supplied by the Owner shall begin upon the Contractor's acceptance at the points of supply to the Work Site. All such materials shall be examined and the Contractor shall advise the Engineer in writing of any

defective or damaged material. Any material supplied by the Owner which is damaged after acceptance by the Contractor shall be replaced by the Contractor at his own expense.

Anything supplied by the Owner that is not required for the Work shall remain the property of the Owner. Such things shall be neatly stored at the point of original supply.

GC.31 TEMPORARY STRUCTURES

Temporary structures erected by the Contractor shall remain the Contractor's property and be removed from the Work Site on completion of the Work.

The Contractor shall be responsible for the design, adequacy, safety and efficiency of all falsework, temporary structures and construction processes required in connection with the completion of the Contract. All such designs and plans shall be prepared and sealed by a Professional Engineer licensed to practice in British Columbia and submitted to the Engineer for review and comment, but such review shall not relieve the Contractor of any responsibility. The Contractor shall make good at the Contractor's expense immediately all defects arising from the Contractor's faulty design, equipment or application thereof.

GC.32 WORK AREAS AND CONTRACT LIMITS

The Contractor shall carry out the Work entirely within the Work Site, except that, subject to GC.36, in carrying out the Work the Contractor may use Landfill roads outside of the Work Site for transporting labour, materials and equipment to and from the Work Site and, with the explicit approval of the Engineer and the City, may place its Work Site office at a location outside of the Work Site but within the Landfill as approved by the Engineer and City.

Any rights to access any land or property outside the Landfill boundaries which the Contractor may require during construction shall be acquired by the Contractor at the Contractor's own expense, and the Contractor shall make its own arrangements for the use of such land or property and for the compensation of its owners.

GC.33 TRUCK SAFETY

The Contractor will ensure that all its and all Subcontractor trucks and machines brought to the Landfill will at all times be operated in a safe and courteous manner and in full compliance with Applicable Laws and Landfill requirements regulating their truck use, including all such requirements regarding vehicle speed, routing, engine brake noise, weight and load securement. There will be zero tolerance on overloading trucks and un-tarped loads.

Landfill speed limits are 30 kph in most areas, 15 kph in the area of scales and 10 kph in the Zero Waste Centre.

The Contractor will ensure that all its and all Subcontractor trucks and other load carrying machines traveling to and from the Work Site in connection with the Work are inspected prior to departure to and from the Work Site to ensure that loads are properly secured and tarped and that there is no loose equipment or debris anywhere on the vehicle and no debris or rocks caught in wheels or tires.

GC.34 STORAGE AREAS

Working and storage areas will be allocated by the Engineer for use by the Contractor. The Contractor shall be responsible for the maintenance and clean-up of the allotted areas.

GC.35 HOURS OF WORK

Without limitation to any other requirements hereunder, the Contractor will ensure that in carrying out the Work it and all Subcontractors will comply at all times with all Applicable Laws which affect the hours during with Work may be carried out, including, without limitation any municipal noise control by-laws.

The Contractor shall keep the Engineer advised on the proposed hours of work so that inspection can be co-ordinated. Work without inspection shall not be permitted.

Except as may otherwise be explicitly permitted pursuant to the Contract, the Work will be carried out only during regular Landfill hours of operation which are 7:00 A.M. and 3:30 P.M. Monday to Friday, excluding "holidays" as defined in the *Interpretation Act* (British Columbia), and except in the event of an emergency or by special arrangement made with the Engineer, City personnel and inspectors will not be available for Work related matters outside these hours. The Engineer will be available for all critical stages in the Work in accordance with notification requirements under the Contract. Any Work requiring any City, Engineer or third-party inspections or supervision under the Contract or Applicable Laws must be performed only in accordance with applicable inspection and/or supervision requirements.

The Contractor shall ensure that the Work is carried out with minimal disruption to others using and/or working at the Landfill and without obstruction to the safe and continuous access to the Work Site and the other areas of the Landfill for City personnel and other persons authorized to access them.

Notwithstanding anything else in the Contract, the City will not be obligated to pay the Contractor for overtime wages paid to Contractor or Subcontractor personnel expect in accordance with the Contract and/or in circumstances in which the City has provided its explicit prior written approval therefor and which give rise to adjustments to the Contract Price in accordance with the Contract, and, in any event, in no circumstances whatsoever will the City be obligated to pay the Contractor for any Work related overtime wage expenses it may incur in excess of 10 hours per day or 6 days per week.

GC.36 TRAFFIC CONTROL

The Contractor, at its expense, shall provide, erect and maintain barriers, fencing and other prudent safety equipment and measures in relation to the Work related traffic within the Landfill and, if required by the Engineer, shall provide traffic control persons, watchpersons, signage and lights as may be prudent for the safety of all persons.

Within ten Working Days of receipt of a Notice of Award, the Contractor shall have submitted (or failing which, shall immediately upon the execution hereof submit) the detailed Traffic Management Plan for the Engineer's approval incorporating all aspects of the preliminary traffic management plan provided by the Contractor with its Tender as well as all further details then available to the Contractor or reasonably requested by the Engineer in preparation for commencement of the Work following receipt of a Notice to Proceed.

The Contractor shall, from the date of commencement to the date of completion of the Work, assume responsibility for the barricading and signing of hazards resulting therefrom or any other obstruction or impediment to pedestrian or vehicular traffic, be these works in progress prior to or subsequent to the above mentioned date of commencement.

Unless ordered otherwise by the Engineer, the Contractor shall inspect its barricades and warning signs around the Work Site at least once per day.

If at any time any Work is carried out at night, the Contractor must supply, at the Contractor's expense, a sufficient number of traffic control personnel and electric or other approved lights to enable it to be done safely and in an efficient and satisfactory manner, and the Engineer shall have the right to order additional traffic control related personnel and or lighting at the Contractor's expense if, in the Engineer's opinion, they are or may be required.

At no time will the Contractor be permitted to completely close-off to traffic any of the Landfill's main haul roads except outside of normal Landfill operating hours and then only with explicit prior approval from the Engineer, and without limitation to anything else in the Contract, the Contractor shall have no cause for claim against the City whatsoever with respect to any delays or other interruption of the Work due to this requirement.

The Contractor will ensure that none of its personnel or any of its Subcontractors' personnel will at any time use any part of the Work Site for any personal or other vehicle parking, except for vehicles actively and reasonably required for and in use in the performance of the Work. Vehicle traffic within the Work Site must be limited to Work purposes only, such as paving, staging and delivery and in full compliance with WorkSafeBC requirements and guidelines.

GC.37 PUBLIC CONVENIENCE

In carrying out the Work, or any portion thereof, the convenience of the public must always be specially considered and provided for by the Contractor, who must not obstruct any street, thoroughfare or sidewalk longer or to any greater extent than is absolutely necessary in the Engineer's opinion. The Contractor shall not deposit any material upon any street, sidewalk, boulevard, grass plot, or other City or public property, without the Engineer's permission; nor shall the Contractor allow the same to remain thereon longer than necessary but must remove all rubbish and other material, clean and thoroughly restore all such places to as good and as tidy a condition as the Contractor found them, as speedily as possible, from time to time as the Work progresses, or as directed. Unless material and rubbish are removed within four days after the completion of the Work, without previous notice to the Contractor the Engineer will proceed to do whatever is necessary to restore such places to as good and as tidy a condition as before the commencement of the Work and charge the cost thereof against the Contractor. Where the Contractor obstructs more of any street, roadway or place than is ordered or sanctioned by the Engineer in writing, then the Engineer may cause such obstructions to be removed at the expense of the Contractor.

GC.38 [INTENTIONALLY DELETED]

GC.39 PROTECTION OF WORK AND PROPERTY

The Contractor shall at all times maintain adequate protection for the Work from damage and shall protect the Owner's property from all injury arising in connection with the Contract. The Contractor shall make good any such damage or injury. The Contractor shall protect adequately adjacent property as required by law and the Contract.

GC.40 FIRE, SECURITY AND SAFETY REGULATIONS

1. Fire and Security

The Contractor shall comply, and the Contractor shall enforce compliance by all its agents, employees, Subcontractors and suppliers, with any and all fire regulations which have been or may be established from time to time by the Engineer and anybody having jurisdiction over such matters.

All security regulations which have or may be promulgated by the Engineer or other authorized representatives of the Owner shall be complied with. Watchmen for the Work Site may be provided by the Owner at the Owner's discretion. However, neither the Owner nor the Engineer will be responsible for any loss or damage to the property of the Contractor whether or not watchmen are provided by the Engineer. The Contractor will furnish such security as the Contractor feels necessary for the protection of the Contractor's equipment and Products stored or used on Site.

2. Loss Control

The Contractor will establish a "Loss Control Program," satisfactory to the Owner to meet WorkSafeBC and other requirements.

3. Safety

When required by WorkSafeBC Regulations, first aid facilities, including an attendant, shall be provided on the Work Site at all times during working hours by the Contractor. Such facilities will be completely equipped in accordance with the requirements of WorkSafeBC.

The Contractor shall be fully responsible for taking all necessary precautions for the safety of the Contractor's workers on the Work Site or of complying with all applicable safety laws and regulations, including regulations pursuant to the *Workers' Compensation Act*, to prevent accidents or injury to persons on, about or adjacent to the Work Site.

The Contractor shall provide all safeguards required directly for or as a result of the Work as referred to in GC.39 - Protection of Work and Property and in the scope of Work described in the Contract Documents.

GC.41 OVERLOADING

No part of the Work Site shall be loaded with a load greater than it is calculated to bear safely. Should any damage or accident occur through the violation of this requirement, the Owner will hold the Contractor solely answerable and liable.

GC.42 DRAINAGE

The Contractor shall keep all portions of the Work well, properly and efficiently drained until completion, and the Contractor will be held responsible for all damage which may be caused or result from water backing up or flowing over, through, from or along any part of the Work, or which any of the Contractor's operations may cause to flow elsewhere.

GC.43 CLEANING UP

The Contractor shall at all times keep the Work Site free from accumulations of waste material or rubbish caused by its employees or work, and at the completion of the Work, it shall remove all its rubbish from and about the Work Site and all its tools, scaffolding and surplus materials, and shall leave the Work Site "broom clean" or the equivalent, unless more exactly specified. In case of dispute, the Engineer may remove the rubbish and charge the cost to the Contractor as the Engineer shall determine to be just.

GC.44 SAFEGUARDING EXISTING PROPERTY

Existing property, buildings, fences or other improvements of any kind shall be protected by the Contractor during the life of the Contract. The Contractor shall make good to the satisfaction

of the Engineer any damage done to the existing property, buildings, fences or other improvements. This applies to areas of private property incorporated in the Work area.

Where removal of existing improvements such as pavement, fences, structures, sewers and ducts is necessary during the course of the Work, the same shall be re-established by the Contractor to the satisfaction of the Engineer. The cost of protection and rehabilitation shall be borne by the Contractor.

GC.45 EXISTING UTILITIES

The Contractor will be responsible for the care of all public utilities and in the event of any of these requiring to be removed, raised or lowered permanently, this will be done either by the Owner or by the utility company interested and at the expense of the Owner. If temporary alteration of location is required for purposes of the construction, such work shall be done by the Owner or by the utility company interested at the expense of the Contractor. The Contractor, however, will be held responsible for, and will have to bear the cost due to any damage done to utility services through its operations.

Reasonable notice must be given to the Engineer of any change required in utility services.

Existing utilities may or may not be shown on the Drawings. These, however, are shown for convenience only and the Owner assumes no responsibility for improper locations, or failure to show utility locations on the construction plans. The Contractor shall prove its locations by obtaining relevant City of Vancouver plans and uncovering the utilities on Site at no extra cost to the Owner.

The Contractor shall provide adequate barricades and lighting around and adjacent to any open excavation or potentially dangerous location or other locations designated by the Engineer.

The Contractor shall at all times ensure that the fire hydrants are not obstructed.

GC.46 DUST, ODOUR, AND LITTER CONTROL

The Contractor shall at all times, by way of water sprinkling or by other methods approved by the Engineer, control within the Landfill any dust and flying debris caused by its Work related activities. Without limitation to the foregoing, the Contractor shall at all times while carrying out Work related excavations within the Work Site take reasonable steps to minimize and control dust, odour and uncontrolled spread of Landfill waste. In this respect, the Contractor will:

- to limit foul odours caused by excavations, keep to a minimum the amount of exposed open trench or excavation activities;
- before the end of each Work day remove or otherwise handle and deal with all excavated waste materials in accordance with all legal and Contractual requirements and, if for any reason that is not reasonably possible on any particular Work day ensure that all such waste is covered or otherwise left as required by the Engineer;
- take necessary measures to control litter from such excavations; and
- treat all excavated materials containing asbestos as directed in the Specifications and in accordance with the Health and Safety Plan.

GC.47 ALTERATIONS, EXTRAS, DEDUCTIONS & CLAIMS

- (a) The Owner without invalidating the Contract shall have the right to make or order any alterations and changes to the Work, such as it may deem advisable, at any time before or during the prosecution of the Work, in any line, grade, Drawings, Specifications or detail thereof, or to increase or decrease the dimensions, quantity of material or work, or to alter the situation or level, or to vary the form or dimensions of any part of the

Work, or to vary in any other way the Work; or to order any additional or extra work to be done or additional or extra materials to be furnished; and the Contractor shall, in pursuance of the Engineer's written orders to that effect, proceed with, carry out and execute the Work as directed, and shall supply such additional materials and do such additional or extra work in pursuance of such orders without being entitled to any extension of time for completion, or any additional payment on account thereof, except only as herein provided.

- (b) In each and every case where additional or extra work or material of any kind is ordered to be done or supplied, or where the Contractor does or supplies, or contemplates doing or supplying, any work or material the Contractor shall notify the Engineer in writing and shall state in its notification clearly and fully what the circumstances are, and the additional sum or compensation it intends to demand therefor, otherwise it shall have no claim in respect thereof. The Owner shall make such additional payments as the Engineer determines are reasonable and appropriate, provided that:
- (c) the Engineer shall follow any unit or lump sum prices contained in the Schedule of Quantities and Prices (Schedule 3) applicable to such work, labour or material, and if, and to the extent that, in the opinion of the Engineer only some or none of the unit or lump sum prices aforesaid apply, the hourly rates set out in the Schedule of Force Account Labour and Equipment Rates (Schedule 8) (to the extent they are applicable);
- (d) any unit or lump sum prices contained in the Schedule of Quantities and Prices (Schedule 3) shall be deemed to include all amounts on account of overhead, profit, administrative, and any other indirect expenses or allowances; and
- (e) any compensation to the Contractor that is valued on a basis other than a unit or lump sum price contained in the Schedule of Quantities and Prices (Schedule 3) is consistent with the following:
 - (i) The Contractor will receive combined overhead and profit equal to ten percent (10%) of the direct unavoidable costs incurred by the Contractor's use of his own forces;
 - (ii) The Contractor will receive five percent (5%) combined overhead and profit on the amounts paid by the Contractor to any Subcontractor as a direct result of the additional or extra work or material; and
 - (iii) Subcontractors will receive combined overhead and profit of ten percent (10%) on account of the direct unavoidable costs incurred by the Subcontractor as direct result of the additional or extra work or material.
- (f) If any work, labour or material is not required to be performed or supplied, then the Owner may deduct from the Contract Price the value of such work, labour or material not required to be performed or supplied which shall be determined by:
 - (i) using the unit or lump sum prices contained in the Schedule of Quantities and Prices (Schedule 3) applicable to such work, labour or material; or
 - (ii) if, and to the extent that, in the opinion of the Engineer some or none of the unit or lump sum prices aforesaid apply, then using the hourly rates set out in the Schedule of Force Account Labour and Equipment Rates (Schedule 8); or
 - (iii) such fixed sum as agreed upon between the Contractor and the Owner.

- (g) All claims of every nature which the Contractor may have in respect of the Contract or Work done thereunder, are to be summarized and submitted by it (in duplicate) to the Engineer within one month of the completion of same, and the Contractor shall make no claim of any nature afterwards; and no claim not then made or not then allowed by the Owner shall be sustainable, and the Owner shall be in no way disentitled to determine any and all questions concerning said claims, and no action or suit shall be commenced by either party to the Contract until after the Certificate of Total Performance shall have been signed by the Engineer and then only for the amount appearing therein to be due to the Contractor.

GC.48 ERRORS BY CONTRACTOR

Changes, errors or mistakes made by the Contractor or the Contractor's Subcontractors, workmen or employees, and all settlements, washouts and defects, shall be rectified by the Contractor at its expense.

GC.49 TESTING OF MATERIALS

Except where otherwise specified, testing of materials will be carried out by the Contractor and paid for by the Contractor.

GC.50 DEFECTIVE WORK

All defective work must be forthwith made good by the Contractor at its own expense to the Engineer's or Owner's satisfaction, as the case may be.

GC.51 WARRANTY

The Contractor shall perform the Work in a proper and workmanlike manner and in accordance with the requirements of the Contract Documents and guarantee the Work against any defects arising from faulty installation, material or workmanship during the period of 12 months from the date of issuance of the Certificate of Substantial Performance and make good in a permanent manner satisfactory to the Owner any defects arising from any of these causes. Where the Contract Documents provide for a warranty of greater scope or duration than set out in this General Condition, the broader and longer warranty provisions will apply.

Whether the Contractor should replace defective Products or Work, or repair the same, shall be determined by the Engineer. Should the Contractor fail to make good defects within three Working Days after being notified by the Owner to do so, the Owner at its option may do so and all costs, charges and expenses so incurred may be deducted or collected by the Owner as provided in GC.58 - Money Due to Owner; provided that the Owner shall first deduct such amounts from the Maintenance Security Holdback. If the Owner assesses the defects to be dangerous or determines that an emergency situation exists, the Owner, at the Owner's discretion will effect repairs immediately and all costs, charges and expenses so incurred may be deducted or collected by the Owner as provided in GC.58 - Money Due to Owner; provided that the Owner shall first deduct such amounts from the Maintenance Security Holdback. The decision of the Owner shall be final as to the necessity of repairs or of any work done or required to be done under the provisions of the Contract and for the amounts expended thereunder. If in the opinion of the Engineer, it is in the Owner's best interests (taking into account effects on the Owner's overall schedule, the difference in value between the Work as performed and that called for by the Contract Documents, and other relevant factors) not to correct defective Work or Work not provided in the Contract Documents, the Engineer will assess the amount which should be deducted from the amount otherwise due to the Contractor and will assess the length of time by which the obligations should be extended in order to put the Owner in as close a position financially and in terms of the useful life of the Work as would have been the case had the

Contractor performed the Work as called for by the Contract Documents. For further certainty, the Engineer may extend the warranty period in appropriate circumstances to a minimum of twice the warranty period originally provided for under the Contract Documents, subject always to the above parameters.

GC.52 CONTRACTOR'S LIABILITY

The Contractor shall be liable for any and all losses, damages, or claims for damages, for injuries or accident to persons or property done or caused by the Contractor, the Contractor's Subcontractors or employees, or resulting from the prosecution of the Work or any of its operations, or caused by reason of the existence or location or condition of the Work, or of any materials, Products or Plant used therein or thereon, or which may happen by reason thereof, or arising from any failure, neglect or omission on the Contractor's part, or on the part of the Contractor's Subcontractors or employees, to do or perform any or all of the several acts or things required to be done by the Contractor or them under and by the Contract, and the Contractor covenants and agrees to indemnify and save harmless at all times the Owner against all such damages and claims for damages whatsoever arising out of or in connection therewith, and in the event of any such action being brought by any person against the Owner, either directly or indirectly, or by reason of the execution of the Contract, the Owner may enforce payment by the Contractor of all such loss, costs, damages and expenses as a debt due to the Owner.

In the case of the Contractor's failure, neglect or omission to observe and perform faithfully and strictly all the provisions of the Contract, the Owner may either with or without notice (except where in this Contract notice is specially provided for, and then upon giving the notice therein provided for), take such steps, procure such material, equipment, trucks, and men, and do such work or things as it may deem advisable towards carrying out and enforcing the same, and any and all expenses so incurred may be deducted or collected by the Owner under the provisions of GC.58, or from the Maintenance Security Holdback.

Any such action taken by the Owner under this General Condition as it is herein empowered to take shall not in any way relieve the Contractor or its sureties from any liability under the Contract.

GC.53 INSURANCE BY THE CONTRACTOR

- (a) The Contractor shall obtain and maintain throughout the term of the Contract and the prosecution of the Work, all of the insurance policies required by Schedule 9.
- (b) All insurance coverage described in Schedule 9 shall be issued by an insurance carrier or agent acceptable to the Owner and licensed to conduct business in the Province of British Columbia.
- (c) Upon request of the Engineer or the Owner, the Contractor shall be required to deliver a Certificate of Insurance, and where required by the Owner's Director of Risk Management, certified copies of all policies and endorsements, evidencing the placement and endorsement of insurance in accordance with this GC 53.
- (d) Contractors and their Subcontractors shall be required to furnish evidence of the renewal of policies described in this General Condition by renewal certificate, endorsement or certified copy to be received by the Owner at least 15 calendar days prior to the expiry date of the policy.
- (e) If the Contractor fails to obtain and maintain insurance as required hereunder, or if the Owner does not approve any insurance policy or policies submitted to the Owner and the Contractor thereafter does not meet the requirements of the Owner as to terms and

conditions of the insurance policy, the Owner shall have the right to place and maintain such insurance in the name of the Contractor. The cost thereof shall be payable by the Contractor to the Owner on demand, and the Owner may deduct the cost thereof from any monies which are due or may become due to the Contractor. If coverage should lapse, all work by the Contractor shall be stopped until satisfactory evidence of renewal is produced.

- (f) Each policy described in Schedule 9 shall be required to be endorsed to provide the following notice for policy changes and cancellations to the Owner: "It is understood and agreed that this policy will not be cancelled, reduced, materially altered or changed without the insurer giving at least 30 calendar days' prior written notice by registered mail to the City of Vancouver."
- (g) In addition to the requirements of Schedule 9, each Contractor and each of its Subcontractors shall provide at its own cost any additional insurance which it is required by law to provide or which it considers necessary.
- (h) All deductibles shall be for the account of and be paid by the Contractor upon demand by the Owner. The Owner shall have the right to deduct amounts for which the Contractor is responsible under this GC 53 from any monies which are due or may become due to the Contractor.

GC.54 WORKSAFEBC ASSESSMENTS

Prior to execution of the Agreement and prior to commencing the Work under the Contract, the Contractor shall provide a letter from the WorkSafeBC confirming the Contractor's registration and that all assessments have been paid to the date thereof. The Contractor shall require that the Contractor's Subcontractors maintain such coverage and pay such assessments as will protect them, the Owner and the Engineer from claims under the *Workers' Compensation Act* (British Columbia), as amended from time to time and regulations pursuant thereto.

GC.55 CLAIMS FOR WAGES

The Owner may settle any claim for damages, and pay all wages overdue or the price of any materials or the amount due and payable by the Contractor to any Subcontractor, for which payment is in arrears, and the amount thereof shall be debt due by the Contractor to the Owner, as and for money paid by them for the contractor and shall be deducted or collected by them as provided in GC.58 - Money Due to Owner, but the Owner does not assume any liability in this respect; nor shall the persons to whom such wages or payments are paid become, by such payments, the employees or servants of the Owner or third party beneficiaries of this Contract.

GC.56 LIENS

The Contractor hereby agrees to make payment and take all other steps which may be necessary to insure that all Contract monies, the Work Site and the Work, and every part thereof, shall be and remain at all times free from and not liable to any lien or charge at law or in equity, or to any claim of liability under the *Builders Lien Act*, or to any attachment for debt, garnishee process or otherwise, and the Contractor and its sureties, as well as its respective executors, administrators, successors and assigns, shall fully indemnify and save harmless the Owner and all its officers, servants and employees from any and all such liability, and shall, on demand, immediately cause any such lien, charge, claim or attachment to be removed or released from the records of any Land Title Office or court in which the same may appear.

Notwithstanding anything to the contrary contained in the Contract Documents, the Owners shall not be obliged to pay any monies to the Contractor if and for so long as any liens exist against the Work or the Work Site.

GC.57 PATENT INFRINGEMENT

The Contractor shall fully indemnify the Owner against and from all suits or actions arising from the claim of any person or persons who are or claim to be patentees of any process used in connection with the Work or of any material, Products, Plant, machinery, tool or appliance used therein or thereon, or in any way therewith.

GC.58 MONEY DUE TO OWNER

All money payable to the Owner by the Contractor may be retained out of any money then due, or which may become due from them to the Contractor under this or any other contract with the Owner, or otherwise howsoever, or may be recovered from the Contractor and its sureties, or any of either of them, in any Court of competent jurisdiction, as a debt due to them; and the Engineer shall have full power to withhold any estimate or certificate, if circumstances arise which may indicate to him the advisability of so doing, until the Engineer is satisfied that the Work and material so far done or furnished are in accordance with the Contract and that the Contractor is otherwise entitled thereto, though the sum to be retained may be unascertained.

GC.59 ASSIGNMENT

The Contractor shall not, without the consent in writing of the Owner first had and obtained, assign or transfer any sum or sums, or any part thereof, due or to become due to the Contractor under the Contract, or assign, transfer or sublet any portion of the Contract or of the Work but must carry out the Work with its own men or subcontract under the Contractor's supervision. This Section however does not apply to the furnishing of material for the different parts of the Work, for which material, however, the Contractor will be held strictly responsible, and no excuse for the quality of the material or for the non-delivery in good time by any Subcontractor, as affecting the progress of the Work, will be entertained, nor will the Owner's consent to the assigning, transferring or subletting of any portion of the Work relieve the Contractor from any of its obligations or liabilities under the Contract. No assignment, transfer or subletting hereinbefore mentioned, except if the same is made in accordance herewith, shall be in any manner valid or binding on the Owner.

GC.60 CERTIFICATES AND PAYMENTS

1. Payment Certifier

The Engineer shall be the "payment certifier" and the person responsible for payment certification under the Contract for the purposes of the *Builders Lien Act*, if and to the extent applicable, and shall otherwise be responsible for certifying payments in accordance herewith. The Engineer will not be the "payment certifier" under any subcontract.

2. Certificate for Substantial Performance

- (a) When in the Contractor, in its opinion, has achieved Substantial Performance of any part(s) of the Work to which the concept of Substantial Performance applies hereunder, the Contractor shall notify the Engineer forthwith in writing thereof after which the Engineer in consultation with the Owner shall attempt to identify any deficiencies in the Work and shall provide the Contractor with a list of and the Contractor shall forthwith do all things necessary to correct such deficiencies.

- (b) When all such deficiencies in the Work in question have been rectified to the Engineer's satisfaction, the Engineer shall recommend that the Work is ready for an inspection as described below herein to determine whether Substantial Performance has been achieved, and after completion of such official inspection, the Contractor may request in writing the issuance of a Certificate of Substantial Performance.
- (c) The Contractor shall include with its request for issuance of a Certificate of Substantial Performance, to the Engineer's satisfaction:
 - (i) the "as constructed record plans" of the Work required by GC.13 - Record Plans;
 - (ii) documentation showing compliance with WorkSafeBC requirements; and
 - (iii) a sworn declaration in a form acceptable to the Engineer that all amounts relating to the Work, due and owing as of the end of the month covered by Section 5.3 of the Form of Agreement to third parties including all Subcontractors and suppliers, have been paid.
- (d) In preparation for the issuance of a Certificate of Substantial Performance, the Owner, the Engineer and the Contractor shall inspect the Work and any remaining deficiencies shall be detailed and included in the Certificate of Substantial Performance when issued.
- (e) Upon issuance of the Certificate of Substantial Performance the Engineer shall set a reasonable date by which the Contractor is to achieve Total Performance.
- (f) For the purposes of the *Builders Lien Act* (to the extent applicable), the Certificate of Substantial Performance shall serve as the Contract's certificate of completion within the meaning of that statute, and the date of Substantial Performance as stated in the Certificate of Substantial Performance shall be deemed to be the date of the Certificate's issuance.

3. Certificate of Total Performance

Upon the provision of satisfactory evidence that all deficiencies in any Work for which a Certificate of Substantial Performance has been issued hereunder have been rectified in accordance herewith, the Owner and the Engineer will then inspect the Work to verify such rectification, and, upon being satisfied that such deficiencies have been rectified and upon rectification of all claims and receipt of all statutory declarations as specified in Section 4(b) of GC.60 to the reasonable satisfaction of the Engineer, the Engineer will issue the Certificate of Total Performance.

4. Statutory Declarations

The Contractor shall submit with each of the Contractor's applications for payment such statutory declarations as may be required herein, which shall be sworn in duplicate by the Contractor, or by such person on behalf of the Contractor as the Engineer may approve.

- (a) Prior to payment and as condition to any payment, the Engineer may at any time require the Contractor to file with the Engineer a statutory declaration showing that all wages for the various classes of labour, the hire of trucks, equipment, etc., employed in or about the Work Site, all Products or other things supplied for use in or upon the Work and amounts due to Subcontractors and suppliers have been paid and satisfied and that there is no encumbrance, lawful claim or lien accruing for labour or services in connection with the Work.

Should any amounts be due and unpaid for wages, equipment, hire, Products and Subcontractors or suppliers as above listed or any encumbrance, lawful claim or lien accrue, the amounts shall be listed on a duly attested statement, in duplicate, and attached to the statutory declaration referred to above.

The Engineer may at any time, if the Engineer deems it advisable, require from the Contractor a statement showing the rates of wages paid by the Contractor for the various classes of labour, the rates of hire of trucks and equipment employed and the prices and quantities of any Products supplied for use in or upon the Work and may also require the statement to show in detail the names of unpaid employees, the rates of wages and amounts due to each, and the names of creditors, quantities, prices and amounts due to each. Such statement shall be duly attested in duplicate as above and be a condition precedent to the right of the Contractor to receive payment.

- (b) Prior to final payment and as a condition to issuance by the Engineer of a Certificate of Total Performance, the Contractor shall file with the Engineer a statutory declaration showing that all Work in respect of the Contract has been completed; all accounts, detailed in the first sentence of Section 4(a) of this General Condition have been paid and satisfied and there is no encumbrance, lawful claim or lien accruing for labour, products or services in connection with the Work; and payments already received and now due under the final payment application are accepted by the Contractor as full compensation for everything furnished and done by the Contractor under the Contract.

5. Other Documentation

The Engineer may as a further condition to any payment, at any time, require the Contractor to furnish such or other detailed information as may be necessary to establish to the Engineer's satisfaction the compliance by the Contractor with the conditions of the Contract.

6. Books Open for Inspection

The Contractor's payrolls, time-books, books of account, invoices, receipt and statements relating to its Work under the Contract shall be at all times open for inspection and extract by the Engineer and the Owner and any authorized representative of them.

GC.61 TERMINATION OF CONTRACT WITHOUT DEFAULT OF CONTRACTOR

The Engineer may, as agent for and on behalf of the Owner, at the Engineer's discretion terminate the Contract at any time upon written notice to the Contractor notwithstanding the fact that the Contractor may not then be in default, in which event the Owner shall be liable to the Contractor only for a reasonable amount for Work done and materials delivered at or to the Work Site up to the date of the termination.

Upon payment of the aggregate of the aforesaid sums, the Owner, the Engineer and the Contractor shall be released from their liabilities or obligations under the Contract save and except that the liabilities and obligations of the Contractor shall continue with respect to deficiencies and warranties in the portion of the Work completed prior to termination.

GC.62 TERMINATION OF CONTRACT FOR CONTRACTOR'S DEFAULT

The Engineer as agent for and on behalf of the Owner, without prejudice to any other right, may elect to terminate the Contract forthwith upon notice to the Contractor if:

- (a) the Contractor fails to comply with the Notice to Proceed;

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- (b) the Contractor commits an act of bankruptcy or becomes a bankrupt or makes a general assignment for the benefit of the Contractor's creditors;
- (c) a receiver is appointed for the Contractor's business;
- (d) the Contractor fails, on reasonable notice from the Engineer, to supply enough proper workmen or Products;
- (e) the Contractor does not pay promptly the Contractor's employees, Subcontractors or suppliers;
- (f) the Contractor does not comply with the requirements of the WorkSafeBC Regulations, or otherwise fails to meet the safety requirements of the Contract; or
- (g) the Contractor persistently or substantially breaches any provision of this Contract.

On such termination the Engineer may arrange for the performance of the Work by whatever method the Engineer deems expedient but without undue delay or expense.

The Engineer may take possession of all Products, equipment, tools, structures and appliances belonging to or provided by the Contractor located on the Work Site which the Engineer deems necessary to prosecute the Work which possession the Contractor hereby pledges to the Engineer as agent for and on behalf of the Owner, as security for the performance of the Contract and the Work, provided that upon completion of the Work the Engineer shall return to the Contractor or its legal representative any such chattels so taken in possession in their original condition (ordinary wear and tear excepted) if not incorporated in the Work, without any compensation for use thereof.

In case the Work or any part thereof is assumed from the Contractor, as herein provided, it shall in no way affect the relative obligations of the Owner and the Contractor or its sureties in respect of the Contractor's or their obligation, or in respect of the remainder of the Work (if any), as the Engineer may consider reasonable. The Contractor and its sureties in every case shall be liable for such damages, expenditures and extra expenditures, and for all additional cost of the Work which may be incurred by reason of termination of the Contract pursuant to this GC.62, together with the compensation for liquidated damages, if any, from the date fixed for the Total Performance of the Work, and the same may be deducted or collected by the Owner as provided by GC.58.

All the powers of the Engineer with respect to the determination of any doubts, disputes and differences, and the determination of the sum or sums, or balance of money to be paid to or received from the Contractor, and otherwise in respect of the Contract shall nevertheless continue in force.

The fulfilment by the Contractor of any stipulation in the Contract may be enforced by legal proceedings and judgement, or order of Court, without prejudice to any other remedy herein contained. Neither the Owner nor any of its officials, officers, employees or other agents shall be liable or accountable to the Contractor in any way for the manner in which, or the price at which the Work, or any portion thereof, may have been or may be done or completed by the Owner.

No proceeding taken pursuant to this GC.62 or pursuant to any other provision of the Contract, shall at any time be deemed to be an assignment of the Contract or of any portion thereof, unless otherwise agreed to in writing.

GC.63 SUBMITTALS

The Contractor shall submit Product data and samples to the Engineer for review on request. The Contractor's responsibility for deviation in submittals is not relieved by the Engineer's review unless the Engineer gives written acceptance of specific deviations from the requirements of the Contract Documents. The Contractor shall make any changes in submittals which the Engineer may request consistent with the Contract Documents and shall resubmit as directed by the Engineer. The Contractor shall not proceed with work until relevant submittals have been reviewed by the Engineer. The Contractor shall co-ordinate submittals with the requirements of the Contract Documents and shall allow 10 calendar days for the Engineer's review.

GC.64 NON-RESIDENT WITHHOLDING TAX

If the Contractor is, at any time, a non-resident of Canada, within the meaning of the *Income Tax Act* (Canada) as amended, then, and the Contractor hereby so agrees, the Owner may deduct from all money payable under the Contract and remit to the Receiver-General of Canada, the Government of Canada or the Canada Revenue Agency sums required to be withheld and remitted by the *Income Tax Act* (Canada), as amended.

The Owner will receive a further credit under the Contract for money withheld as of and from the date of the withholding (regardless of when or whether remitted) and no interest will be payable by the Owner on sums withheld, not remitted as aforesaid and later paid directly to the Contractor.

GC.65 RELEASE AND INDEMNIFICATION

The Contractor now releases the Owner, its officers, officials, employees and agents from all costs, Losses, damages and expenses, including those caused by personal injury, death, property damage, loss and economic loss arising out of, suffered or experienced by the Contractor, its Subcontractors, and their respective officers, employees and agents, or suffered or experienced by any other entity or person in connection with the performance of the Work.

Despite the provision of insurance coverage by the Owner, the Contractor hereby agrees to indemnify and save harmless the Owner, its successors, assigns and authorized representatives and each of them from and against Losses, claims, damages, actions, and causes of actions that the Owner may sustain, incur, suffer or be put to at any time either before or after the expiration or termination of the Contract, that arise out of the acts of the Contractor, its Subcontractors, or their respective officers, employees or agents under the Contract.

This indemnity will not affect or prejudice the Owner from exercising any other rights that may be available to it at law or in equity.

The release and indemnity set out above will survive the expiry or sooner termination of the Contract.

GC.66 NO PROMOTION OF RELATIONSHIP WITH THE OWNER

The Contractor shall not disclose or promote its relationship with the Owner, including by means of any verbal declarations, announcements, sales, marketing or other literature, letters, client lists, press releases, brochures or other written materials ("Communications") without the express prior written consent of the Owner (except as may be necessary for the Contractor to perform the Contractor's obligations under the terms of the Agreement). The Contractor shall not use the Owner's logo or any of the Owner's official marks without the express prior written consent of the Owner.

GC.67 WORK WITH ENGINEER AND COORDINATION ON SITE

In carrying out the Work, the Contractor shall coordinate the Work as necessary with the Engineer, the Owner and Other Contractors. The Contractor shall have no cause for claim against the City whatsoever with respect to delays or other interruption of the Work by City forces or due to the above requirement to coordinate the Work with the Engineer, the Owner and Other Contractors.

The Contractor will be responsible for completing the Work in a way that does not interfere in any way with other work at the Work Site being conducted either by the City or Other Contractors. The Contractor will have no cause for claim against the City whatsoever with respect to delays or other interruption of the Work due to these requirements

Notwithstanding any other provision hereof, the Contractor's rights to access the Landfill shall at all times be subordinate to the rights of Other Contractors already performing operations at the Landfill as of the date of the Agreement and to the regular Landfill operations.

The Contractor, as and when required, shall obey any and all directives or orders from the BC Ministry of Environment and Climate Change Strategy and/or any other regulatory authorities having jurisdiction requiring the Contractor to stop or delay the Work.

GC.68 INSPECTION

The Engineer and/or the Owner may inspect the Work at any time without prior notice to the Contractor.

GC.69 [INTENTIONALLY DELETED]

GC.70 WORK DURING INCLEMENT WEATHER

In accordance with the Specifications, and expect with the explicit approval of the Engineer, no Work involving the placement, compaction and/or installation of materials within the Work Site (including, but not limited to the geomembrane, geotextiles, geosynthetic clay liner or soils) shall be conducted in rain or snow, wet Landfill surface conditions or in poor Landfill sub-grade conditions.

The Engineer may order the Contractor to cease Work operations in whole or in part due to inclement weather at any time.

Further to GC.10, there will be no extensions of time to complete the Work as provided for in the Construction Schedule granted and no extra compensation payable on account of delays in the Work caused by inclement weather, and any costs incurred by the Contractor to accelerate the Work in order to comply with the Construction Schedule will be borne solely by the Contractor.

GC.71 SUBSURFACE CONDITIONS

The Contractor now represents that it is experienced and familiar with assessing and working with the variable and unpredictable conditions in nature of compacted landfill waste materials and uncertain sub-surface conditions and acknowledges that the Owner has made available to it some information regarding the relatively unknown state of decay, decomposition and compaction and the types of residential, commercial, industrial waste, demolition and other materials put into the Landfill, and the Contractor now assumes all risks of any and all kind and nature associated with performing the Work on and in landfill waste, whether or not such risks arise due to the reasonably foreseeable consequences of working in and around landfill waste

and whether or not such risks are the result of sub-surface conditions which were not known to the Contractor at the time of submitting the Contractor's Tender, and the Contractor now agrees not to make any claim for an extension of Contract Time or additional compensation for anything arising during the Contract which would not have occurred but for the conditions of the landfill waste contained in the Work Site.

The Contractor shall be solely and fully responsible to take all necessary measures to protect underground utilities from any excavation damage within the work site. The Owner has indicated the presence of underground utilities known to be within the proposed area of excavation on the Construction Drawings issued for Tender. The location of underground utilities as identify in the Drawings shall be considered approximate and for information only. The underground utilities include, but are not limited to fiber optic cables, pump discharge force mains, electrical conduits and cables, gas, water and sewage pipes. Irrespective of the depth of the utility line, the Contractor must not use mechanical excavating equipment to dig within the boundary limits to expose the utility line. Hydrovac excavation or equivalent can be used as an alternative to hand digging.

GC.72 ENVIRONMENTAL PROTECTION AND SUSTAINABILITY

The Contractor shall ensure that at all times in carrying out the Work it shall not do anything that might cause and shall do all things necessary to protect against any Work related environmental harm and shall cooperate fully with the City and local authorities to protect the natural environment.

The Contractor will provide environmentally sensitive products or services wherever possible. Where the Contract Documents require that the Contractor supply materials, and where such materials may cause adverse effects, the Tenderer is to notify the City of the nature of the hazard. The Contractor is to advise the City of any known alternatives or substitutes for such materials that would mitigate the effects of any adverse conditions on the environment.

GC.73 FORCE ACCOUNT

Payment for Force Account Work performed by the Contractor shall be calculated as follows:

- (a) Labour: at the lower of the hourly rates set out in the Tender under Schedule D- Force Account Labour & Equipment Rates including all amounts paid for labour and all related taxes, assessments payable as required by any statutory scheme such as workers' compensation premiums, employment insurance premiums, holiday pay, insurance and all employee benefits. A mark-up of 3% on the foregoing shall be allowed for all small tools. A mark-up of 10% on the total of the foregoing, including the foregoing mark-up, shall be allowed for overhead. A further mark-up of 10% on the total of the foregoing, including the foregoing mark-ups, shall be allowed for profit. Overtime rates will be determined as outlined in GC. 35.
- (b) Equipment shall be paid for in the lesser of:
 - (i) Contractor Owned or Bare Rented: at the non-operated hourly rates as set out in Schedule 8 - Force Account Labour & Equipment Rates, based on actual hours, in minimum increments of 0.5 hours, plus a 10% mark-up to cover all overhead costs and profit. Plus, an allowance for the operator wage as per GC. 73, subsection (a); or
 - (ii) Non- Contractor Owned and Operated: at the lower of the rate presented in Schedule 8- Force Account Labour & Equipment Rates for operated equipment, or the actual rental costs incurred by the Contractor, as evidenced by invoice, plus, in either case, a 10% mark-up to cover all overhead costs and profit.

- (iii) All Found (AF) rates as presented in the Equipment Rental Rate Guide by BC Road Builders & Heavy Construction Association (Blue Book). If a particular item of equipment is not listed than a rate determined by the Engineer based on equivalent equipment shall be used.
- (iv) Separate rental for small tools will not be allowed.
- (c) Materials incorporated into the work or consumed in performing the Work: at the Contractor's actual cost, as evidenced by invoice, including all transportation, freight and haulage costs plus a mark-up of 10% on such actual cost to cover all overhead, handling and profit.

Force Account Work performed by a Subcontractor (or a subcontractor of a Subcontractor) shall be paid for in the lesser of: (i) the amount as provided by subparagraphs (a), (b) and (c) above (as if the Subcontractor (or such subcontractor of a Subcontractor) were the Contractor), plus a mark-up of 10%, in total, to cover all overhead and profit of the Contractor, the Subcontractor and any such other subcontractor; or (ii) the actual amount the Contractor pays the Subcontractor, plus a mark-up of 10% on such actual amount to cover all overhead and profit.

GC.74 INTERRUPTIONS OF EXISTING GAS NETWORKS

All Work shall be performed in a manner which causes minimal disruption of the existing Landfill gas control systems, and the Contractor shall take all precautions necessary to ensure that the existing gas piping network, blower and flare system is maintained to allow continuous extraction of gas while the Work is being performed and to ensure that sufficient vacuum is maintained for each existing Landfill well that might be affected by the Work.

GC.75 LIQUIDATED DAMAGES

1. **Liquidated Damages for Late Substantial Performance:** If the Contractor fails to achieve Substantial Performance on or before the date specified in the Construction Schedule, as may be adjusted from time to time pursuant to the provisions of the Contract, then the Owner may deduct from any monies yet to be paid to the Contractor for the Work:
 - liquidated damages in the lesser of \$2,000 per day or the total actual costs to the Owner to pay a consultant for Work related Quality Assurance and Contract administration services during the period of delay.
2. **Liquidated Damages for Late Total Performance:** If the Contractor fails to achieve Total Performance by the date specified in the Construction Schedule of the Agreement, as may be adjusted pursuant to the provisions of the Contract Documents, then the Owner may deduct from any monies yet to be paid to the Contractor for the Work:
 - liquidated damages in the lesser of \$2,000 per day or the total actual cost to the Owner to pay a consultant for Work related Quality Assurance and Contract administration services during the delay.
3. **Damages Payable by the Contractor:** If monies owing to the Contractor under the Agreement are less than the total amount of liquidated damages and other amounts specified in this GC.75, then the excess amount of such liquidated damages and other amounts shall be immediately, upon written notice from the Owner, be due and payable by the Contractor to the Owner.

4. **Remedies Cumulative:** The remedies specified in this GC.75 are in addition to, and without prejudice to other remedies available to the Owner under the Contract or in law or equity. All liquidated damages provided for herein shall be cumulative.

GC.76 COMPLIANCE WITH LAWS

The Contractor will complete the Work in accordance with the requirements of all Applicable Laws.

The Contractor will be required to obtain and pay for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work. Without limiting the foregoing, the Contractor will obtain any City of Delta permits, Ministry of Environment and Climate Change Strategy permits, FortisBC permits, or other required permits for the Work. The City will not be liable in any manner for same and the Contractor agrees to indemnify and save the City harmless from and against all claims and losses in relation to obtaining and paying for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work. Extra compensation will not be allowed for costs incurred by the Contractor as a result of the failure of the City or the Contractor to secure construction permits such that the Contractor can proceed with the Work in accordance with the Construction Schedule.

GC.77 QUANTITY VARIATION

If for any reason, including an addition or deletion of work, the actual quantity of a unit price item listed in the Schedule of Quantities and Prices varies, neither the Contractor nor the Owner shall be entitled to unilaterally revise the unit price of said item. The unit rates set out in the Schedule of Quantities and Prices shall be considered fixed.

GC.78 DAMAGE TO OTHER CONTRACTORS

If in the performance of the Work the Contractor causes damages to an Other Contractor, the Contractor shall use best reasonable efforts to reach a settlement with the Other Contractor. If an Other Contractor commences litigation or arbitration proceedings against the Owner on account of damage that the Other Contractor alleges was caused by the Contractor, then the Owner shall so notify the Contractor in writing. On written demand from the Owner, the Contractor shall, at the Contractor's own expense, reasonably cooperate with the Owner in the defence of the Other Contractor's claim, or assume the entire defence of the Owner. If a final order or judgement is given in such litigation or proceeding against the Owner the Contractor shall pay or satisfy it and pay all defence costs reasonably incurred by the Owner.

GC.79 LIVING WAGE

1. Definitions

For the purposes of this GC.79, the following terms shall have the following meanings:

- (a) **"Living Wage"** means the hourly wage established by the Living Wage Certifier from time to time, which, as of the date of execution of the Contract, is \$20.62 per hour, which includes: (i) direct wages; and (ii) the value of any non-mandatory benefits such as paid sick leave, employer-paid Medical Services Plan premiums and extended health benefits;
- (b) **"Living Wage Certifier"** means the Living Wage for Families Campaign, any successor entity, or, in the event the Living Wage for Families Campaign ceases to carry on operations, such other living wage certification entity designated by the Owner to the Contractor in writing;

- (c) **“Living Wage Employee”** means any and all employees of the Contractor and all Subcontractors of the Contractor that perform any part of the Work on a property owned by or leased to the Owner, including all streets, sidewalks and other public rights of way, for at least one consecutive hour, but excluding Students, volunteers and employees of Social Enterprises;
- (d) **“Social Enterprise”** means a business that: (i) is owned by a non-profit organization or community services co-operative; (ii) is directly involved in the production and/or selling of goods and services for the combined purpose of generating income and achieving social, cultural, and/or environmental aims; and (iii) has a defined social and/or environmental mandate; and
- (e) **“Student”** means an individual who is enrolled in a school, college, university or other educational institution and is employed by the Contractor or a Subcontractor, as the case may be, to obtain practical workplace experience as a requirement of or credit for their education.

2. Payment of Living Wage

- (a) Notwithstanding any other provision of any Contract Document but subject to GC.79(2)(b), the Contractor shall pay all Living Wage Employees not less than the Living Wage.
- (b) Notwithstanding GC.79(2)(a), the Contractor has up to 6 months from the date on which any increase in the Living Wage is published by the Living Wage Certifier to increase wages for all Living Wage Employees such that all Living Wage Employees continue to be paid not less than the Living Wage.
- (c) The Contractor shall ensure that the requirements of GC.79(2) apply to all Subcontractors.
- (d) A breach by the Contractor of its obligations pursuant to GC.79(2)(a) and (c) shall be deemed to constitute a failure by the Contractor to comply with the requirements of the Contract to a substantial degree and shall entitle the Owner to terminate the Contract in accordance with GC.62.
- (e) The Contractor shall maintain up-to-date records and accounts which clearly document its satisfaction of the requirements of this GC.79 and shall make the same available to the Owner upon request. The Owner may request copies of all such records and accounts which shall be provided to the Owner by the Contractor (subject to reimbursement of the Contractor’s reasonable copying costs and any other direct costs and expenses, if any) at any time prior to the expiry of 365 days after Total Performance of the Work or earlier termination of this Agreement. Any records and accounts provided by the Contractor in accordance with this Section GC.79(2)(e) shall be treated by the Owner as confidential information.
- (f) The Contractor shall, at the direction of the Owner, post signs at Sites that are owned by or leased to the Owner, including all streets, sidewalks and other public rights of way, informing Living Wage Employees of the obligations of the Contractor and Subcontractor pursuant to this GC.79 and providing contact information to report any breaches thereof. The Owner shall supply the Contractor with all such signs and the Contractor shall return all such signs upon completion of the Work or otherwise at the request of the Owner.

- (g) The Contractor shall prepare and submit to the City in a format reasonably acceptable to the City before January 31 of each calendar year of the term or, for each partial calendar year of the term, within 30 days of the expiry of the term a living wage report setting out:
 - (i) the number of Living Wage Employees of the Contractor and each Subcontractor who were paid a Living Wage pursuant to this Section GC.79 during the previous calendar year or portion thereof that would not have received a Living Wage for substantially similar work but for the obligations of the Contractor pursuant to this GC.79; and
 - (ii) the total incremental costs incurred by the Contractor, including any amounts paid to Subcontractors, in order to fulfill its obligations pursuant to this GC.79 to pay a Living Wage to the Living Wage Employees described in GC.79(e)(i).

**SCHEDULE 2
SPECIFICATIONS AND DRAWINGS**

The following is a list of the Specifications and Drawings:

SPECIFICATIONS

Section 00 51 00 - Project Overview

Section 01 42 16 - Definitions

Section 01 11 00 - Summary of Work

Section 00 73 19 - Site Health and Safety Requirements

Section 01 14 00 - Work Restrictions

Section 01 20 00 - Measurement and Payment

Section 01 30 00 - Administrative Requirements

Section 01 32 16 - Construction Progress Schedules

Section 01 33 00 - Submittal Procedures

Section 01 42 19 - Reference Standards

Section 01 45 00 - Construction Quality Control

Section 01 50 00 - Temporary Facilities and Controls

Section 01 60 00 - Product Requirements

Section 01 71 23 - Field Engineering

Section 01 77 00 - Closeout Procedures

Section 01 94 00 - Decommissioning of Existing Gas System

Section 02 01 55 - Maintenance of Existing Gas Control System

Section 03 30 53 - Cast-In-Place Concrete

Section 03 48 00 - Precast Concrete

Section 05 50 00 - Metal Fabrications

Section 31 23 01 - Excavating, Trenching and Backfilling

Section 34 71 10 - Road Crossings

Section 31 23 02 - Earthwork for Landfill Gas System and Other Items

Section 31 25 00 - Erosion Control

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Section 31 32 23 - Geogrid

Section 31 32 19 - Geotextiles

Section 31 32 20 - LLDPE Geomembrane

Section 31 41 00 - Shoring

Section 32 12 16 - Hot Mix Asphalt Paving

Section 32 92 13 - Hydraulic Seeding

Section 33 20 85 - Pipe Casing

Section 33 23 10 - Vertical Gas Well

Section 33 51 10 - Landfill Gas Pipe, Fittings and Valves

Section 33 51 20 - Well Head Control Assembly

Section 33 61 00 - Cover Penetration Seal

DRAWINGS

DWG No.	REV.	TITLE
001 SERIES - EARTH WORK		
20025-3-001	D	TITLE SHEET
20025-3-002	D	DRAWINGS LIST
20025-3-003	D	LEGEND
20025-3-004	D	SITE PLAN AND STOCKPILE LOCATION
20025-3-005	D	PROJECT OVERVIEW
100 SERIES - EARTH WORK		
20025-3-101	D	LEGEND
20025-3-102	D	SITE PLAN
20025-3-103	D	SOUTH GAS HEADER PIPE PLAN AND PROFILE STA 0+000 THRU 0+360
20025-3-104	D	SOUTH GAS HEADER PIPE PLAN AND PROFILE STA 0+360 THRU 0+740
20025-3-105	D	SOUTH GAS HEADER PIPE PLAN AND PROFILE STA 0+740 THRU 1+120

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20025-3-106	D	SOUTH GAS HEADER PIPE HP#1 AND CT#1 PROFILES
20025-3-107	D	SOUTH GAS HEADER PIPE HP#2 AND CT#2 PROFILES
20025-3-108	D	SOUTH GAS HEADER PIPE HP#3 AND CT#3 PROFILES
20025-3-109	D	SOUTH GAS HEADER PIPE HP#4 AND CT#4 PROFILES
20025-3-110	D	SOUTH GAS HEADER PIPE HP#5 AND CT#5 PROFILES
20025-3-111	D	SOUTH GAS HEADER PIPE HP#6 AND CT#6 PROFILES
20025-3-112	D	SOUTH GAS HEADER PIPE HP#7 AND CT#7 PROFILES
20025-3-113	D	SOUTH GAS HEADER PIPE HP#8 AND CT#8 PROFILES
20025-3-114	D	SOUTH GAS HEADER PIPE HP#9 AND CT#9 PROFILES
20025-3-115	D	SOUTH GAS HEADER PIPE HP#10 AND CT#10 PROFILES
20025-3-116	D	SOUTH GAS HEADER PIPE HP#11 AND CT#11 PROFILES
20025-3-117	D	SOUTH GAS HEADER PIPE HP#12 AND CT#12 PROFILES
20025-3-118	D	SOUTH GAS HEADER PIPE HP#13 AND CT#13 PROFILES
20025-3-119	D	SOUTH GAS HEADER PIPE HP#14 AND CT#14 PROFILES
20025-3-120	D	SOUTH GAS HEADER PIPE HP#15 AND CT#15 PROFILES
20025-3-121	D	SOUTH GAS HEADER PIPE HP#16 AND CT#16 PROFILES
20025-3-122	D	SOUTH GAS HEADER PIPE HP#17 AND CT#17 PROFILES
20025-3-123	D	GAS HEADER PIPE WEST CONNECTION PLAN
20025-3-124	D	GAS HEADER PIPE ROAD CROSSING #1 PLAN
20025-3-125	D	GAS HEADER PIPE ROAD CROSSING #2 PLAN
20025-3-126	D	PHASE 5 GAS SUB-HEADER PIPE ROAD CROSSING PLAN & PROFILE
20025-3-127	D	PHASE 5 GAS LATERAL PIP ROAD CROSSING PLAN & PROFILE
20025-3-128	D	GAS HEADER PIPE EAST CONNECTION PLAN
20025-3-129	D	GAS AND CONDENSATE CONVEYANCE DETAILS
20025-3-130	D	GAS AND CONDENSATE CONVEYANCE DETAILS
20025-3-131	D	GAS AND CONDENSATE CONVEYANCE DETAILS
20025-3-132	D	GAS AND CONDENSATE CONVEYANCE DETAILS

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20025-3-133	D	GAS AND CONDENSATE CONVEYANCE DETAILS
20025-3-134	D	CONDENSATE DROPOUT CROSS DETAILS
20025-3-135	D	CONDENSATE DROPOUT TEE DETAILS
20025-3-136	D	CONDENSATE DRAIN TRAP DETAILS
20025-3-137	D	CONDENSATE DRAIN TRAP DETAILS
20025-3-138	D	CONDENSATE DRAIN TRAP DETAILS
20025-3-139	D	DECOMMISSIONING DETAILS
20025-3-140	D	DECOMMISSIONING DETAILS
100 SERIES - VERTICAL GAS WELLS		
20025-3-151	D	VERTICAL GAS WELL PROFILES
20025-3-152	D	VERTICAL GAS WELL DETAILS
20025-3-153	D	WELL HEAD CONTROL ASSEMBLY FOR VERTICAL GAS WELL
20025-3-154	D	WELL HEAD CONTROL ASSEMBLY DETAILS
20025-3-155	D	WELL HEAD ADAPTER & COVER PENETRATION SEAL DETAILS
200 SERIES - LEACHATE COLLECTOR		
20025-3-200	D	PLAN VIEW
20025-3-201	D	PHASE 5S LEACHATE COLLECTION UPGRADES PROFILE
20025-3-202	D	PHASE 5S LEACHATE COLLECTION UPGRADES PROFILE
20025-3-203	D	PHASE 5S LEACHATE COLLECTION UPGRADES PROFILE EXTENSION
20025-3-204	D	LEACHATE COLLECTOR DETAILS 1
20025-3-205	D	LEACHATE COLLECTOR DETAILS 2
300 SERIES - GAS SAMPLE PORTS		
20025-3-300	D	LEACHATE LFG PORT #1 PLAN
20025-3-301	D	GAS SAMPLE PORT DETAILS 1
20025-3-302	D	LEACHATE LFG PORT #2 PLAN EXPANDED PLAN & PROFILE
20025-3-303	D	LEACHATE LFG PORT #3 PLAN
20025-3-304	D	GAS SAMPLE PORT #3 DETAILS

INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
SCHEDULE 2 -SPECIFICATIONS AND DRAWINGS

400 SERIES - SPECIFICATIONS		
20025-3-400	D	MATERIAL SPECIFICATION - 1
20025-3-401	D	MATERIAL SPECIFICATION - 2
20025-3-402	D	GRADATION CURVES - 1
20025-3-403	D	GRADATION CURVES - 2
20025-3-404	D	GRADATION CURVES - 3

The above listed Specifications and Drawings are in the form provided or available to the Contractor as part of the Invitation to Tender.

SCHEDULE 3
SCHEDULE OF QUANTITIES AND PRICES

[To be added from Contractor's Tender.]

INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
SCHEDULE 4 - SUBCONTRACTORS AND SUPPLIERS

**SCHEDULE 4
SUBCONTRACTORS AND SUPPLIERS**

SUBCONTRACTORS

Type of Work	Subcontractor	Address

SUPPLIERS (THESE ARE ALSO “SUBCONTRACTORS” FOR PURPOSES OF THE CONTRACT).

Item	Supplier/Manufacturer	Address

No Subcontractor listed in Schedule 4 shall be replaced without the written consent of the City, which consent shall not be unreasonably withheld.

SCHEDULE 5
CONSTRUCTION SCHEDULE

[To be attached.]

SCHEDULE 6
PERFORMANCE AND LABOUR AND MATERIAL PAYMENT BONDS

[To be attached.]

SCHEDULE 7
INSURANCE CERTIFICATES

[To be attached.]

SCHEDULE 8
FORCE ACCOUNT LABOUR AND CONSTRUCTION EQUIPMENT RATES

[To be added from the Tender.]

**SCHEDULE 9
INSURANCE**

1. All Risk Course of Construction Insurance

(a) Coverage

"All Risks" of physical loss or damage.

(b) Property Insured

(i) At Site

All materials, equipment and machinery, labour and supplies of any nature whatsoever, Work in progress, including property of the insured or of others for which the insured may have assumed responsibility, to be used in or incidental to the Site preparations, demolition or existing structures, erection and/or fabrication and/or reconstruction and/or repair of the project insured, commencing when the property becomes at the insured's risk, at the Site, and while there awaiting, during and subsequent to erection and/or fabrication and/or repair and/or testing.

(ii) Transit

Property to enter into and form a part of the project insured, from the commencement of loading at the original point of shipment anywhere in Canada or the continental United States of America, but excluding such property in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.

(iii) Off-Site

Off-Site coverage shall apply to property that is to be incorporated into and form a part of the project insured, anywhere in Canada or the Continental United States of America, but excluding such property while in transit or in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.

(c) Insureds

The Owner, the Contractor, and their respective officials, officers, employees and agents.

(d) Term

During the period of the construction operations and also during any period in which the property insured is being prepared for use and while partially used or occupied; provided all coverage shall cease when the Work has been formally accepted as complete by the Owner, whichever shall first occur.

(e) Limit and Deductibles at Site

(i) Limit of Liability: Full replacement value of the Work

(ii) Deductible not to exceed \$5,000.

2. **“Wrap Up Liability Insurance”**

(a) ***Insureds***

The Owner, the Engineer, the Contractor, and all Subcontractors, and their respective officials, officers, employees and agents.

(b) ***Limits***

Bodily injury liability and property damage liability including aggregate products and completed operations: \$5,000,000 for each occurrence.

(c) ***Extensions of Coverage***

- (i) Broad form products and completed operations liability, including coverage for activities of the Contractor and Subcontractors during the completed operations period;
- (ii) Owner’s and contractor’s protective liability;
- (iii) Blanket contractual liability;
- (iv) Contingent employer’s liability;
- (v) Personal injury liability;
- (vi) non-owned automobile liability;
- (vii) Cross liability or severability of interest clause;
- (viii) Employees as additional insureds;
- (ix) Blasting, collapse, underpinning, shoring, pile driving, dredging or grading activities;
- (x) Loading and unloading of automobiles;
- (xi) Hoist liability;
- (xii) Unlicensed and specially licensed vehicles;
- (xiii) Operation of attached machinery;
- (xiv) Limited pollution liability arising out of hostile fire and sudden and accidental release of contaminants.

(d) ***Deductibles***

Deductible not to exceed \$5,000.

(e) ***Cross Liability***

The insurance shall apply to any action brought against any one of the insureds by any other insured in the same manner as though separate policies were issued to each.

(f) ***Term***

Period of construction or completion of the Work, whichever shall first occur, plus 24 months for completed operations liability thereafter.

(g) ***Waiver of Subrogation***

It is understood and agreed that in the event of a loss and upon payment of claim hereunder, the insurer will waive the any right of subrogation against the Owner, the Engineer and all architects, engineers or consultants engaged in or connected with the construction and Site preparation and related operations of the Work and any of their servants, agents, employees, and parent, subsidiary, affiliated or associated firms.

3. **Automobile Insurance**

A standard owner's form automobile policy for licensed vehicles providing third party liability and accident benefits insurance as provided by the Insurance Corporation of British Columbia (Autoplan) in accordance with applicable British Columbia law, with the minimum limits as follows:

Bodily injury and property damage (third party limit) inclusive limit: \$5,000,000.

4. **Contractor's Equipment Insurance**

"All Risk" insurance with insurers acceptable to the Owner, covering all construction equipment, owned or rented, or for which the Contractor or any of its Subcontractors may be responsible. In the event of loss or damage to the said construction equipment, or any part thereof, the Contractor or the Subcontractor, as the case may be, shall, if so requested by the Owner in writing, forthwith replace such damaged or destroyed construction equipment.

It is understood and agreed that in the event of a loss and upon payment of claim hereunder, the insurer will waive any right of subrogation against the Owner, the Engineer and all architects, engineers or consultants engaged in or connected with the construction and Site preparation and related operations of the Work and any of their servants, agents, employees, and parent, subsidiary, affiliated or associated firms.

SCHEDULE 10
CITY PRE-CONTRACT HAZARD ASSESSMENT FORM

CONTRACT TITLE: CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL

PROJECT MANAGER (CITY EMPLOYEE): ROD ZEDAN

CONTRACT NAME & # (IF KNOWN): PS20220171

Purpose

This document shall be completed by the project manager, who shall list all the **known** worksite hazards and all the **existing** work process hazards that will be associated with the upcoming contract. The completed document shall then be provided to all potential contractors, as part of the tender package, so the project can be bid appropriately based on the known worksite hazards.

Definitions

Project Manager - the City employee designated to be the liaison with the contractor for the purpose of managing, overseeing, coordinating or in any other way administering the contract.

Instructions for Completion

The document must be completed in full. Choices for each entry are:

Y - Yes - the known worksite hazard or existing work process hazard does exist

N - No - the known worksite hazard or existing work process hazard does not exist*

NA - Not Applicable - worksite hazard or existing work process is not applicable for this contract type

TBD - a third party (environmental consultant) will address the issue (primarily for a hazardous materials assessment)

*based on reasonable estimation from all input by persons with expertise or relevant knowledge and understanding

Information from Hazardous Materials Assessments Provided by a Third Party

A hazardous materials assessment may be completed prior to the Project Manager completing the Owners List of Known Workplace Hazards. Any such assessment should be referenced by the Project Manager in this document and provided with the tender package. Hazardous materials may include asbestos, lead, crystalline silica, ammonia, PCB's, CFC's, moulds, mercury, ozone depleting substances (ODS), radioactive substances.

Work Description:

This construction work will involve the replacement of the south gas header, leachate pipes and drilling of vertical gas wells. It will involve trenching, excavating, movement of materials, purging, fusing, assembling, and associated civil works. The work will be carried out in Phase 4, Phase 5, on Western 40 and in proximity to the main road of the landfill from Phase 3 SE to the Phase 1.

Work Changes

If there are any changes to the work description, please review this document to ensure any additional hazards posed by the new scope of work are identified.

Vancouver Landfill Owner's List of Known Workplace Hazards

1. ASBESTOS-CONTAINING MATERIALS - asbestos is accepted for disposal at the landfill in accordance with the asbestos policy, asbestos trench/work area at the active face, residential drop off area asbestos bin, buried throughout the Landfill site with some locations identified, and any area of the site due to accidental receipt.	Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)
a) Asbestos containing materials (ACM) may be encountered	Y
b) A hazardous materials assessment for asbestos is provided in the tender package	N
c) A hazardous materials assessment for asbestos is the responsibility of the contractor	Y

If yes to a), Vancouver Landfill Asbestos Exposure Control Plan available upon request.

2. LEAD-CONTAINING MATERIALS - disturbance of lead-based paint, buried wood, electrical circuitry or metal alloys.	Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)
a) Inorganic lead-containing materials may be encountered	Y
b) A hazardous materials assessment for lead is provided in the tender package	N
c) A hazardous materials assessment for lead is the responsibility of the contractor	Y

3. OTHER HAZARDOUS MATERIALS - moulds and spores (at the Landfill active face and composting facility), wastewater treatment plant residuals, i.e. grit and sludge/scum screenings (at the Landfill active face), water treatment plant residuals (at the Landfill active face), bottom ash (on roads 40/50, at the Landfill active face), leachate/condensate (throughout the site), ammonia (ammonia-containing fridges accepted at RDO)	Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)
a) A resource document for (list the specific hazardous material) is provided in the tender package Document title:	N
b) A resource document for (list the specific hazardous material) will be provided in the tender package Document title:	N
c) A hazard assessment for (list the specific hazardous materials) will be the contractors responsibility	Y

If yes to any, provide the applicable document upon request:

Moulds and spores - Landfill Control Measures Against Exposure to Microbiological Agents - Safe Operating Procedure

Wastewater treatment plant residuals - *Wastewater Treatment Residuals OH&S Info* - 2014-03

Water treatment plant residuals - *Drinking Water Treatment Residuals OH&S Info* - 2014-03

Vancouver Landfill Owner's List of Known Workplace Hazards

Bottom ash: Safe Operating Procedure: Bottom Ash Management at Vancouver Landfill and Executive Summary of *Vancouver Landfill Bottom Ash Management: Occupational Exposure Assessment and Human Health Risk Assessment*

Ammonia - Management of Ammonia-Containing Refrigerators - Safe Operating Procedure

Leachate - The construction work site may be adjacent to a leachate collection ditch. Leachate is a by-product of solid waste decomposition and is actively and passively controlled at the landfill site. Leachate can produce a wide range of materials including methane, carbon dioxide and a complex mixture of organic acids, aldehydes, alcohols and simple sugars. Leachate is unlikely to pose a significant risk to adverse effects on health. However, the contractor should implement controls to limit worker access to the leachate collection ditch and first aid procedures to include access to fresh air for respiratory irritation and water flushing for skin contact.

4. CONFINED SPACES - as marked on site at flare station, pump station, compost, scales, admin parking lot. Examples include flares, sewer manholes, sewer wet wells, water/oil separator, drainage sump, utility chambers.	Yes (Y) No (N) or Not Applicable (NA)
a) A hazard assessment (for entry and inspection only) from the City of Vancouver is provided in the tender package	N
b) The City of Vancouver shall provide procedures to isolate adjacent piping, or to lock out equipment (complicated systems only)	N
c) The contractor shall be responsible for identifying work site confined space locations and implementing isolation and lockout procedures in the confined space including the use of a Confined Space Permit process	Y

5. LOCK OUT - lockout procedures required for specific equipment and electrical systems (i.e. electrical repair, pump maintenance/repair).	Yes (Y) No (N) or Not Applicable (NA)
a) Lockout will be required to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic, explosive/toxic gasses)	Y
b) Work will be performed on or near energized equipment, lines, or circuits	Y

If yes to a) or b) describe:

The contractor will implement a documented lock out procedure which will include a Lock Out Permit process.

6. FALL PROTECTION - any time a person will be exposed to a fall of 10' or greater, or a fall of less than 10' where serious injury may occur: tree pruning, working on a roof, window and ledge cleaning, window replacement, roll-up door replacement/maintenance, tent installation, awning/canopy installation, overhead air exchange installation/maintenance, construction inspection and testing services.	Yes (Y) No (N) or Not Applicable (NA)
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Vancouver Landfill Owner's List of Known Workplace Hazards

a) Workers will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	Y
b) Scaffolding or ladders will be required to be secured to a building or structure where applicable	Y

7. OVERHEAD AND UNDERGROUND UTILITIES - overhead high voltage power lines, underground utilities i.e. gas, water, sewer, etc.	Yes (Y) No (N) or Not Applicable (NA)
a) There will be electrical hazards associated with overhead power lines such as limits of approach and contact	Y
b) Necessary assurances (in writing) have (or will be) obtained by the City, through the utility company, for any work where minimum limits of approach cannot be maintained (provide documentation and review at pre job meeting with the successful contractor candidate). Form 30M33 is the assurance in writing acceptable to WorkSafe BC.	N
c) Necessary assurances must be obtained (in writing) by the successful contractor, through the utility company, for any work where minimum limits of approach will not be able to be maintained. Form 30M33 is the assurance in writing acceptable to WorkSafe BC.	Y
d) Underground or hidden utilities are located on the job site. Any excavation or drilling work in proximity to an underground utility service must be undertaken in conformity with the requirements of the owner of that utility service. The work will require the owner's utility plans and/or BC1 Call package as appropriate.	Y

If yes to c), and the specific physical locations where minimum limits of approach will not be able to be maintained are known, how will this information be provided to the contractor?

Power lines and buried utilities at or near the site will be reviewed with the contractor to determine if minimum limits of approach cannot be maintained.

8. CONSTRUCTION, EXCAVATION, SHORING AND DEMOLITION	Yes (Y) No (N) or Not Applicable (NA)
a) As Prime Contractor, the Prime Contractor project manager will submit the Notice of Project when required	Y
b) The Prime Contractor will determine if workers will be required to enter an excavation over 1.2m (4 ft.) in depth	Y

Vancouver Landfill Owner's List of Known Workplace Hazards

9. CHEMICALS, SOLVENTS, FUMES, VAPORS, AND/OR DUSTS - various nuisance dust	Yes (Y) No (N) or Not Applicable (NA)
a) The worksite has chemicals solvents, fumes, vapors or dusts that may affect the contractor	Y
b) Material Safety Data Sheets for controlled products at the worksite will be made available by the contractor	Y

If yes to a), list the work processes and/or chemicals in use:

Daily operation within the landfill may cause dust conditions or the construction activity may stir up dust in which case dust suppression is required.

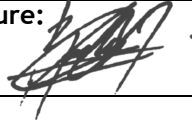
10. NOISE - Landfill active face, Residential Drop Off Area, flare station, compost facility, demolition area, construction site	Yes (Y) No (N) or Not Applicable (NA)
a) Employees will be exposed to noise levels above 85dbA due to equipment operation or public vehicle traffic passing the construction site	Y

If yes to a), the Vancouver Landfill Noise Exposure Control plan is available on request.

OTHER HAZARDS (NOT IDENTIFIED ABOVE)	Yes (Y) No (N) or Not Applicable (NA)
a) compressed cylinder gas release (residential drop off area, flare station, active face, construction site)	Y
b) eye hazards (throughout the site)	Y
c) fires/explosion (Landfill active face, composting facility, flare station, equipment, throughout the site)	Y
d) mobile equipment/vehicle traffic (throughout the site)	Y
e) needle stick/blood borne pathogens (in garbage/on wheels/tracks of equipment)	Y
f) spills (known/unknown materials)	Y
g) silica dust (background levels at active face, demolition area, and scales)	Y
h) trip/slip hazards (throughout the site, wet landfill waste becomes very slippery)	Y
i) violence (scale house, RDO, active face, compost)	N

Vancouver Landfill Owner's List of Known Workplace Hazards

j) Landfill gas created during the decomposition of municipal solid waste (flare station, active face, landfill gas piping system, demolition area, pump station, low lying areas such as trenches or ditches)	Y
k) Equipment tipping/rollover (RDO, active face, compost, demolition area, unconsolidated material)	Y
l) Hot surfaces (equipment, flare station)	Y
m) Traffic - a major landfill roadway runs adjacent to the construction site	Y
n) Crane lifts <ul style="list-style-type: none"> a. Potential risks - wind fluctuations, proximity of power lines, proximity of other flares & flare station buildings, proximity of vehicle traffic roads b. A crane lift risk assessment and plan is the responsibility of the contractor 	Y
o) Use of Cranes, Drills, Tall Obstructions <ul style="list-style-type: none"> a. Notification is required to be sent to the Boundary Bay Airport when cranes, drills or other tall obstructions exceeding 25 feet (8 meters) in height. Notification procedures will be provided to the contractor. 	Y

KNOWN WORKPLACE HAZARDS LIST COMPLETED BY	
Project Manager Name (print): Rod Zedan	
Project Manager Signature: 	Date: 02/03/2022
Title: Senior Project Manager	Phone: 604-606-2741

SCHEDULE 11 - CONTRACTOR PRE-CONTRACT HAZARD ASSESSMENT FORM

Contractors Pre-Work Hazard Identification for Transfer and Landfill Operations

CONTRACT TITLE: CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL

PROJECT MANAGER (City employee): Rod Zedan P.Eng.

CONTRACTOR REPRESENTATIVE _____

CONTRACT NAME & #: PS2020171 - CONSTRUCTION SERVICES FOR 2022 LFG & LEACHATE SYSTEM UPGRADES - VANCOUVER LANDFILL

Purpose

This document shall be completed by the contractor awarded the contract, who shall identify all the **known and potential work process hazards** associated with the contract. The contractor, who is responsible for all identified actions, shall provide a completed Contractors Pre-Work Hazard Identification (CHI) document to the Project Manager (City employee) for review and consultation before the contract work begins.

Reference Material

In order to complete this document, the contractor should reference a completed copy of the **List of Known Workplace Hazards**, initially provided with the tender package. The contractor is also responsible to reference any **Hazardous Materials Assessments**, provided by the City with the tender package, and possibly referenced in the List of Known Workplace Hazards document.

Instructions for Completion

The document must be completed in full. Choices for each entry are:

Y - Yes - this work process or worksite hazard will exist for this contract and are the responsibility of the contractor

N - No - Even though the work process or worksite hazard will exist, it will not be the responsibility of the contractor

NA - Not Applicable - the work process or worksite hazard is not applicable for this contract

TBD - a third party (environmental consultant) will address the issue (primarily for a hazardous materials assessment)

Each grouping of safety hazards or issues in this document (bold text, capitalized) may list some examples of work tasks where this hazard may be encountered. These examples are not conclusive; there may be other examples of work tasks that create this hazard or issue.

Documentation and Training Requirements

During the contract term, the contractor may be requested by the City of Vancouver, and shall provide documented evidence for items identified with a **(D)** in this document.

The summary table at the end of the document provides all potentially required documentation, and if applicable, the WCB OHS Regulation reference.

For any identified hazard marked with a **(T)**, the contractor is responsible to train their employees.

HAZARDOUS MATERIALS

The contractor is responsible for providing additional information on hazardous materials which may be encountered as part of the work process, yet not identified in the List of Known Workplace Hazards.

HAZARD OR ISSUE	Contractor Confirmation
1. ASBESTOS-CONTAINING MATERIALS - disturbance or penetrations of flooring, walls, ceiling tiles, pipe lagging, ac pipe, transite siding, particularly in older facilities; e.g., furniture/fixture installation, carpeting/flooring services, and boiler repair/tune-up services, any type of ground disturbance on or within Vancouver Landfill waste material (assume that asbestos-containing material will be present)	Yes (Y) No (N) Not Applicable (NA) or To Be Determined (TBD)
a) We have reviewed the hazardous materials assessment for asbestos provided by the City of Vancouver (or third party) in the tender package	Y N NA
b) We will provide a written hazardous materials assessment for asbestos	Y N NA
c) We have a written Asbestos Exposure Control Program (D)	Y N NA
d) As Prime Contractor, we will submit a Notice of Project Asbestos(NOP-A) to WorksafeBC at least 24 hours in advance of the project startup	Y N NA
2. LEAD-CONTAINING MATERIALS - disturbance of lead-based paint, particularly in older facilities. Also present in certain electrical circuitry and metal alloys; .e.g., overhead bridge crane maintenance/repair, high-voltage cable splicing services, boiler repair/tune-up services, fixture installation services, and chiller maintenance/repair services, any type of ground disturbance on or within Vancouver Landfill waste material (assume that demolition material may contain wood painted with lead based paint)	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the hazardous materials assessment for lead provided by the City of Vancouver (or third party) in the tender package	Y N NA
b) We will provide a written hazardous materials assessment for lead	Y N NA
c) We have a written exposure control program for Lead (D)	Y N NA
3. OTHER HAZARDOUS MATERIALS - may include PCBs, CFCs, molds, mercury, ozone depleting substances (ODS), radioactive substances, sewage and unidentified contaminated hazardous materials, other: (list other here) _____	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the hazardous materials assessment for (insert hazardous material type here) provided by the City of Vancouver, or a third party, in the tender package	Y N NA

b) We have reviewed the hazardous materials assessment for (insert hazardous material type here) provided by the City of Vancouver, or a third party, in the tender package	Y N NA
c) We will provide a hazardous materials assessment for (insert hazardous material type here)	Y N NA
d) We will provide a hazardous materials assessment for (insert hazardous material type here)	Y N NA

4. CONFINED SPACES - working in vaults, chambers, pits, tanks, etc.; e.g., construction, inspection and testing services, water/fuel storage tank clean-out services, and utility corrosion inspection services, Vancouver Landfill flares.	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the confined space hazard assessment provided by the City of Vancouver in the tender package	Y N NA
b) We have a written confined space entry program (D)	Y N NA
c) Our employees have received confined space training (T)	Y N NA
d) We shall complete a confined space hazard assessment specific to the work to be performed (D)	Y N NA
e) We shall develop site specific written safe operating procedures (including evacuation and rescue components) prior to starting work (D)	Y N NA
f) We shall identify and record isolation points (D)	Y N NA
g) We will develop alternate procedures (as per WCB OHS Regulation # 9.22) to be used to isolate adjacent piping containing harmful substances (D)	Y N NA
h) We will provide for the services of rescue persons	Y N NA

If yes to g), provide brief description:

5. LOCK OUT - industrial equipment maintenance, power machinery repair services, pump maintenance/repair services, mechanical refrigeration systems, elevator repair, overhead bridge crane maintenance/repair services, cathodic protection services, hydraulic test systems repair/service, and air compressor rebuilding services.	Yes (Y) No (N) or Not Applicable (NA)
a) We will be required to lock out in order to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic)	Y N NA
b) We will perform work on, or near, energized equipment, lines or circuits	Y N NA

Note: If yes to a) or b) above, no work may be performed until reviewed by City of Vancouver project manager or project manager designate.

If yes to a) or b) describe:

6A. FALL PROTECTION - tree pruning, window and ledge cleaning, window replacement, overhead bridge crane maintenance/repair services, roll-up door replacement, tent installation, awning/canopy installation, overhead air exchange installation, construction inspection and testing services, building roof works including HVAC servicing, Vancouver Landfill flare or piping work.	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	Y N NA
b) We will produce a written Fall Protection Plan for work that will occur more than 25 feet above grade, or, if written procedures (control zone) are to be used as the means of fall protection (D)	Y N NA
c) Our employees who will be required to use fall protection have received training (T)	Y N NA

If yes to a), describe:

6B. SCAFFOLDING AND LADDERS - window replacement or cleaning, tree pruning, roll-up door replacement, tent installation, awning/canopy installation, building repair, Vancouver Landfill flare or piping work.	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will use scaffolding or ladders for access to the work	Y N NA
b) The scaffolding or ladders will be exposed to wet and/or slippery conditions	Y N NA
c) We will ensure scaffolding or ladders are secured before accessing the worksite	Y N NA
d) Scaffolding will be erected and dismantled only by qualified workers	Y N NA

7. OVERHEAD POWER LINES AND UNDERGROUND UTILITIES - tree pruning services, tree removal, utility relocation or replacement, underground utility identification services, concrete sawing services, pole painting, leachate piping, landfill gas piping.	Yes (Y) No (N) or Not Applicable (NA)
a) There are electrical hazards associated with overhead power lines such as limits of approach and contact	Y N NA
b) We will obtain necessary assurances, in writing (WorkSafe BC Form 30M33) through the utility company, for any work where minimum limits of approach cannot be maintained	Y N NA
c) Underground or hidden utilities may be on the job site and we shall contact the Project Manager and BC OneCall at least four business days prior to the start of any excavation work	Y N NA

d) In the event of an inadvertent utility strike, we will have a written procedure for immediate notification of both the utility company and WorkSafeBC (D)	Y N NA
8. CONSTRUCTION, EXCAVATION, SHORING AND DEMOLITION	Yes (Y) No (N) or Not Applicable (NA)
a) As Prime Contractor, we will submit a Notice of Project (NOP) to WorksafeBC at least 24 hours in advance of the project startup date	Y N NA
b) Workers may be required to enter an excavation over 1.2m (4 ft) in depth	Y N NA
c) We will develop site specific written safe operating procedures, including evacuation and rescue components, prior to starting any excavation work (D)	Y N NA
d) Shoring will be installed in accordance with Part 20 of the WorkSafeBC OH&S Regulation	Y N NA
e) We will provide safe means of entry and exit for excavations	Y N NA
f) We will provide for the services of rescue persons and equipment (excavation rescue)	Y N NA
g) We will develop a demolition/salvage plan (D)	Y N NA
h) We will evaluate the demolition materials for reuse or recycling	Y N NA
i) We will protect passers-by from potential hazards	Y N NA

9. CHEMICALS, SOLVENTS, FUMES, VAPORS, AND DUSTS - cleaning solvents, adhesives, paints, coatings, binders; e.g., storage tank clean-out services, countertop installation (epoxies), and flooring	Yes (Y) No (N) or Not Applicable (NA)
a) We will complete a hazard assessment for chemicals we will use in our work, and if chemicals already exist at the workplace, our assessment will identify possible results of any reactions between our chemicals and those of the City's operations	Y N NA

10. NOISE AND VIBRATION - includes installations and heavy equipment operation. Noise examples for 85 - 90 dbA (at noise source) include forklift, smoke alarm, table saw. Whole body vibration examples include truck or equipment operator and jackhammer operation	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will be exposed to noise levels above 85dbA	Y N NA
b) We have a written hearing conservation program (D)	Y N NA
c) Our employees will be exposed to excessive levels of whole body vibration (WBV)	Y N NA

11. OCCUPATIONAL HEALTH AND SAFETY PROGRAM	Yes (Y) No (N) or Not Applicable (NA)
a) We have a written Safety Program (D)	Y N NA
b) We will make regular inspections of all workplaces	Y N NA
c) We will immediately investigate any reported unsafe conditions and correct as required	Y N NA
d) We will investigate all incidents and provide written incident reports to the Project Manager	Y N NA
e) We will develop a written plan (D) identifying how risk to the public and workers will be minimized (may include the use of barriers and safe entry/exit points from the worksite)	Y N NA

12. FIRST AID	Yes (Y) No (N) or Not Applicable (NA)
a) First aid equipment, supplies, facilities and services will be readily accessible during working hours	Y N NA
b) We will complete a first aid assessment (D)	Y N NA
c) We will post site drawings and signs indicating the location of, and how to summon, first aid	Y N NA
d) We will develop an effective means of communication between the first aid attendant and the work areas	Y N NA

13. FIRE PROTECTION - solvents, fuels, soldering, torch cutting, or heating devices; e.g., gasoline and diesel fuel delivery services, flooring services, fire suppression service, and water pipe repair services	Yes (Y) No (N) or Not Applicable (NA)
a) We will weld, solder, or cut with a torch	Y N NA
b) We will use or store flammable/combustible liquids	Y N NA
c) We will use temporary heating devices	Y N NA
d) We will provide water and/or fire extinguishers on the job site	Y N NA

14. PERSONAL PROTECTIVE EQUIPMENT (PPE)	Yes (Y) No (N) or Not Applicable (NA)
a) We will ensure our workers have appropriate personal protective clothing and equipment (e.g., safety footwear, hi-vis vests, hardhats, eye protection, face protection, hearing protection, chemical gloves/clothing)	Y N NA
b) We have a written PPE program (D)	Y N NA

15. RESPIRATORY PROTECTION	Yes (Y) No (N) or Not Applicable (NA)
a) The work will involve materials or processes requiring respiratory protection	Y N NA
b) We have a written respiratory protection program (D)	Y N NA
c) c) Our employees who will be required to use respirators have received training (T)	Y N NA

16. TOOLS MACHINERY AND EQUIPMENT	Yes (Y) No (N) or Not Applicable (NA)
a) We will use powder-actuated tools.	Y N NA
b) Our employees who operate equipment have been trained and are qualified in use of that equipment. (T)	Y N NA

If yes to a), describe:

17. CRANES, FORKLIFTS, AND MANLIFTS - heavy or oversized goods delivery, tree pruning, overhead bridge crane maintenance/repair, and roll-up door replacement.	Yes (Y) No (N) or Not Applicable (NA)
a) We will use a crane, forklift, manlift or other lifting equipment	Y N NA
b) Our lifting and rigging equipment is certified where applicable, and inspected on a regular basis	Y N NA
c) Our operators shall have a valid operators certificate (mobile crane or tower crane) or have received training (boom lift, scissor lift or forklift) (T)	Y N NA

d) Only lifting attachments approved for use by the forklift manufacturer will be used	Y N NA
e) We have a written crane use program. (D)	Y N NA
f) We have given onsite project crews written instruction about notifying the Boundary Bay Airport when cranes are used. (D)	Y N NA

18. RIGGING	Yes (Y) No (N) or Not Applicable (NA)
a) We will lift or sling loads overhead	Y N NA
b) We will inspect ropes, hooks and slings before use on each shift	Y N NA

19. MOTOR VEHICLES AND HEAVY EQUIPMENT - goods delivery, personnel transportation services, trailer relocation services, oil/water pumpout and recycling services, asphalt grinding and asphalt sealing services, weed/brush abatement and mowing services, landscape hydroseed services, tree stump grinding, and concrete sawing and removal	Yes (Y) No (N) or Not Applicable (NA)
a) We will use motor vehicles or heavy equipment at the work location	Y N NA
b) All operators have a valid provincial driver's license	Y N NA
c) We will inspect vehicles, including safety features (e.g., ROPS)	Y N NA

20. TRAFFIC CONTROL	Yes (Y) No (N) or Not Applicable (NA)
a) There will be uncontrolled movement of vehicular traffic at the worksite	Y N NA
b) We will develop a written traffic control plan (D)	Y N NA
c) We will put in place any required traffic control devices	Y N NA
d) The traffic control devices conform to the Ministry of Transportation and Infrastructure (MoTI) <i>"Traffic Control Manual for Work on Roadways"</i>	Y N NA
e) We will provide Traffic Control Persons (TCP's) as required by law	Y N NA

21. CRYSTALLINE SILICA DUST	Yes (Y) No (N) or Not Applicable (NA)
a) Our work will involve jackhammering, rotohammering, drilling, grinding or other disturbance of concrete or stone, creating potential exposure to silica dust	Y N NA
b) We have a written silica exposure control plan. (D)	Y N NA

22. Additional Concerns	Yes (Y) No (N) or Not Applicable (NA)
We foresee additional health and safety concerns associated with the work	Y N NA

If yes, describe:

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

Describe the control measures each of the concerns listed above:

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

<p>SUMMARY OF DOCUMENTATION (D) TO BE PROVIDED BY THE CONTRACTOR upon request by the City of Vancouver</p> <p>(documentation required as per Workers Compensation Board Occupational Health and Safety (WCB OHS) Regulation, the Workers' Compensation Act (WCA) or the City of Vancouver)</p>	<p>Yes (Y) or Not Applicable (NA)</p>
a) Safety Program (WCB OHS Regulation Parts 3.1-3.3)	
b) Asbestos Exposure Control Plan (WCB OHS Regulation Part 6.3)	
c) Lead (Pb) Exposure Control Plan (WCB OHS Regulation Part 6.60)	
d) Respiratory Protection Program (WCB OHS Regulation Part 8.5)	
e) Confined Space Entry Program (WCB OHS Regulation Parts 9.5 and 9.6)	
f) Plan for minimizing risk to public and to workers (City of Vancouver)	
g) Personal Protective Equipment (PPE) Program (WCB OHS Regulation Part 8.5)	
h) Hearing Conservation Program (WCB OHS Regulation Part 7.5)	
i) Confined Space Hazard Assessment (WCB OHS Regulation Part 9.9)	
j) Work Procedure, including evacuation and rescue, for confined space (WCB OHS Regulation Part 9.10 and 9.11)	
k) Identification of Isolation Points (confined space) (WCB OHS Regulation Part 9.19)	
l) Alternate procedures to isolate adjacent piping (confined space) (WCB OHS Regulation Part 9.22)	
m) Fall Protection Plan (WCB OHS Regulation Part 11.3)	
n) Traffic Control Plan (Ministry of Transportation and Infrastructure (MOTI) manual, as referenced in WCB OHS Regulation Part 18.3)	
o) In the event of a utility strike, a written procedure for notification of Utility Provider (WCB OHS Regulation Part 4.18) and WorksafeBC (Workers' Compensation Act Part 3, Division 10, Sec. 172 (1)(c))	
p) Work Procedure (including evacuation and rescue) for excavations (City of Vancouver)	
q) Demolition/Salvage Plan (City of Vancouver in reference to WCB OHS Regulation Part 20.112)	
r) First Aid Assessment (WCB OHS Regulation Part 3.16 (2))	

SUMMARY OF TRAINING REQUIREMENTS (T) OF CONTRACTOR EMPLOYEES (for any persons completing this type of work throughout the duration of the contract)	Yes (Y) or Not Applicable (NA)
a) Confined Space Entry (WCB OHS Regulation Part 9.8)	
b) Fall Protection (WCB OHS Regulation Part 11.2 (6))	
c) Equipment Operation (WCB OHS Regulation Part 4.3 (1) (b)(i) (ii))	
d) Mobile Equipment (ex. boom lift, scissor lift, forklift) (WCB OHS Regulation Part 16.4)	

PRE CONTRACT HAZARD ASSESSMENT COMPLETED BY	
Contractor's Representative Name (print):	
Contractor's Representative Signature:	Date:
Title:	Phone:

CONTRACTOR'S DESIGNATE RESPONSIBLE FOR ONSITE SAFETY	
Name (print):	
Title:	Phone:

SCHEDULE 12
VANCOUVER LANDFILL SITE SAFETY ORIENTATION/AGREEMENT

Standard Operating Procedure

Title:	#3 Site Safety Orientation and Agreement
Branch:	Transfer & Landfill Operations
Site:	Vancouver Landfill
VanDoc:	ENG – TLO - VL Active SOP's - #3 Site Safety Orientation and Agreement

REVISION HISTORY				
Rev. No.	DCR#	Description	Date Created/Revised	Created/Revised by
1		Complete revision	Revised Nov 2017	R. Weiss (OHS Supt), Tech Team
2		Added CoV Alcohol, Controlled Drugs & Medication Policy information	Revised 26 July 18	R. Weiss (OHS Supt.)
3		Addition of steamer information	Revised 8 Aug 18	R. Weiss (OHS Supt.)
4		Addition of vehicle backing and LFG pressurization info	Revised 24 Aug 18	R. Weiss (OHS Supt.)
5		Addition of PPE Map and FR clothing requirements	Revised 24 Jan 20	A. Thomas (OHS Supt)
6		Addition of COVID-19 protocols	Revised 1 Apr 20	A. Thomas (OHS Supt)
7		Updated COVID-19 protocols & Daily health screening page 3 added, WorkSafeBC compliance section	April 2021	L. Wydra (OHS Supt)
8		Removed COVID-19 protocols added COVID-19 recommendations	July 2021	L. Wydra (OHS Supt)
9		Amended COVID-19 recommendations to protocols	January 20, 2022	L. Wydra (OHS Supt)

COVID-19 Protocol:

- Masks are mandatory indoors. Only exceptions are when you are alone in the area or when you are eating, ensure you keep a minimum of 6ft. / 3m distance.
- Masks are mandatory when there is more than one person in a vehicle.
- Masks are mandatory outdoors when you cannot keep 6ft./ 2m physical distance.
- If you feel sick, stay home and call 811.

The City of Vancouver, Transfer & Landfill Operations Branch requires that all persons working on the Vancouver Landfill (VL) site receive the following orientation before any work begins, and at regular intervals in future. The orientation identifies the hazards that may be encountered, and requirements which are in place for your safety. All individuals shall understand and agree to comply with this document to have access to work on this site.

This orientation shall be delivered by Transfer and Landfill Operations or Equipment Services staff. Please note that you will receive this orientation at least every six (6) months or if it has been more than six (6) weeks since your last visit to the Vancouver Landfill site.

CONTRACTORS / VENDORS / CITY OF VANCOUVER BRANCHES

Contractors, vendors or employees from other City of Vancouver branches must receive the following orientation before commencing business on the Landfill site. Each contractor, vendor or City of Vancouver employee (or team of employees) will be assigned a Landfill Site Contact as a point of contact for any questions or reporting of hazards, concerns or incidents. It is the responsibility of the contractor, vendor or City of Vancouver employee to communicate with their Site Contact in advance of their visit or at a minimum as soon as they arrive on site.

The name of your Landfill Site Contact person is: _____
Cell number: _____

SITE CONTACT – CHECK WHICH SECTIONS THE READER MUST COMPLETE

- ☐ Part One - General Safety – Pages 2 to 14, sign page 17
- ☐ Part Two - Equipment Services (EQS) Landfill Garage – Pages 15 to 16, sign page 17 (required only by those who will be entering the EQS Landfill Garage).

PART ONE - GENERAL SAFETY

I. SITE PLAN

Site Address 5400 72nd Street, Delta, BC

Contact Numbers Landfill Office 604.606.2700
First Aid Cell Phone 604.603.1655





SEE APPENDIX "A" FOR ROAD NUMBERING MAP

II. LANDFILL SITE HAZARDS

The hazards that may be encountered at the Landfill are listed in alphabetical order by area below.

√ General Site Hazards – Apply to all workers.			
<ul style="list-style-type: none"> • Animal or insect stings • Confined spaces (as marked) • Electrical hazards • Eye hazards (ie. Dust) • Fall protection (working at height of ≥10 ft.) • Fires/explosions • Landfill gas 		<ul style="list-style-type: none"> • Mobile equipment and vehicle traffic • Poor housekeeping • Power outage • Slips, trips, and falls • Spills • Weather (affects equip/vehicle operation, walking surfaces, etc.) 	
□ Zero Waste Centre (ZWC)		□ Disposal Area Active Face	
<ul style="list-style-type: none"> • Asbestos • Bed Bugs • Compressed gas cylinders • Cuts (blades, sharp objects, puncture) • Dust, including silica • Equipment tipping/rollover • Flying objects 	<ul style="list-style-type: none"> • Heat/cold stress for worker • Lifting hazards • Mobile equipment and vehicle traffic • Needle sticks • Noise • Toxic gases • Violence 	<ul style="list-style-type: none"> • Asbestos • Bioaerosols (mould, bacteria, wastewater) • Bio-hazardous materials • Compressed gas cylinders • Cuts (blades, sharp objects, puncture) • Dust, including silica • Equipment tipping/rollover 	<ul style="list-style-type: none"> • Flying objects • Heat/cold stress for worker • Landfill gas • Mobile equipment and vehicle traffic • Needle sticks • Noise • Toxic gases • Uneven terrain

Standard Operating Procedure

☐ Compost Facility	☐ Scalehouse/Kiosks	☐ Leachate Pump Station
<ul style="list-style-type: none"> Bioaerosols (mould, bacteria) Dust, including silica Equipment tipping/rollover Flying Objects Heat/cold stress for worker Mobile equipment and vehicle traffic Needle sticks Noise Uneven terrain Violence 	<ul style="list-style-type: none"> Blood borne pathogens (money handling) Congestion & obstructions Dust, including silica Long stationary posture Vehicle traffic Noise Violence 	<ul style="list-style-type: none"> Confined spaces Electrical (lockout) Landfill gas Leachate
☐ Flare Station	☐ Other Areas	
<ul style="list-style-type: none"> Above-ground pressurized pipelines Compressed gas cylinders Confined spaces (marked) Congestion & obstructions Electrical (lockout) Flame flashback during flare start-up Heat/cold stress for worker Hot surfaces Landfill gas Lifting hazards Vehicle traffic Noise Overhead hazard Toxic gases Working alone or in isolation 	<p>Site Contact To List & Discuss (i.e. Gas Field, C&D Recovery Project, Closed Areas, Landfill Services Maintenance Yard, Soil Stockpile, Burns Bog)</p> <ul style="list-style-type: none"> _____ _____ _____ _____ _____ _____ _____ 	

Various controls have been implemented to minimize the risk of all the listed hazards. If you have any questions or concerns about hazards or require further information, please discuss with your Site Contact.

NOTE: If you notice a hazard or unsafe condition, **please correct it immediately**. If you are unable to correct the hazard or unsafe condition yourself, report it immediately to your Site Contact.

III. SAFETY RULES

SIGN IN AND OUT

- All contractors/vendors/City of Vancouver employees must sign in and out upon arriving or leaving the Landfill.
- During the COVID-19 health crisis, all sign in and out will be done verbally with Landfill staff on the 2nd floor of the Landfill Administration Building or by phone call to 604.606.2700 during regular office hours. If there is no one there to check you in or out, please call your Site Contact.
- If your Site Contact has an office in the Technical Trailer, please first sign in at the Administration Building, then inform your Site Contact of your arrival and they will direct you from there.
- Please note sign in/sign out location on the map below in red.

Landfill Administration Building Office
Location: 2nd Floor with entrance on East Side of Administration Building.

Tel: **604.606.2700**
Hours: Mon to Fri, 7:00am – 3:30pm.



- **After hours sign in/out:** The Administration Office closes by 3:30 pm. The main gate closes at 6:00 pm.
- If you will be on site after the offices or the gate closes, inform your Site Contact and indicate to them what your expected time out will be.
- Sign out in person or by phone according to your Sign out Time as listed in the table:

Sign In Location	Sign Out In Person	Sign Out By Phone
Did you sign in at the Administration Building?	Then sign out in person at the Administration Building before 3:30 pm	Or sign out by phoning 604.606.2700
Still at the Vancouver Landfill between 4:00 pm and 6:00 pm?	Sign out at the Weighscales	Or sign out by phoning 604.506.3159 (Sub Foreman)
On site after 6:00 pm?		Phone 604.506.3159 (Sub Foreman)

VEHICLE ACCESS TO & OPERATION WITHIN THE LANDFILL



- Rules for vehicles entering the Vancouver Landfill
 - Vehicles authorized to by-pass the scales
 - Some vendors and City of Vancouver vehicles have been authorized to by-pass the scales and therefore are permitted to by-pass the vehicle line up on 72nd street. ONLY VEHICLES WITH AUTHORIZATION MAY BY-PASS.
 - Vehicles not authorized to by-pass
 - When entering the site from along Burns Drive and 72nd street, vehicles may not pass the inbound line-up during operating hours, **unless traffic control persons are actively managing traffic and the traffic control person gives you a clear direction to by-pass**. If no traffic control persons are present, then un-authorized vehicles must wait in line.
- If a traffic control person is present, vehicles may signal to traffic control persons that they would like to bypass by putting on their 4-way flashers. Do not proceed until the traffic control person notes your flashers and gives you clear instruction to bypass.
- All drivers/operators must observe traffic control measures (i.e., stop signs, no stopping road markings, speed signs, warning signs and cones).
- Vancouver Landfill Speed Limit:
 - Drive within the **15 km/h speed limit** in the area of the scalehouse and administration/shop buildings and **5 km/h speed limit** within the Zero Waste Centre/Residential Drop Off.
 - Drive within the **30 km/h speed limit** within all other areas of the Landfill.
- Seatbelts must be worn at all times while vehicles are in motion, no exception.
- **MANDATORY VEHICLE BACKUP RULE** – Before backing any type vehicle, the vehicle operator must check the rear of the vehicle to ensure no persons or obstructions will be hit by the backing vehicle. Vehicle operators will **HONK THE HORN TWICE** before backing the vehicle.
- To prevent exhaust fumes from entering the scalehouse, all vehicles must turn off their engines when sitting at the weighmaster window on the scales.

DISTRACTED DRIVING

- The use of cellular phones while operating vehicles or equipment is prohibited by City policy and the BC Motor Vehicle Act unless in a Province-approved hands-free mode. Always move to a safe place out of the way of any equipment or vehicles prior to using a cellular phone or engaging in any other non-mobile activity.
- The use of listening devices with headphones (such as music players) is prohibited while on site by City policy.
- The Vancouver Landfill has many persons on the ground and vehicles moving in close proximity to each other. A distracted driver is considered a **HIGH RISK** to both vehicles and persons on the ground. **Distracted drivers will be asked to leave the site and will not be permitted access without written permission from the Landfill Manager or designate.**

SMOKING

- Smoking is only permitted in the designated smoking location on the south west corner of the Administration building parking lot. Smokers will find a covered area at this location.
- Smoking is **not permitted** at any other location within the Landfill.



CITY OF VANCOUVER ALCOHOL, CONTROLLED DRUGS & MEDICATIONS POLICY

- The City of Vancouver Alcohol, Controlled Drug and Medications Policy applies to all City employees, volunteers and contractors performing work on behalf of the City.
- The City of Vancouver (the "City"), and those who perform services on its behalf, have a shared responsibility to maintain a safe and healthy work environment. The use of Alcohol, Controlled Drugs and Medications can have a serious adverse effect on the health, safety and productivity of City employees, on contract employees, on the work environment and the public.
- Policy Rules:
 - To not cultivate, manufacture, distribute, offer or sell Controlled Drugs while at work or on break, or while operating a vehicle.

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- To not possess a Controlled Drug while at work or on a break, while attending at City premises, or while operating a vehicle, unless the Controlled Drug is legally in the possession of the employee, volunteer, or contractor; and the Controlled Drug is contained in its original, sealed and unopened packaging.
- To not possess open Alcohol while at work or on break, while attending at City premises, or while operating a vehicle.
- To not distribute, offer or sell Medication for which a prescription is required while at work or on break, while attending at City premises, or while operating a vehicle.
- To abstain from use of Alcohol, Medication or Controlled Drugs prior to commencing work in a manner that could render them unfit to perform their duties safely and efficiently.
- To abstain from use of Alcohol and Controlled Drugs while at work or on break, while attending at City premises, or while operating a vehicle.
- To act responsibly with regard to the use of Medication, whether over the-counter or prescribed by a physician, to prevent adverse effects on work performance.

SCAVENGING

- Scavenging is prohibited anywhere in the Landfill. Scavenging is the search for and collection of anything from discarded waste.

CONED OFF, SIGNED AREAS, ASBESTOS DEPOSITS

- Be aware of and stay clear of coned-off areas; these are closed to protect you from hazards.
- Be aware that asbestos is routinely managed at the Landfill. Asbestos is required to be double bagged and poses no harm if the bags are not disturbed. Asbestos is disposed of within areas posted with asbestos signs or wording.

WORKSAFEBC COMPLIANCE

- Comply with WorkSafeBC regulations and all other applicable regulation while on site. Special attention and work planning is required when performing high risk activities for example entering any confined space, depression, or potentially poorly ventilated areas.

IV. FIRST AID ATTENDANT – CALL **604.603.1655** (PLEASE WRITE THIS NUMBER DOWN)

- All injuries, even minor injuries, are to be reported to the first aid attendant and your Site Contact. The first aid room is located at the southeast corner of the Landfill Administration building. (Location noted on the following page picture)
- Notify the designated First Aid Attendant at **604.603.1655** (VL First Aid Cell Phone). If no answer, contact the Landfill Office at **604.606.2700** to alert the First Aid Attendant.

EMERGENCY REQUIRING AN AMBULANCE

- For injuries requiring an ambulance call 911 immediately, then inform the Landfill First Aid Attendant and your Site Contact (dial “9” first from land lines). Your Site Contact will arrange to have the ambulance met at the gate and directed to the injury location.

V. IN THE EVENT OF AN EMERGENCY

- Report any fires, spills, accidents or other emergencies to the Landfill Office immediately. In the event of an emergency that requires outside response, call 911 immediately and then inform the Landfill Office at **604.606.2700** and your Site Contact.
- The Landfill Manager or designate is responsible for contacting additional authorities as required.
- For detailed information, refer to the Vancouver Landfill Emergency Response Plan.

SAFETY DURING AN EMERGENCY

- In an emergency, your first priority is to warn others and evacuate the immediate area. Do not put yourself in danger.
- If not directly and helpfully involved, report to the **Emergency Muster Station** in the north end of the employee parking lot near the entrance to the Administration Building.



- Do not return to the site until instructed that it is safe.
- During an emergency muster, you must be present for a head count. Do not leave the Vancouver Landfill until you are directed to do so.
- If the emergency involves chemical products or materials, Material Safety Data Sheets for materials used on site are located in Superintendent's office and are available online at the Vancouver Citywire website. Ask your Site Contact to assist with accessing MSDS information.
- Materials brought onto site by contractors/other City branch workers require MSDS sheets.

VI. HEALTH AND SAFETY CONCERNS

- If you have any health or safety concerns, please discuss them with your Site Contact.

VII. INCIDENT REPORTING

- **Incident Definition:** An accident or other occurrence, which resulted in, or had the potential for causing an injury or occupational disease. Incidents may include near misses, minor injuries, medical aid treatments, doctor visits, and/or injuries resulting in lost time accidents (*e.g. structural and equipment failures*).
- **Near-Miss Definition:** Incident without injuries but with potential to cause a serious injury; an event which had strong potential to be an injury that required medical aid, time loss or fatality, however did not result in an injury to an employee. A near miss can be loosely defined as a “close call” or a “near hit”. Near misses may include property/equipment damage.
- ❖ The above incidents must be reported to your Site Contact immediately without delay. All injuries shall be managed in accordance with VL Injury/Illness and First Aid procedures. If you are unable to get in touch with your Site Contact, report the incident to the Landfill Office at **604.606.2700**.

VIII. PERSONAL PROTECTIVE EQUIPMENT (PPE)

All PPE must meet WorkSafeBC requirements for workers accessing the Landfill. PPE is required in all locations outside the Main Parking Lot or the Technical Trailer Office parking lot (as outlined in yellow below).



1) The following are necessary on the site:

- Yellow dual contrast Hi-visibility reflective vest or coveralls as per City of Vancouver requirements. The requirement for hi-visibility vests is inclusive of the walkways from the Administration building to the Scalehouse.

Standard Operating Procedure

- Safety protective footwear (heavy-duty, above the ankle, construction-type safety boots with an external triangular green CSA patch). Boots should also be approved as shock-resistant when working on electrical systems (display an external white Ω CSA patch).
- Approved safety eyewear.

2) Also necessary where appropriate:

- Hard hat.
- Fall protection in situations where a fall of 3 metres (10 feet) or more could occur, or from a lesser height but which represents a higher risk of injury.
- Flame Resistant Clothing and a personal gas monitor when performing work on or directly adjacent to the gas collection system or within the confines of the Flare Station.
- Hearing protection at the Landfill Active Face, Residential Drop-Off Area, Demolition Area, Compost Facility, Flare Station or any area requiring hearing protection.
- Respirator with appropriate filtering cartridges or paper particulate mask as directed by the Site Contact or where mandatory signs are located.
- Other specific equipment where determined necessary or by regulation for the particular situation or as directed by the Site Contact.

IX. HEAVY EQUIPMENT

There are many varieties of heavy equipment used at the Landfill. Due to their size and operating speed, heavy equipment operators have restricted visibility for person standing or walking on the ground. **FOR YOUR SAFETY, ALWAYS GIVE HEAVY EQUIPMENT A WIDE SAFETY ZONE.**

- Do not walk in the active tipping area of the Landfill.
- Do not move into the vicinity of any vehicle or mobile equipment until you have made eye contact with the operator/driver and ensured that he/she is aware of your presence.
- Remember that people are more mobile than equipment – it is your responsibility to stay out of the way. Do not, at any time, walk behind any vehicle or piece of heavy equipment.
- Remain outside of the swing radius of excavators, approximately 15 metres (50 feet), unless absolutely necessary. If entry is required within that radius, make eye contact and communicate with the operator so they are aware of your location.
- In the demolition dumping area, maintain a safe distance between trucks (one truck and trailer length or 75 feet/23 metres). End dump style demolition trucks pose an extreme hazard of tipping over on their side when the box is lifted.
- All heavy equipment must be turned off before fuelling.

X. LANDFILL GAS HAZARDS

Landfill gas is produced by underground waste deposits and exists within the Landfill and in gas collection system piping and equipment. Gases can collect in confined spaces, depressions, and poorly ventilated areas.

- Never enter a signed/marked confined space without prior approval from your Site Contact. All manholes within the Landfill are classified as confined spaces due to potential presence of landfill gases.
- Do not access the fenced enclosure at the Flare Station or conduct any work around the landfill gas system without prior approval from your Site Contact.
- Do not alter any component of the landfill gas collection system without prior authority from the Landfill Manager or designate.
- Use extreme caution when operating vehicles or equipment or when walking near landfill gas collection systems. The system is under 100 PSI and can cause significant damage or injury if released.
- If possible, stand upwind of wells or any other landfill gas works. If an accidental or uncontrolled release of landfill gas is believed to have occurred near your work area, attempt to remove yourself from the area by taking a path that is crosswind from the source and attempt to get upwind if it is determined to be safe to do so. Immediately notify the Landfill Manager or your Site Contact.
- If a hydrogen sulphide (rotten eggs) odour is detected remove yourself from the area and notify the Landfill Manager or Site Contact.
- More information about Landfill Gas is available upon request from your Site Contact.

XI. LANDFILL FIRES

Decomposition of the wood waste will create chemical reactions which form gases and heat. If air is introduced into the mix, a spontaneous combustion fire can occur. Fires within landfills are not uncommon and are managed by landfill staff following the established procedures and practices of gas and heat monitoring and the fire response plan.

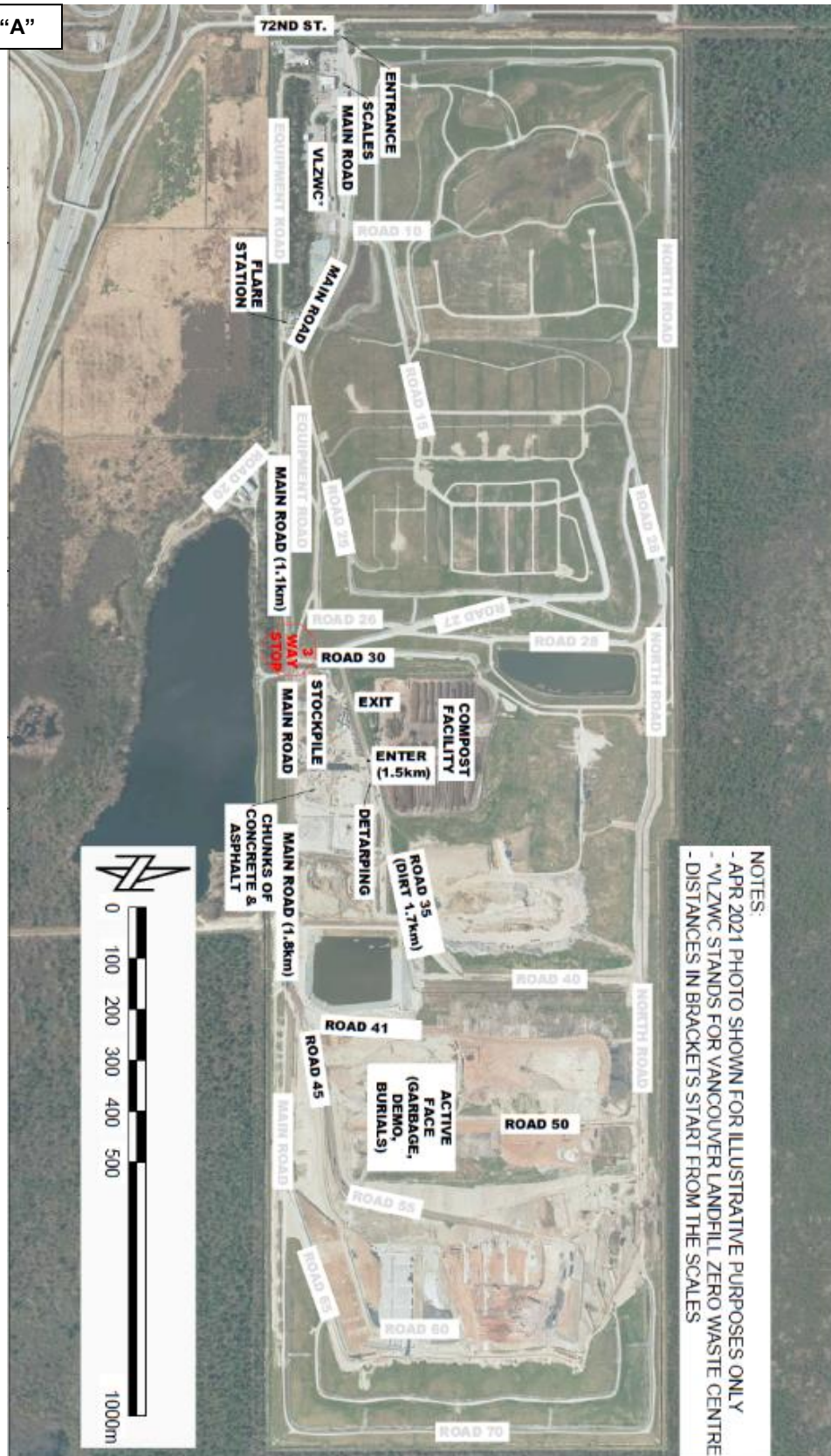
STEAMERS - A steamer is a plume of hot gas that seeps out of the surface where solid waste is landfilled. The following picture shows steamers rising from the landfill surface. If you observe this type of steam rising from the surface, immediately inform a Landfill employee or your Site Contact.

Do not approach the steam. The steam may be the result of a sub-surface fire which has the potential to produce toxic gases harmful to humans.

**XII. WORKING ALONE**

- Determine with your Site Contact whether your work is considered working alone. Each time you access the Vancouver Landfill and when you will be working alone, you must tell your Site Contact where you will be located while working alone.
- Persons working alone must receive adequate training from their employer or home branch before being permitted to work alone at the Vancouver Landfill. You must follow your employers working alone procedures, including any check in's required by that procedure.
- Persons working alone must sign in and out at the Landfill Administration office and advise reception staff they will be working alone.

Appendix "A"



PART TWO – EQUIPMENT SERVICES (EQS) LANDFILL GARAGE

SAFETY ORIENTATION

This section is to be used in conjunction with the Site Safety Orientation and Agreement that is in place at the Vancouver Landfill (VL). This applies to all persons working at the Landfill and includes contractors hired by Equipment Services (EQS) to perform work on site. Each person must receive the complete VL orientation prior to work commencing, paying special attention to the sections that are most pertinent to the work they will be performing. All applicable WSBC rules are in effect while working in or around the garage as well as all other areas operated by Transfer and Landfill Operations.

I. GENERAL SAFETY ISSUES:

The garage has hazards that are common to most vehicle / equipment repair facilities and they include, but are not limited to:

- Open vehicle repair pits
- Overhead hazards associated with the use of a bridge crane
- Hazards associated with the use of compressed air
- Hazards associated with the use of compressed gases (oxygen / acetylene)
- Various oils, solvents and other chemicals
- Slip and trip hazards
- Congested work areas
- Hazards associated with the movement of large industrial machines and their parts
- Exposure to contaminants that are found at the Landfill

II. PERSONAL PROTECTIVE EQUIPMENT (PPE)

All PPE must meet WSBC and City of Vancouver requirements and must be used in accordance with the manufacturer's instructions. The required PPE necessary for working in the Equipment Services Garage is as follows:

- Dual contrast High visibility coveralls or vest
- Safety footwear (above the ankle CSA green triangle and Ω symbol)
- Approved safety eyewear
- Hearing protection as required in the garage and outside as per the Vancouver Landfill requirements

Also necessary where appropriate:

- Respirator
- Hard hat
- Bump cap
- Dust mask
- Gloves (choose protection relative to the hazard)

III. WORKING ALONE AT THE EQS SHOP

EQS staff will be signing on to "SafetyLine Mobile Worker Monitoring System" through the Equipment Services procedure. Contractors will be required to stay with EQS / TLO staff OR log into the existing SafetyLine system in place with the Vancouver Landfill.

IV. IN THE EVENT OF AN EMERGENCY AT THE EQS SHOP

Respond as per the TLO orientation and be sure that any contractors on site are accounted for and kept under the care of EQS or TLO staff until authorized to be released.

V. FIRST AID AT THE EQS SHOP

The TLO procedures for receiving first aid are to be followed. All injuries are to be reported to the first aid attendant and the worker's immediate supervisor.



SAFETY ORIENTATION AGREEMENT for CONTRACTORS and VENDORS
LEGAL TERMS AND CONDITIONS

- You agree that entry to and use of the Site is at your own risk and that neither the City of Vancouver, nor its employees or agents will be liable for any loss or injury to person or property whether or not caused by negligence.
- You agree to comply at all times with the above requirements and to follow the instructions of the Landfill Manager, or designate, and/or the First Aid Attendant at all times.
- You agree to reimburse the City of Vancouver for any and all costs, losses and damage which may be caused by your failure to carry out safe working practices while on the site or to otherwise comply with this Site Safety Orientation/Agreement.
- The terms of this Site Safety Orientation/Agreement are additional to, and not in replacement of any other agreement between you and the City of Vancouver. However, in the event of any inconsistency between the two, this agreement prevails.

NOTE: Complete this sign off if you are not a City of Vancouver employee

STATEMENT OF RESPONSIBILITY

Name _____

Company &
Nature of Work _____

Cell Phone _____

I certify that I have read, understood and agree to comply with and be bound by this Site Safety Orientation/Agreement.

Signature

Date

CITY OF VANCOUVER EMPLOYEES

*** Enter name if you are a City of Vancouver employee (no signature is required)

The following City of Vancouver employee has been provided the Site Safety Orientation.

Name of CoV Employee (Please print)

Branch

Office use only - Orientation Provided By

Name & Title

Company/Branch/Date

DISTRIBUTION: Detach page 17 and give to the Office Support Clerk for data entry.
Pages 1 to 16 may be given to the person receiving the orientation for their use.

SCHEDULE 13
LANDFILL GAS SAFE WORK CONTROL PROCEDURES

City of Vancouver

Landfill Gas Safe Work Procedure - Overview

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Glossary of Terms

Condensate Drainage System – Infrastructure that allows water that condenses from the saturated landfill gas to drain from the header pipe to prevent blocking the flow of gas

Condensate Trap (CT) – Infrastructure located along the sub-header pipes and on side slopes that traps condensate from entering the flares station and is conveyed by gravity into the leachate collection ditches

Condensate – The liquid phase produced by the condensation of steam or any other gas (landfill gas)

PPE – Personal protective equipment refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or infection.

LEL – Lower Explosive Limit, the lowest concentration (5%) of a gas or vapour in air capable of producing a flash of fire in the presence of an ignition source,

UEL – Upper Explosive Limit, the upper concentration (15%) of a gas or vapour in air capable of producing a flash of fire in the presence of an ignition source

Header – Pipe network connecting sub-header pipes to the blower/flare station system; sloped at 5% grade

Sub-header – Pipe network connecting laterals to the header

Leachate – any liquid that, in the course of passing through matter, extracts soluble or suspended solids or any other component of the material through which it has passed.

LFGMS – Landfill Gas Management Suite; database used to enter all data gathered by the Landtec Gem 5000 gas analyzer; used to generate maps, tables, and graphs, and to track monitoring.

LFG – Abbreviation for Landfill Gas

Lateral – Pipe network connecting individual wells to the sub-header

Gas Manifold – The unity between a sub-header and header; where gas flow and quality can be measured for an individual field

SCFM – Standard Cubic Feet per Minute

Gemming – The act of using a Landtec GEM 5000 gas analyzer to monitor landfill gas

Gem – Synonymous with Landtec; device used to monitor landfill gas

Flare HMI (Human Machine Interface) – Software used to control the flare station remotely

Field Flow – Software that allows the user to review field flow and pressure data of the site remotely

Calibration Gas – A series of gases used to calibrate the Landtec GEM 5000 gas analyzer; methane high, nitrogen, carbon monoxide, hydrogen sulfide

VanDocs – VanDocs is the City's record and document management system.

Trimble – A device used in conjunction with the Plexus compressor box to measure and record the water level in vertical gas extraction wells.

Plexus – A device used in conjunction with the Trimble to measure and record the water level in vertical gas extraction wells.

Rescans – Rescans are gas wells that need to be re-monitored as they have exceeded the limits of one of the parameters measured.

Fouling – A mineral calcite scale that sticks to the inside of LFG gas extraction wells.

Static Pressure – The pressure exerted by the gas that is coming out from the gas well

System Pressure – The pressure exerted by the flare station blowers

Landfill Safety

The City of Vancouver, Transfer & Landfill Operations Branch requires that all persons working on the Vancouver Landfill (VLF) site receive the Site Safety Orientation before any work begins. The orientation includes an outline of safety issues and requirements at the Landfill.

Note: For more safety information regarding specific tasks, refer to the Vancouver Landfill Gas Safe Operating Procedures located on VanDocs and H: Drive, or ask a current landfill gas technician or supervisor.

General Safety Rules

- When entering the site, vehicles may not pass the inbound line-up during operating hours, unless traffic control persons are actively managing traffic. Vehicles may signal to traffic control persons that they would like to bypass by putting on their 4-way flashers.
- Smoking anywhere on the site is prohibited.
- Scavenging is prohibited.
- The speed limit on the Landfill premises is 30 km/h, and 15 km/h adjacent to the scales.
- All drivers/operators must observe traffic control measures
- Be aware of and stay clear of coned-off areas;
- Seatbelts must be worn at all times while vehicles are in motion.
- The use of cellular phones while operating vehicles or equipment is prohibited by City policy unless in a Province-approved hands free mode. Always move to a safe place out of the way of any equipment or vehicles prior to using a cellular phone or engaging in any other non-mobile activity.
- Be aware that asbestos is routinely managed at the Landfill. Stay upwind of any yellow bags at the Landfill active face.
- The use of listening devices with headphones (such as music players) is prohibited while on site by City policy.
- Comply with WorkSafeBC regulations when entering any confined space, depression, or potentially poorly ventilated areas.

On-site First Aid

- The first aid room is located at the southeast corner of the Landfill Administration building.
- For emergencies, call 911 (dial “9” first from land lines).
- Notify the designated First Aid Attendant at 604.603.1655 (VLF First Aid Cell Phone). If no answer, contact the Landfill Office at 604.606.2700 to alert the First Aid Attendant.

In Event of an Emergency

- Report any fires, spills, accidents or other emergencies to the Landfill Office immediately. In the event of an emergency that requires outside assistance, call 911 immediately. The Landfill Manager is responsible for contacting additional authorities as required.
- In an emergency, your first priority is to warn others and evacuate the immediate area. Do not put yourself in danger.
- If not directly and helpfully involved, report to the Emergency Muster Location in the north end of the employee parking lot.
- Do not return to the site until instructed that it is safe.
- Material Safety Data Sheets for materials used on site are located in Superintendent's office and available online. Materials brought onto site require MSDS sheets
- For detailed information, refer to the Vancouver Landfill Emergency Response Plan.

Health and Safety Concerns

- If you have any health or safety concerns, please discuss them with your site contact.
- An incident means an accident or other occurrence, which resulted in, or had the potential for causing an injury or occupational disease. Incidents may include near misses, minor injuries, medical aid treatments, doctor visits, and/or injuries resulting in lost time accidents (e.g. structural and equipment failures).

Personal Protective Equipment (PPE)

All PPE must meet WorkSafeBC requirements

- The following are necessary while on the site:
- Hi-visibility reflective vest or coveralls.
- Safety protective footwear (heavy-duty, above the ankle, construction-type safety boots with an external triangular green CSA patch). Boots should also be approved as shock-resistant when working on electrical systems (display an external white CSA patch).
- Approved safety eyewear.
- Hearing protection at the Landfill Active Face, Residential Drop-Off Area, Demolition Area, Compost Facility, and Flare Station.

Also necessary where appropriate:

- Respirator, Hard hat, Masks
- Fall protection in situations where a fall of 3 metres (10 feet) or more could occur, or from a lesser height but which represents a higher risk of injury;

- Other specific equipment where determined necessary or by regulation for the particular situation.

Heavy Equipment

- Do not walk in the active tipping area of the Landfill.
- Do not move into the vicinity of any vehicle or mobile equipment until you have made eye contact with the operator/driver and ensured that he/she is aware of your presence.
- Do not, at any time, walk behind any vehicle or piece of heavy equipment.
- Remain outside of the swing radius of excavators, approximately 15 metres (50 feet), unless absolutely necessary.
- In the demolition dumping area, maintain a safe distance between trucks (one truck and trailer length). End dump style demolition trucks pose an extreme hazard of tipping over on their side when the box is lifted.
- All equipment must be turned off before fueling.

Landfill Gas Hazards

- Landfill gas exists in the Landfill and in gas collection system piping and equipment and can collect in confined spaces, depressions, and poorly ventilated areas.
- Do not access the fenced enclosure at the Flare Station or conduct any work around the landfill gas system.
- Do not alter any component of the landfill gas collection system without prior authority from the Landfill Manager or designate.
- If possible, stand upwind of wells or any other Landfill gas works. If an accidental or uncontrolled release of landfill gas is believed to have occurred near your work area, attempt to remove yourself from the area by taking a path that is crosswind from the source and attempt to get upwind if it is determined to be safe to do so. Immediately notify the Landfill Manager or designate of the release.
- If a hydrogen sulphide (rotten eggs) odour is detected remove yourself from the area and notify the Landfill Manager or designate.
- More information about Landfill Gas is available upon request from your Site Contact.

Working Alone

- Determine with the Site Contact designate whether your work is considered Working Alone.
- You must receive adequate orientation and training before working alone.
- Working alone requires all City staff to be logged into SafetyLine application. See Safe Operating Procedure (SOP) for Working Alone

Air Intrusion

The LFG extraction plant should not be operated if there is an excessive air leak in the gas pipe or equipment, as excessive leaks can introduce significant amounts of oxygen into the pipe. The LFG burner tip is a source of controlled combustion, which requires fuel such as landfill gas and oxygen to sustain combustion. The source of oxygen at the burner tip is from ambient conditions controlled by the automated draft air louvers mounted on the flare shell. If there are significant amounts of oxygen in the gas pipe, the flame may propagate down the pipe causing injury to staff and/or damage equipment. Therefore it is crucial to investigate and eliminate all air leaks.

If there is an air leak at within the landfill gas infrastructure, there will be oxygen detected at the flare station analyzer. Contact Landfill Gas City Staff immediately.

LFG MSDS



LANDFILL GAS MSDS

SECTION 1 – INFORMATION

Product Identifier	LANDFILL GAS
Recommended Use	Landfill gas is a by-product of solid waste decomposition and is flared or used in waste to energy applications as a combustion fuel source.
Restrictions on Use	Intended for direct combustion only, not intended for ambient or compressed storage. Condensate should be removed from the gas prior to delivery or use.
Supplier	City of Vancouver, Transfer and Landfill Operations
Street Address	5400 - 72 nd Street, Delta, BC V4K 3N2
Emergency Telephone	Landfill First Aid 604-603-1655

SECTION 2 – HAZARD IDENTIFICATION

Hazard Classification	Flammable Gas (Category 1) Acute Toxic Inhalation (Category 2)
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Symbol	 
Signal Word	Danger
Hazard Statements	<p>H220: Extremely flammable gas</p> <p>H330: Fatal if inhaled</p> <p>H335: May cause respiratory irritation</p>
Precautionary Statements	<p>P202: Do not handle until all safety precautions have been read and understood.</p> <p>P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P260: Do not breathe gas.</p> <p>P271: Use only outdoors or in a well-ventilated area.</p> <p>P284: In case of inadequate ventilation wear respiratory protection.</p> <p>P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P310: Immediately contact medical services if you feel unwell.</p> <p>P377: Leaking gas fire - do not extinguish unless leak can be stopped safely.</p> <p>P381: Eliminate all ignition sources if safe to do so.</p>
Other Hazards	Simple asphyxiant.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS - MIXTURE

Chemical Name	Common name and synonyms	CAS Registry Number	Concentration
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Engineering Services – Vancouver Landfill

Landfill Gas Safe Work Procedure Overview

Methane	Sewer gas	74-82-8	30% to 60% (average 50%)
Carbon Dioxide	CO ₂	124-38-9	30% to 60% (average 37%)
Hydrogen Sulphide	H ₂ S	7783-06-4	< 100 ppm
Benzene		71-43-2	< 1 ppm

- Section 4 – First Aid Measures

Inhalation	Remove victim from contaminated area to fresh air. Administer artificial respiration if required and seek medical assistance. Administer oxygen. Call a physician.
Skin Contact	Wash affected area with soap and water.
Eye Contact	Flush with water. If irritation persists obtain medical assistance.
Ingestion	Not applicable.
Most important symptoms and effects	Acute exposure can result in asphyxia and/or hydrogen sulphide poisoning.
Immediate Medical Attention and Special Treatment, if Necessary	Treat symptomatically and for hydrogen sulphide poisoning.

SECTION 5 - FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Dry Chemical, Carbon Dioxide (CO ₂), foam, or water fog.
Unsuitable Extinguishing Media	Do not extinguish a fire involving landfill gas unless the flow of gas can be stopped, otherwise an explosive gas-air mixture could be formed creating a more dangerous environment than the original fire.
Specific Hazards Arising from Mixture	Hazardous combustion products: CO ₂ , CO, NO _x , SO ₂ , Volatile Organic Compounds.
Special Precautions for Fire-Fighters	Use self-contained breathing apparatus. Check surrounding areas for hydrogen sulphide and explosive gases.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures	Evacuate all personnel from area surrounding a release. Have leak made safe. Eliminate ignition sources such as flames or electrical sparks. Ventilate areas. Do not approach an area where a release has occurred without a combustible gas, hydrogen sulphide, carbon dioxide and carbon monoxide monitor. Use self-contained breathing apparatus if approaching a release.
Environmental Precautions	Monitor for accumulated gases, especially in low-lying areas.
Methods and Material for Containment and Cleaning Up	A gas release should not be contained. Ventilate areas where gas may have accumulated. Gas may be heavier than air and accumulate in low-lying areas.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling	Do not work in an area where gas could be present or released without a personal gas detector or equivalent level of protection. Ensure there are no sources of ignition; post area as “No smoking, open flames, or sparks”. Use non-sparking tools and explosion proof equipment.
Conditions for Storage	Ensure there are no sources of ignition in storage or concentration areas. Compatible materials for contact surfaces: stainless steel, HDPE or similar. Incompatible materials: mild steel, non-corrosion resistant materials.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters	WorkSafe BC Occupational Health and Safety Regulation
Methane	1,000 ppm (8 Hour)
Carbon Dioxide	5,000 ppm (8 hour) 15,000 ppm (15 minute)
Hydrogen Sulphide	10 ppm (Ceiling)
Flammable gas	20% LEL

Engineering Services – Vancouver Landfill

Landfill Gas Safe Work Procedure Overview

Engineering Controls	Use spark proof or intrinsically safe equipment when dealing with potentially explosive atmosphere. Adequate ventilation of possible combustion products are required.
Individual Protection Measures (Personal Protective Equipment)	
Eye/Face Protection	Safety glasses if in contact with condensate.
Skin Protection	Rubber or nitrile gloves if in contact with condensate.
Respiratory Protection	If engineering controls and work practices are not effective in controlling exposure to landfill gas, then positive pressure self contained breathing apparatus is required.
Thermal Hazards	Non-sparking flame resistant clothing when in areas where gas is within explosive concentrations.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colourless Gas
Odour	Pungent odour similar to rotten eggs.
Odour Threshold	0.001 to 0.13 ppm
pH	Condensate pH is acidic, pH 4 to 6.
Melting/Freezing Point (°C)	Not applicable.
Boiling Point/Range (°C)	Not applicable.
Flashpoint (°C) and Method	Not applicable.
Evaporation Rate	Not applicable.
Flammability	Yes
Upper Explosion Limit (% by volume)	15%
Lower Explosion Limit (% by volume)	5%
Vapour Pressure	Not applicable.

(mm Hg)	
Vapour Density (air=1)	Varies with composition 0.5 (methane) to 1.5 (CO ₂).
Relative Density	Not applicable.
Solubility	Not applicable.
Partition Coefficient n-octanol/water	Not applicable.
Auto-ignition Temperature (°C)	Approximately 600
Decomposition Temperature (°C)	Not applicable.
Viscosity	Not applicable.

SECTION 10 – STABILITY AND REACTIVITY DATA

Reactivity	When mixed with oxidizer and ignition source, explosion can occur.
Chemical Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	May react with oxidizers.
Conditions to Avoid	Sparks, open flames, static discharge.
Incompatible Materials	Oxidizers. Condensate affects untreated metal components.
Hazardous Decomposition Products	CO ₂ , CO, NO _x , SO ₂ , Volatile Organic Compounds.

SECTION 11 – TOXICOLOGICAL INFORMATION

Route of Entry	Inhalation
Acute Toxicity	Fatal if inhaled.
LC50 Inhalation rat	444 ppm (4 hour exposure)
LCLo Inhalation human	800 ppm (5 minutes)
Effects of Acute	Landfill gas can act as a simple asphyxiant by displacing oxygen.

Exposure to Product	Asphyxiation symptoms include headaches, rapid respiration, nausea, CNS depression, disorientation, unconsciousness, coma and death.
	Hydrogen sulphide is an acute toxicant. Symptoms include eye irritation, respiratory irritation, and cough. Effects at higher concentrations included nausea, vomiting, vertigo, headache, confusion, unconsciousness, and death.
Skin Corrosion/Irritation	Condensate may cause irritation.
Serious Eye Damage/Irritation	Hydrogen sulphide can be irritating to mucous membranes. Condensate may cause eye damage.
Respiratory or Skin Sensitization	None reported.
Effects of Chronic Exposure to Product	None known.
Germ Cell Mutagenicity	None reported.
Carcinogenicity	None reported.
Reproductive Toxicity	None reported.
Specific Target Organ Toxicity - Single Exposure	Hydrogen sulphide can be irritating to mucous membranes. Condensate may cause eye or skin damage.
Specific Target Organ Toxicity - Repeated Exposure	None known.
Aspiration Hazard	Not available.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity	Inhalation hazard.
Persistence and degradability	Not applicable.
Bioaccumulative Potential	No bioaccumulation known.

Mobility in Soil	Not applicable.
Other Adverse Effects	None known.

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal	Not applicable
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- Section 14 - Transport Information

UN Number	UN1971
UN Proper Shipping Name	Methane
Transport Hazard Class	2.1 - Flammable gas
Packing Group	Not applicable.
Environmental Hazards	No
Special Precautions	Not applicable.
Transport in Bulk (Marine)	Not applicable.

SECTION 15 - REGULATORY INFORMATION

Safety, Health and Environmental Regulations Specific to the Product	Not applicable.
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Section 16 – Other Information

Preparation Date	August 2015
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Landfill Gas Basics

A large percentage of municipal solid waste is composed of biodegradable materials. Under normal conditions, naturally occurring microorganisms will biodegrade organic waste material, for example, food waste, paper, and wood and yard trimmings resulting in a by-product landfill gas. The major constituents of landfill gas are methane and carbon dioxide, however trace concentrations of a variety of other compounds may also be present in LFG, including hydrogen sulphide, mercaptans, and volatile organic compounds, which can create nuisance odours, degrade air quality and contribute to the greenhouse gas effect, and result in adverse health effects.

Generally, the amount and composition of the organic waste in a landfill directly affects the quality and quantity of LFG that will be generated, however other environmental factors further play a part in dictating LFG generation.

The composition of landfill gas is directly dependent on the biological phase of decomposition. There are 4 phases of landfill gas production:

As a landfill is initially constructed the void space is filled with air (79% nitrogen, 21% oxygen).

1. As the oxygen is consumed by the microorganisms, carbon dioxide is produced along with hydrogen and water vapour.
2. Anaerobic methane-forming conditions develop and methane and carbon dioxide concentrations will almost be equal (e.g., 45% carbon dioxide, 55% methane).
3. Anaerobic conditions have developed. Landfill gas methane concentration will be slightly higher than carbon dioxide concentrations (e.g., 60% methane, 40% carbon dioxide).
4. As waste stabilization is completed over time, the landfill gas eventually is replaced with air. Methane and carbon dioxide concentrations decrease while oxygen and nitrogen increase.

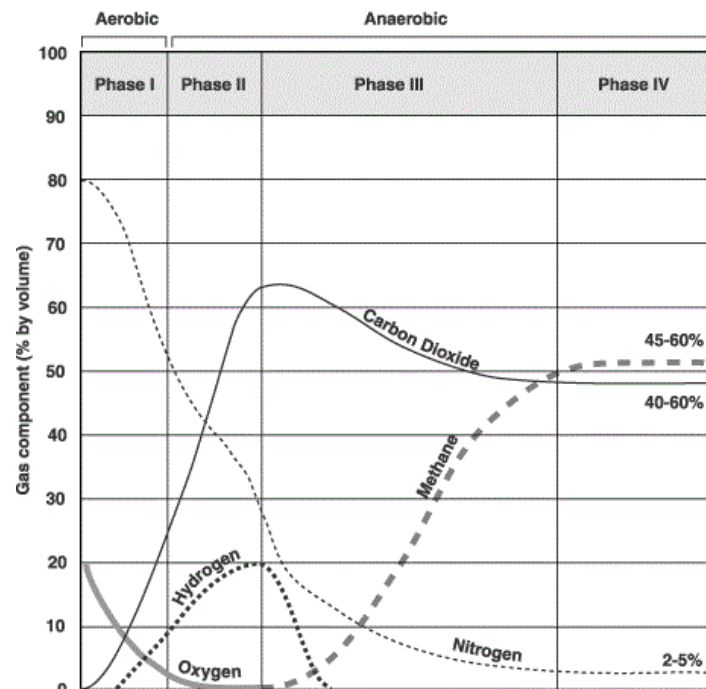


FIGURE 1 - PHASES OF LANDFILL GAS PRODUCTION

The main components of landfill gas are methane and carbon dioxide. Trace gases of carbon monoxide, hydrogen sulphide, hydrogen gas, and oxygen are also present in landfill gas which can cause noticeable negative effects on gas production.

- **Methane** – The main by-product of landfill gas production. At room temperature and pressure, methane is colourless and odourless, and is lighter than air. It is 20 times more harmful to the environment and is flammable when mixed with air.
- **Carbon Dioxide** – The secondary by-product of landfill gas production. At room temperature and pressure, CO₂ is colourless, odourless, and heavier than air.
- **Oxygen & Nitrogen** – Not by-products of landfill gas production but become present in the landfill gas when operating a collection system due to air intrusion. Oxygen is highly flammable and can cause landfill fires.
- **Trace Gas** - Landfill gas contains trace amounts of H₂S, CO, Sulfides, Disulfides, Mercaptans, H₂, NMOC's and many more. These trace constituents are responsible for the odour in the landfill gas and are the most toxic.

The City of Vancouver has operated an active landfill gas (LFG) collection and flare system (figure 2) since 1991. The system was initially installed to control odour and had the added benefit of reducing greenhouse gas emissions. In December 2002, the City entered into a 20-year agreement with Maxim Power (Maxim) for landfill gas utilization and the following year Maxim commissioned a gas conditioning facility at the Landfill. In 2014, Maxim sold their

equipment for landfill gas conditioning (located at the Landfill Gas Flare Station) and co-generation facility (located off site) to Village Farms International, owners and operators of the greenhouse site that hosts the co-generation facility. Currently, a small portion of the gas is directed to the Landfill Administration buildings where it is used to provide space heat.

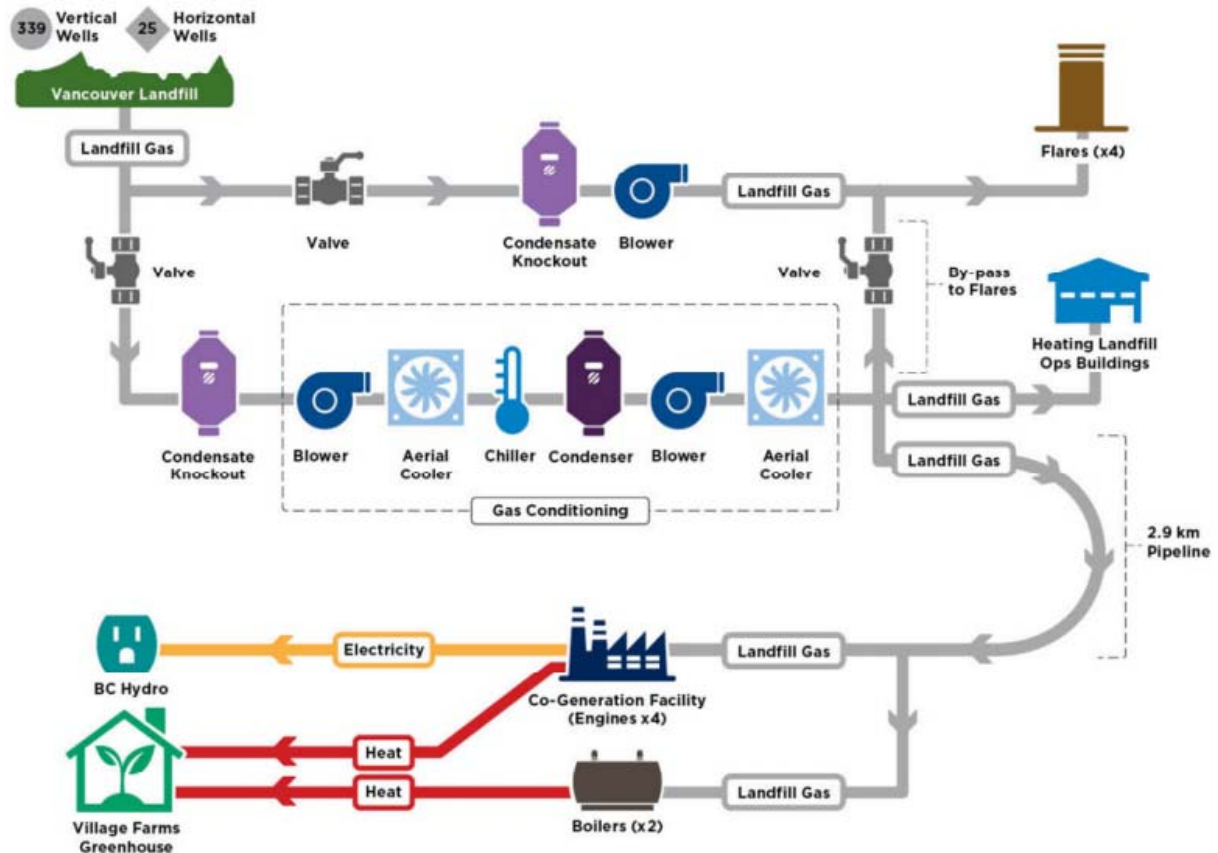


FIGURE 2 - LANDFILL GAS COLLECTION & BENEFICIAL USE SYSTEM 2015

Currently at the Vancouver Landfill, there are 386 (2016 data) monitoring points over 7 distinct areas that collect gas, with more planned in the future.



FIGURE 3 - LANDFILL GAS COLLECTION SYSTEM 2015

Fire and Emergency

Fire Prevention & Monitoring

Fire prevention, monitoring, and investigation are of upmost importance at the landfill and diligence is required when dealing with the potential of fire. Common signs of potential for a landfill fire include:

- Visuals signs
 - Venting gases emanating from the subsurface
 - Dead vegetation
 - Snow melt
- Ground settlement
 - As gases and ash are produced, void space is created and the ground will settle
- Gas composition (carbon monoxide, oxygen)
 - Carbon monoxide of >200 indicates possible fire in the area
 - Fire unlikely if oxygen less than 1%, oxygen greater than 5% holds risk of spontaneous combustion of material
- High temperatures
 - Surface temperature greater than 140°F

If you think a fire may be present, immediately contact your supervisor or landfill manager and investigate further.

For more information regarding landfill mechanics, health and safety, and more, see Landfill Fire Training Course Manual prepared by www.landfillfire.com.

Fire Monitoring with Gastec Gas Tubes

Gastec gas tubes are used for monitoring to obtain accurate carbon monoxide readings from a flow of gas. If a gas well that has been monitored with a Landtec GEM 5000 gas analyzer and sees carbon monoxide concentrations above 200ppm, further investigation is required. Due to the chemical cells inside of the monitoring device, there may be interference from hydrogen sulphide, resulting in false positives. Gastec tubes are used to confirm the actual concentrations of the gas stream. To use these tubes:

1. Break the tip off both ends of the detector tube using the tip-breaker that is on the end of gas sampler
2. Push the pump handle all the way forward (in), and insert the gas tube into the sampler so that the arrow on the gas tube points towards the sampler
3. Align the red line on the back plate and the guide mark (100 or 50) on the pump handle
 - a. 100 means a 100mL full pump stroke sample, while 50 means 50mL half pump stroke. To determine which is required, check the gas tube box.

4. Direct the gas tube into the gas stream and pull full back on the pump handle until it locks into place
5. Wait until the sampling time has elapsed, which can be confirmed by a colour change on the back of the pump handle indicator (dark during sampling, white once completed)
6. Unlock the pump handle by twisting a quarter turn and restore it to its initial position
7. Continue the required number of times (n=1 on gas tube indicates 1 pump is required)

Temperature is also a key indicator for the presence of a potential fire. A surface or gas temperature monitored to be above 140°F (60°C) is a key sign of a potential landfill fire and should be further investigated.

Document	VanDocs Record Number
Gastec - How to sample Carbon Monoxide	DOC/2016/236613
Gastec Tube User Manual	DOC/2016/225443

Carbon dioxide to methane ratios can also indicate the presence of fire. With a ratio of greater than 1, further investigation is required. To learn more about these ratios, see “LFG Scatter Plots” in this document.

Emergency Response

In the event of a serious medical emergency or where outside help is required, appoint a specific person to contact 911 and have that person report back that 911 has been called. Contact the First Aid Attendant through the radio or at 604-603-1655 (cell). For minor injuries, contact the first aid attendant for treatment.

In the event of additional risks on the job that may pose a safety hazard, contact your supervisor or the Manager of Transfer & Landfill Operations for further instructions by radio or cell phone.

Refer to the VLF First Aid Response and the VLF Emergency Response Safe Work Procedures for procedures that must be followed in the event of an emergency.

Fires

Surface fires

Surface fires generally involve recently buried or uncompacted refuse situated on or close to the surface in the aerobic decomposition layer (1-4 feet in depth). These fires can be greatly intensified by presence of landfill gas, which may cause the fire to spread throughout the landfill.

Generally burning at relatively low temperatures, surface fires can be characterized by the emissions of dense white smoke and productions of incomplete combustion (carbon monoxide). Common sources of surface fires include dumping of hot loads into the landfill and from human activity (smoking, vehicles driving in waste, construction & maintenance, arson).

Underground fires

Underground fires are fires that occur deep below the surface of the landfill and involve materials that are months to years old. These are the most difficult fires to extinguish. Underground fires have the potential to create large voids in the landfill, which can cause cave-ins of the landfill surface. Furthermore, they can produce flammable and toxic gases (carbon monoxide) and have the potential to damage and destroy leachate containment liners as well as landfill gas infrastructure.

The most common cause of underground fires is an increase in oxygen content in the subsurface, which increases bacterial activity and raises temperatures. These areas of increased temperatures or “hotspots” can come in contact with pockets of methane and result in a fire.

Of particular concern with underground fires is the fact that they tend to smolder for weeks, to months at a time and can be quite difficult to identify. Generally, an underground fire can be confirmed by the following signs at the landfill:

- Substantial settlement over a short period of time
- Smoke or smoldering odor emanating from the landfill or gas extraction system
- Elevated levels of carbon monoxide (above 1000ppm)
- Elevated temperatures in the extraction system (above 140°F)

Note: It is diligent to get a certified laboratory analysis of a landfill gas sample to confirm the concentrations of carbon monoxide as interference may occur in the chemical cells of the GEM 5000 Gas analyzer.

Extinguishing Landfill Fires

Fire and rescue services will be supplied primarily by the Delta Fire Department. However, the Landfill trains personnel to be able to respond to small fires or in situations when the fire department can not readily respond. The Landfill does not have suitable equipment or personnel training for rescue operations and these functions will be provided by the Delta Fire Department.

The Fire Team should be comprised of personnel trained in firefighting. They may assist with either extinguishing fires or fire prevention during an emergency condition, their duties include:

- Attempt to extinguish fires within the limits of training and equipment available.
- Inspect facilities and advise the On Site Commander of high fire hazards.
- Mitigate fire risks.

The Fire team reports to and takes direction from the Field Team Leader. The activities require working closely with the Safety Officer.

If a landfill fire has been confirmed, the following steps should be taken:

- Check for landfill gas collection pipes in the vicinity of the fire. If pipes are in the area, you will be required to turn off the header and have the pipes isolated from the collection system.
- All personnel fighting a landfill fire should wear a respirator equipped with organic vapour/HEPA cartridges. Note that this cartridge does not protect against carbon monoxide, which is present during a fire.
- If the fire is visible, dirt is preferred to water for extinguishing garbage fires.
- The City of Vancouver water truck as well as the on-site Contractor's trucks can be used to transport water from the pond. An underground fire is typically difficult to extinguish. If in doubt, large volumes of water should be applied using the Contractor's trucks and water truck.
- Monitor the area around the Landfill for smoke. Persons should be evacuated from any area subject to thick or continuous smoke.
- Place a light plant in the area to provide for overnight fire watch and fire control activities.

For more detailed information, see Landfill Emergency Response Plan Supervisor Training Guide.

Flare Station Fire

The flare station has numerous safety shut offs to minimize the risk of fire or explosion. If a fire or explosion were to occur at the flare station, the emergency stop should be engaged to cut off flow of landfill gas to the station and to decrease risk of further damage. When the emergency stop is engaged, flares and blowers will stop and landfill gas will remain in the landfill infrastructure.

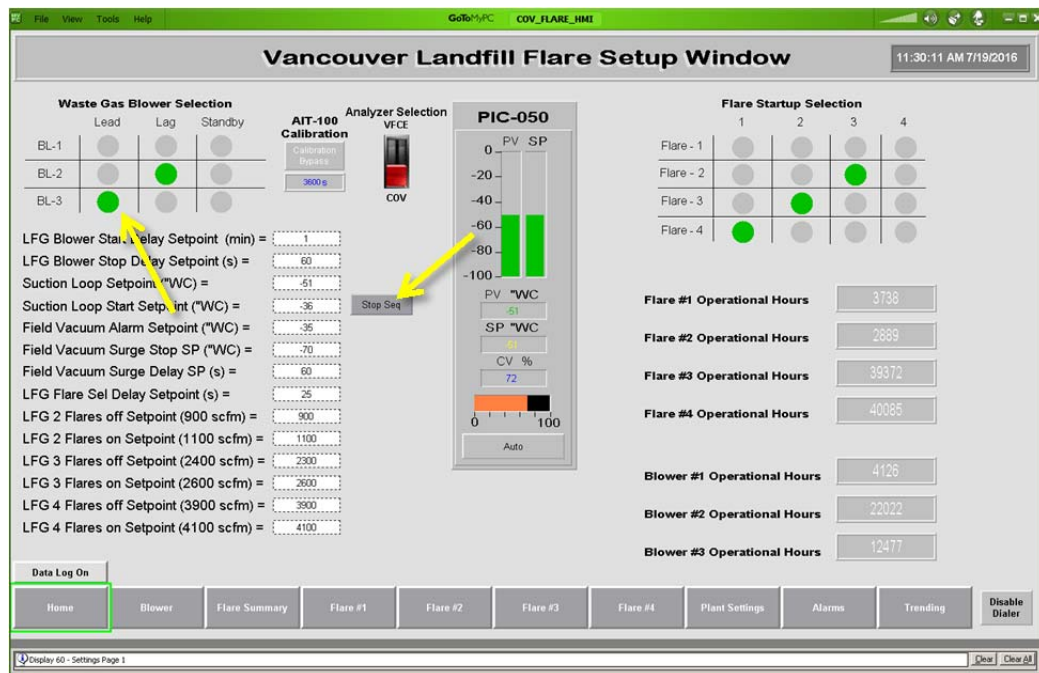
Emergency stop can be engaged either remotely or physically at the flare station. At the flare station, the emergency stop button can be located on the wall of the south side of the trailer (see figure below). Pushing this button will stop all processes at the flare station. After pushing the E-stop, call Village Farms (604-940-6012 or 604-818-5448) to update them of the situation and to request they turn off their blowers to prevent landfill gas from passing through the station



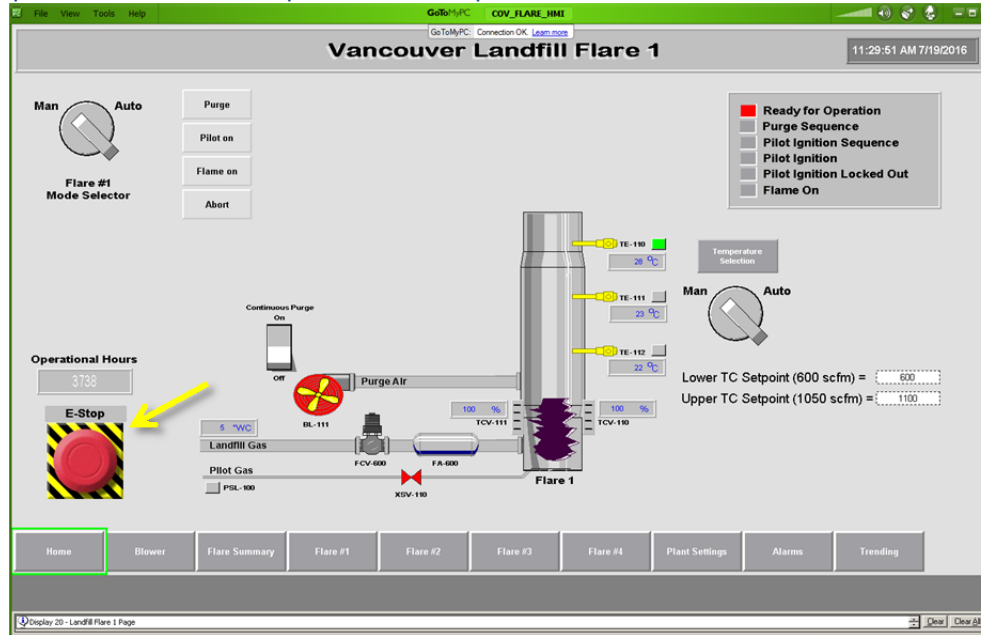
FIGURE 4 - FLARE STATION EMERGENCY STOP BUTTON

To shut off the flare station remotely through the Flare HMI:

1. Call Village Farms (604-940-6012 or 604-818-5448) to update them of the situation and to request they turn off their blowers to prevent landfill gas from passing through the station
2. Open Flare HMI
3. Open the plant settings tab and press the “stop sequence” button



4. Take the blowers and flares out of sequence by clicking the green buttons on the plant settings tab, this should turn them grey.
5. Switch the blowers and flares to manual mode to ensure that they do not turn on and ensure gas does not flow through the station
6. Open each flare tab and press the “E-stop” button to ensure that the flares are off



7. Monitor the Flare Summary tab to ensure that all activity at the flare station is seized

Overtime as landfill gas is being produced and the flare station is not pulling any gas, the system will start to pressurize. Within 24 hours, a field reconnaissance of the fields should be conducted to determine if any valves, monitoring devices, flanges, or caps are open and leaking gas to the environment. If any gas is leaking to the atmosphere, it must be closed. This is the case for Area 2 West, Area 2 East, and Area 3.

The exception to this is where there is a flexible geomembrane liner (phase 01, phase 02, and phase 03). As the pressure builds within the system, the flexible geomembrane liner can become damaged. Therefore, if the flare station/ blowers are down for an extended period of time, a landfill gas technician will have to conduct a field reconnaissance and monitor the pressure below the flexible geomembrane liner within 12 hours. Pressures below the liner should **not** exceed +10"WC.

- If the static pressure below the liner is >10"WC then the LFG technician must relieve the pressure by opening up wells/vents across the field

For more detailed information, see O&M Manual for Vancouver Landfill Gas Control System.

Earthquakes

During an earthquake, it is very important to remain calm and to protect yourself:

- Drop underneath a table, inside a vehicle, or any structure that will protect you from falling objects. Move away from windows, overhead fixtures, bookcases, or anything else that can fall
- Cover and protect your head
- Hold onto your cover and stay there until the shaking has stopped. Count to 60 seconds after shaking has stopped and then proceed to remove yourself and go to muster location if safe to do so

If you are outside during an earthquake:

- Remain outside, in an open area away from buildings, trees, powerlines and roads
- If in a vehicle, remain there until safe to do so
- Count to 60 seconds after shaking has stopped and then proceed to remove yourself and go to muster location if safe to do so

After the shaking has stopped:

- Check for safety hazards such as fire, electrical hazards, gas leaks, or water leaks
- Open the Flare HMI to see if the flare station is still running. Possible shifting in the ground may have broken gas lines
 - Shutting down the flare station may be necessary

Note: Keep telephones and roads open for emergency use. Should not be used unless for emergencies after large events such as earthquakes or explosions. The City of Vancouver may require employees to assume emergency response assignments.

Severe Weather

Severe weather such as high winds and thunder and lightning can cause operational problems at the Vancouver Landfill. On the site, we are the highest point for long distances, and while on top of phase 01, 02, or 03, you will be the highest object for lightening to strike.

In the event of lightning and severe weather:

- Return to your vehicle and stay inside until safe to do so
- Try and avoid open fields, tops of hills, or near ridge lines
- Stay away from tall, isolate objects (power lines, monitoring devices)

- If you are in a group of people, spread out to avoid the current traveling between group members
- Stay away from water and damp items such as ropes or rags
- Stay away from metal objects such as fences and poles
- Return inside if safe to do so until severe weather passes

Weather data including rain fall, pressure, and wind velocity can be viewed at the City of Vancouver Landfill located in the technical trailer.

Note: For more information regarding the Davis Vantage Pro 2 weather station visit the following site: <http://www.davisnet.com/solution/vantage-pro2/>

Prolonged Power Outage

If a power outage occurs at the landfill, the backup generator will engage and operations will run accordingly. However, if the generator fails to start, the flare station will go down. If this is the case, certain precautions will need to be made.

Overtime as landfill gas is being produced and the flare station is not pulling any gas, the system will start to pressurize. Within 24 hours, a field reconnaissance of the fields should be conducted to determine if any valves, monitoring devices, flanges, or caps are open and leaking gas to the environment. If any gas is leaking to the atmosphere, it must be closed. This is the case for Area 2 West, Area 2 East, and Area 3.

The exception to this is where there is a flexible geomembrane liner (phase 01, phase 02, and phase 03). As the pressure builds within the system, the flexible geomembrane liner can become damaged. Therefore, if the flare station/ blowers are down for an extended period of time, a landfill gas technician will have to conduct a field reconnaissance and monitor the pressure below the flexible geomembrane liner within 12 hours. Pressures below the liner should **not** exceed +10"WC.

- If the static pressure below the liner is >10"WC then the LFG technician must relieve the pressure by opening up wells/vents across the field

Landfill Gas Release

The most likely means of detecting a landfill gas release include odours from hydrogen sulphide, personal gas detector readings, or flare station alarms.

If a landfill gas released is detected in an area:

- Immediately remove yourself from the area (crosswind or upwind if the source is known)
- Do not enter any depressions or low lying areas as gas may accumulate in these spots
- Move to higher elevation if possible
- Divert all personnel and traffic from the area
- Monitoring the ambient air using a personal gas detector for any dangerous gas concentrations that may be present
- If the area of landfill gas release is known, isolate the system from the collection system
- If source, concentrations, or a person has ill effects, immediately call 911 and request assistance (SCBA system to help isolate release)

Compressed Gas Cylinder Release

An emergency with a compressed gas cylinder occurs when it is leaking, has exploded, or appears to be sufficiently damaged that it may leak or explode. Once a compressed gas cylinder has exploded, the risks remaining are fires and damages from projectiles and the situation should be handled as a fire emergency.

Signs of a compressed gas cylinder leaking include hissing and producing a stream of vapour. If you encounter a leaking compressed gas cylinder immediately turn off all machinery, equipment, and electrical appliances within the vicinity. Evacuate area and call 9-1-1. Be aware of the possibility that a leak could have frozen over and the cylinder has not yet been emptied.

Damaged cylinders have a greater likelihood of leaking or exploding during handling or while in storage. If possible and safe, perform a controlled release of the contents prior to storage, and if not, call manufacturer.

SCHEDULE 14
CONTRACTOR SAFETY ABSOLUTES

A. Forbidden Actions:

- Walking under suspended loads.
- Working or driving while under the influence of alcohol or drugs.
- Entering a confined space without first using a gas monitor to test the atmosphere.
- Entering a trench/hole over 4 feet (1.3 metres) without shoring or other engineered systems/procedures.
- Driving and talking/texting on a mobile phone/device, unless using hands free.
- Smoking in non-designated areas or within 20 feet (6 metres) of co-workers, City buildings or in City vehicles/equipment.

B. Mandatory Actions:

1. Wearing a safety belt when provided in vehicle.
2. Vancouver Landfill Speed Limit:
 - Drive within the **15 km/h speed limit** in the area of the scalehouse and administration/shop buildings and **5 km/h speed limit** within the Residential Drop Off parking lots.
 - Driver within the **30 km/h speed limit** within all other areas of the landfill.
3. Vancouver South Transfer Station Speed Limit:
 - Drive within the **5 km/h speed limit** in all areas of the Vancouver South Transfer Station.
4. Wearing the following personal protective equipment is a mandatory requirement for all areas of the Vancouver Landfill and Vancouver South Transfer Station with the **only** exception of the public parking areas. The mandatory PPE requirements are:
 - a) Eye safety protection **“at all times”**.
 - b) Reflective safety vests (minimum dual contrast).
 - c) CSA approved safety footwear (over the ankle preferred).
 - d) Flame Resistant Clothing when performing work on or directly adjacent to the gas collection system or within the confines of the Flare Station.
 - e) When working on the tipping floor for greater than a total of 30 minutes in an 8 hour shift at the Vancouver South Transfer Station, a minimum requirement of a half face respirator with organic vapour P100 cartridges.

Additional PPE requirements:

 - f) Hearing protection must be worn where required to protect against noise.
 - g) Hard hats or bump caps when required by the task being completed. (Note: Mandatory hard hat use may be directed by a contractor's Health and Safety Program)
5. Locking out hazardous energy sources before starting work on equipment/machinery.
6. Using fall protection when working at heights over 10 feet (3 metres).

CONTRACTOR SAFETY ABSOLUTES

7. Any ground disturbance must not be undertaken without approval from Transfer & Landfill (TLO) management. All ground disturbances must be planned, including the use of locates, AutoCAD record drawings and painted on the ground. The plan will include the use of a spotter and all underground facilities/utilities will be exposed at suitable intervals by hand or hydrovac and identified for size and alignment prior to mechanical excavation.
8. When ground disturbance unearths an unknown material or material which may potentially contain asbestos, all work must be stopped and IMMEDIATELY reported to TLO management so that containment and abatement can be planned.

C. Procedure for Hazardous Atmosphere

Contractor to establish an Exposure Control Plan for working in a hazardous atmosphere. The plan will include the hierarchy of controls as outlined by best practice and WorkSafeBC. All Exposure Control Plans completed by a qualified person deemed by the WorkSafeBC board. The Exposure Control Plan must cover but limited by the following:

- Determine the level of the work plan required – hazardous atmosphere or confined space work.
- A documented procedure describes the requirements and responsibilities of all individuals involved, including a rescue plan.
- Conduct a risk assessment - to isolate any energy sources, verify air quality, including an effective ventilation plan.
- Access and egress in place before every entry.
- Functional calibrated personal or stationary atmospheric monitor(s); monitor the level of oxygen, combustible gases, and other toxic gases continuously in exposed areas.

Only certified industrial hygienist (CIH), registered occupational hygienist (ROH), certified safety professional (CSP), Canadian registered safety professional (CRSP), or professional engineer (P. Eng.) can complete hazard assessments and confined space/ hazardous atmosphere documentation. The individual must have experience in the recognition, evaluation, and control of confined space hazards.

D. Procedure for Inadvertent Utility Strike (Overhead/underground power lines, gas lines other than Landfill Gas extraction)

WorkSafeBC considers utility strikes as potential “major release of hazardous substance”. Below is the current City of Vancouver practice related to utility strikes:

- The contractor striking the utility “live or not” must immediately stop work and report to their TLO contact.
- TLO in consultation with the contractor and the City of Vancouver Operations Support and Safety Branch (OSSB) will determine if the strike falls under the WorkSafeBC definition of “major release of a hazardous substance”. TLO and OSSB will determine if a report will be submitted to WorkSafeBC by the contractor or by TLO.

E. Procedure for Inadvertent Strike of Landfill Gas (LFG) Extraction System (Piping, wellheads and connections, valves)

The LFG extraction plant should not be operated if there is an excessive air leak into the gas collection system as it significantly increases the risk of underground fire and also shut down the flare station and utilization systems abruptly, risking damage to these downstream systems.

- The LFG burner tip is a source of controlled combustion, which requires fuel such as LFG and oxygen to sustain combustion. The source of oxygen at the burner tip is from ambient conditions controlled by the automated draft air louvers mounted on the flare shell.
- **Air Intrusion** - If there are significant amounts of oxygen in the gas pipe, the flame may propagate down the pipe causing injury to staff and/or damage equipment. In addition, air intrusion causes safety features within the gas plant to shut down production which has a significant impact on TLO's ability to meet customer requirements.
- Landfill staff are keen to know when a gas system part is contacted because the gas infrastructure within the Landfill is vital to the landfill gas extraction system, which the Landfill is accountable for under its Ministry of Environment and Climate Change Strategy authorization. Even a bend in a pipe can impact on our extraction controls.

Locating Landfill Gas System Parts

TLO recognizes that locating LFG extraction system pipes, wellhead connections, and valves within the waste/soil materials at the Landfill is challenging. The following steps will help in successfully locating the LFG system parts:

1. Obtain applicable record drawings from TLO and/or associated consultants and discuss known points of potential conflicts.
2. Use best industry excavation/trenching practices and follow your company's operating procedures to locate, delineate location (marking in the field) and expose sub-surface parts. This includes hand exposing or using hydrovac as necessary.
3. Pre-surface disturbance planning (i.e. trenching):
 - a. Communicate with the LFG Technician to verify as best as possible the location of pipes and proposed work.
 - b. The technician will determine actions to mitigate potential interference with gas system operation (i.e. close valves).
 - c. Workers should hand expose pipe connections at the nearest well heads so that the direction of pipes leading to and from wellheads can be determined.

"STOP WORK" With Any Contact

Contact with any gas system part is considered an operational impact requiring operational responses. The following steps will help the Landfill staff respond quickly so that any effect on the gas extraction system is minimized.

1. If an unplanned contact with or damage to pipe occurs (i.e. dropping a boulder on, rubbed, hit, etc.), **"STOP WORK!"**
2. Immediately contact the LFG Technician via phone call with a request that they attend to view and assess the damage.

CONTRACTOR SAFETY ABSOLUTES

3. The contractor and LFG Technician, in consultation with the Landfill Engineer, will create a work plan to address the contact (i.e. close valves, repair pipe, etc.).
4. Before repair, take pictures of the contact/damage.
5. Flash report the contact to the Flash Report Distribution list with a description of the contact cause and recommended next steps to mitigate the contact.
6. Discuss the pipe contact as an operational item at the next weekly construction meeting.

Documented Report of Contact

An email investigation report must follow.

Understandably, the requirement for a documented report may be seen by some workers as an investigation to find fault. Our intent is to ensure we act quickly to confirm the integrity of the landfill gas systems, not to create employee concern about reporting. We certainly don't want to discourage employees from reporting contacts or even near misses of any kind.

If circumstances surrounding the incident indicate failure to follow standard working practices/procedures or other safety-related evidence, then a formal safety investigation needs to be completed within 30 days of the incident and submitted to TLO.

F. Asbestos Control

The Landfill accepts asbestos containing material from various sources such as construction demolition sites. Over the life of the Landfill, the material has been buried at various locations.

- Landfill surface/lower layers - Contractors who will be disturbing the landfill surface or lower layers with drilling, excavation or trenches **should anticipate** contact with asbestos containing material.
- Buildings/structures - Contractors disturbing buildings and structures shall determine the potential presence of asbestos containing material.

Contractors will establish an Asbestos Exposure Control Plan for the handling and disposal of asbestos containing material and the plan must include the following:

- Monitoring procedures.
- Worker & public protection procedures.
- Handling procedures.
- Disposal procedures

Worker and Public Notification

The Contractor shall inform all workers and the public visiting the work area of the potential for exposure to asbestos contaminated material from construction disturbance and the importance of safety precautions to ensure the safety of all workers and the public.

CONTRACTOR SAFETY ABSOLUTES**Handling Procedures**

The following asbestos-containing waste handling procedures shall be implemented:

1. Temporary barriers will be erected 10 metres upwind and 25 metres downwind of all work sites and dumping areas to prevent unauthorized access to these hazard areas by unprotected workers.
2. All persons within 25-feet (8 metres) of the operations shall wear an asbestos HEPA approved respirator. Personnel shall wear disposable (Tyvek) coveralls, gloves, and foot coverings. Personnel shall be properly trained on the health effects of asbestos, proper work practices, and the use of respirators.
3. All disposable (Tyvek) coveralls will be considered to be contaminated with asbestos and shall be disposed of accordingly.
4. A water truck equipped with the appropriate spraying equipment to produce a fine mist will be required at all times to keep the suspected asbestos containing material wet at all times.
5. All drill cuttings or excavation material that is not already damp upon removal from the workings will be immediately wetted and placed into the container.
6. Disposal of suspected asbestos containing material:
 - If material is being placed in a large container or truck box, the material shall be deposited into a poly lined container or truck box for subsequent loading and hauling to the final onsite disposal area.
 - The liner of the container shall be of sufficient strength and thickness to prevent tearing and puncture of the liner when handling the material and transporting the container to the final disposal location. The liner shall stay intact without seam separation or damage throughout the handling and disposal process.
 - The container or box shall be sealed once it is full and during transfer to the final waste disposal area.
1. If the material is being hand bagged, the contractor's Asbestos Exposure Control Plan shall include abatement procedures that include **double bagging in 6 ml yellow disposal bags**.
2. Material shall be disposed of at an onsite location specifically designated by the Owner or Engineer for disposal of asbestos contaminated material.
3. The Landfill Manager shall be notified of the status of the asbestos containing waste materials on a daily basis while handling and disposing of asbestos containing waste.

Drilling/Excavation Safety

1. The Exposure Control Plan for drilling operations and ground disturbance shall include ambient air monitoring and/or personal monitoring to confirm a safe distance from activities at which a respirator is not required to be worn with respect to landfill gases and airborne asbestos. The use of brush burning fans should be considered to vent the ambient air away from the work area. Care must be taken not to vent toward adjacent work areas.
2. If air monitoring and/or personal monitoring determines that air purifying respirator (APR) is necessary, the Contractor shall provide an appropriate APR (half-face or full-face) with approved P-100 cartridges for each crew member. All personnel using APR shall be properly trained and fit-tested prior to use.

G. Use of Crane, Drill, Tall Obstruction – Notification to the Boundary Bay Airport

The entire landfill property is within the limits of the Boundary Bay Airport as recorded on Plan No. 61884, 11 May 1981 – Transport Canada Plan Showing Lands Affected by Zoning Regulations for Boundary Bay Airport. This area includes a 45.5m Elevation Outer Limit Zone.

Notification Required

1. Crane Use or Other Obstruction

Any and all plans to use cranes or erecting of any obstruction (including drills) higher than 25 feet (8 meters) above ground level (AGL) the Contractor shall contact the Vancouver Landfill Manager and the Boundary Bay Airport.

2. When is notification due?

To the Landfill Manager – Two weeks prior to the erecting the crane or obstruction.

To the Boundary Bay Airport - An email notification to the airport MUST be submitted 48 hours prior so that the required NOTAM notification can be published for the knowledge of aircraft in the airport fly zone.

3. What is required to be in the notification?

The notification must include:

1. Contact person/ number,
2. Elevation above ground level, height above sea level, position of the crane latitude and longitude,
3. Duration of work, lighting and radius of work, as well as a description of the work.

4. Who gets the Boundary Bay notification?

Notification is sent via email to:

- info@alpha-aviation.ca
- [Landfill Manager \(lynn.belanger@vancouver.ca\)](mailto:Lynn.belanger@vancouver.ca)

5. Late Notification

- Although 48 hours notification is required, the Boundary Airport management acknowledges that the Landfill may use cranes for emergency events.
- Send the email as soon as it is determined a crane must be used for an emergency event with an explanation for the late submission.

H. Flash Reporting:

1. The Flash Report is to be used as a tool to communicate via email that an incident or event is occurring and what immediate preventative measures being taken at the scene. IT IS NOT AN INCIDENT INVESTIGATION, ONLY A NOTIFICATION OF INCIDENT. The email must be sent out as quickly as possible, even if the full incident information is not known.
2. The intent of Flash Reporting is to provide members of a dedicated email distribution list a brief notification of a significant, serious or extreme event. The standardized format of communicating and gathering information gives all readers the information they require in a timely manner for potential escalation of details and/or interaction with external stakeholders.

Flash Report Levels & Definitions

Significant

- any near miss that we wouldn't attempt to apply "serious" to (may include property damage)
- any injury that requires a trip to hospital
- any utility strike **WITHOUT** hazardous substance release (electrical power of any sort is considered a hazardous substance)
- any event where a member of the public is involved (without injuries)

Serious

- call to 9-1-1 to help control or respond to the scene of an incident
- person(s) transported by ambulance
- any incidents or events where member of the public was injured or experienced property damage
- assault or serious threats of violence to employee
- any utility strike **WITH** hazardous substance release (electrical power of any sort is considered a substance)
- work refusals
- vehicle event resulting in serious injury to employee
- contact with or wires down low voltage or underground utilities
- environmental release requiring moderate/major clean-up
- damage to equipment resulting in spill requiring moderate/major clean-up
- any event causing an evacuation
- any incident that is immediately reportable to a regulating body
- any visit from a WorkSafeBC Inspector

Extreme

- injury to employee or member of the public that results in significant/permanent disability or death
- any employee seriously injured or killed including employee that requires immediate surgical intervention
- major structural failure or collapse including crane, hoist, scaffolding
- any major release of hazardous substance
- injury to employee that requires immediate surgical intervention
- contact with high voltage wires
- any event with irreparable/significant damage to environment, including equipment failures
- collapse of excavation
- any event involving fire or explosion

Flash Report Email Format

The email message format shall contain the following information:

To: lynn.belanger@vancouver.ca, chris.dodd@vancouver.ca, calvin.lum@vancouver.ca, ken.fraser@vancouver.ca, hanna.musslick@vancouver.ca, kezi.nwaoha@vancouver.ca, jerry.sobejko@vancouver.ca, john.carabatsakis@vancouver.ca, kulwinderjit.jhaji@vancouver.ca, mike.budzik@vancouver.ca, laura.wydra@vancouver.ca (plus TLO Project Managers – to be determined) (plus any contract company person you wish to include)

Subject Line of Email: Flash report Level (Choose Significant, Serious or Extreme) – Title of Event

The body of the email shall include:

- Event description (very brief - rule of thumb 25 words or less) stating:
 - incident time
 - site location
 - no injury or injury with brief description
 - no damage or damage with brief description.
- Immediate Preventative Measures implemented and who is accountable
- Stakeholders called to scene (Emergency Services, Risk Management, Utility Owner)
- Public impacted Y/N and how
- Date of next update
- Contact name and number for person who can provide further information if needed

The following is an example of a Flash Report email.

To: lynn.belanger@vancouver.ca, chris.dodd@vancouver.ca, calvin.lum@vancouver.ca, amrti.pangli@vancouver.ca, ken.fraser@vancouver.ca, rob.weiss@vancouver.ca, jerry.sobejko@vancouver.ca, (TLO Project Managers – to be determined) (plus any contract company person you wish to include)

Subject: Flash Report - Significant - Existing Fibrous Conduit Exposed

Location: Transfer Station Rebuild Project
Date/ Time: Friday, 24 Mar 2017/5:00 pm
Type: Existing Fibrous Conduit Exposed at the new Recycling Area Project
Injury Type: None

Description: Super Big Construction Company exposed fibrous conduit during the process of excavation at the Transfer Station Recycling/Green Waste area. Super Big employees cordoned off the area with fencing to restrict access. CoV Environmental Services were contacted and instructed Super Big to ensure conduit was not disturbed. Environmental Services will attend on Monday, 27 March 2017 to sample the conduit for testing. Environmental Services is satisfied that no risk of exposure will occur for the public or workers.

Immediate Preventative Measures: Stopped work and removed workers from area. Cordoned off the area with fencing.

Stakeholders Involved: Super Big Construction Company, CoV employees

Public Impact: None

Next Planned Update: Monday, 27 Mar 2017

**John Super Big, Owner
Super Big Construction Company
604-020-0202**

If you have any questions about the use of the Flash Report, please contact:
Laura Wydra, TLO OHS Superintendent, 604-318-9039

CONTRACTOR SAFETY ABSOLUTES

I. Health & Safety Reporting

A contractor may use this template or their own reporting format which will include the following information on a minimum bi-weekly basis to TLO management or as agreed to.

Contractor				
Number of Sub Contractors				
Project				
Project Number				
Reporting Dates				
Year				
INJURY LAG INDICATORS				
Report Item	Contractor	Sub-Contractor	Total for Reporting Dates	Ongoing Project Total
Work hours	0	0	0	0
Number of Fatalities	0	0	0	0
Number of Lost Time Injury	0	0	0	0
Number of Medical Treatment	0	0	0	0
Number of First Aid Only	0	0	0	0
Number of Modified Duty	0	0	0	0
OTHER LAG INDICATORS				
Near Miss - potential for injury	0	0	0	0
WSBC Reportable Occurrence	0	0	0	0
Non-Occupational Incident	0	0	0	0
Environmental Incidents	0	0	0	0
Property Damage	0	0	0	0
Motor Vehicle Damage	0	0	0	0
Equipment Damage	0	0	0	0
Fire	0	0	0	0
Theft	0	0	0	0
Utility strike	0	0	0	0
LEAD INDICATORS				
Formal Inspections Completed	0	0	0	0
Crew Safety Talks Completed	0	0	0	0
Employee Orientations Completed	0	0	0	0
Incident Investigations Signed off by JHSC & Contractor Mgt	0	0	0	0
Ground Disturbance Permits Issued	0	0	0	0
Hot Work Permits Issued	0	0	0	0
Confined Space Permits Issued	0	0	0	0

**SCHEDULE 15
SUBMITTAL FORM TEMPLATE**



REVIEW BY:

**SCHEDULE 16
MATERIAL DISCLOSURE**

TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS

The City has made no independent inquiries to ascertain the existence or nature, of any toxic or hazardous material, substance or condition at the Site (which expressly includes the subsurface as well as the surface at the Site), and accordingly makes no representations regarding the same. Prior to the Contractor commencing the Work, and thereafter through the term of performance of the Work, the Contractor must take all reasonable steps to determine whether any toxic or hazardous material, substance or condition is present at the Site. If the Contractor encounters any toxic or hazardous material, substance or condition at the Site or has reasonable grounds to believe that any of the same are present at the Site, then the Contractor must promptly take all reasonable steps to ensure that no person suffers any injury, sickness or death and that no property is injured or destroyed as a result of exposure to or the presence of such material, substance or condition, and must immediately report the situation and circumstances to the City in writing. The Contractor must in all instances comply fully with all requirements of applicable environmental legislation, the City, the WCA and of WorkSafeBC, whether specifically outlined above in these Tender documents or not, applicable to toxic and hazardous materials, substances and work/work site conditions.

**SCHEDULE 17
SUMMARY OF SUBMITTALS**

Reference Number	Submittal Description
1	Construction Performance Bond
2	Proof of Insurance
3	Site-specific Health and Safety Plan
4	Site-specific Traffic Management Plan
5	Construction Master Plan
6	Construction Schedule
7	ABCLS Surveyor Information
8	Survey existing utilities, features, and ground surface
9	Survey for progress draws
10	Survey of as-builts for project records.
11	Phasing Plan for all Work in the vicinity of the wells that are in service
12	Aggregate and Soils Information, including Grain Size Analysis, Source Details, Permeability, etc.
13	Details and Contact for Independent Firm to perform inspection and testing
14	Geomembrane, Geogrid and Geotextile details and samples
15	Product name, supplier information, and shop drawings for Precast Concrete items
16	Shop Drawings for all Metal Fabrications
17	Design and supporting data for shoring, bracing and underpinning
18	HDPE Pipe and Fittings Manufacturer's Specifications
19	HDPE Pipe Welder Qualifications
20	HDPE Pipe Installer Qualifications
21	HDPE Pipe Fusion Procedures
22	HDPE Fabricated Fittings
23	HDPE Electro-Fusion Procedure

INVITATION TO TENDER NO. PS20220171
CONSTRUCTION SERVICES FOR 2021 GAS SYSTEM EXPANSION AND UPGRADES - VANCOUVER LANDFILL
SCHEDULE 17 - SUMMARY OF SUBMITTALS

24	Perf Pattern for all HDPE Pipes
25	CPVC Pipe Manufacturer's Specifications
26	CPVC Fittings Manufacturer's Specifications
27	CPVC Shop Fabricated Fittings
28	CPVC Pipe Installer Qualifications
29	Steel Casing for Road Crossings
30	Bolts, Washers, and Nuts
31	Bentonite for Vertical Gas Wells
32	LFG Pipe Purge Plans
33	PVC Flex Hose for Well Head Control Assemblies
34	Well Head Adapters and Riser Pipe Adaptors
35	Monitoring Devices
36	Detectable Tape and Tracer Wire
37	Pipe Support at Well Head Control Assemblies
38	Erosion Control items
39	Asphalt concrete and asphalt prime.
40	Hydraulic Seeding
41	QA/QC Documentation Package
42	Recommended Spare Part List
43	Warranties
44	Operation and Maintenance Data

If not otherwise noted in the Contract, allow at least ten (10) working days for review by the Engineer following receipt of the submittal by the Engineer. Each rejected or returned for revision version of submittals shall be subject to an additional ten (10) working days review period by the Engineer. The Contractor shall schedule the submittal delivery to allow for Engineer's review period including any potential revisions.

The above table shall not be considered a complete and exclusive list of required Submittals. The Contractor shall refer to Contract Documents for specific and comprehensive requirements.

**SCHEDULE 18
CASH FLOW FORECAST**

The forecast of cash flow shown below shall be used by the Owner for forecasting purposes only and not for payment or Contract Price purposes.

The forecast shall be on a monthly basis for the duration of the Contract. Each month's forecast cash flow represents the Contractor's estimate of the net value of its monthly progress claims. Retention money is included in the monthly net value shown, but is payable at the times stipulated in the Contract.

[To be added from Contractor's Tender.]

**SCHEDULE 19
CONTRACTOR'S KEY PERSONNEL**

Details of the Contractor's Key Personnel and its Sub-contractor's Key Personnel are set out below.

[To be added from Contractor's Tender.]

No Key Personnel listed in Schedule 19 shall be replaced without the written consent of the City, which consent shall not be unreasonably withheld.