



**REGIONAL DISTRICT
of Fraser-Fort George**

**INVITATION TO TENDER
ES-23-14**

**Landfill Gas System Equipment Upgrade
Foothills Boulevard Regional Landfill**

Date Issued: June 23, 2023

Closing Location: Regional District Office
3rd Floor, 155 George Street,
Prince George, BC V2L 1P8

Mandatory Site Meeting: June 28, 2023 at 9:00 am

Closing Date and Time: July 21, 2023
10:00 am (Pacific Standard Time)
No Public Opening

General Inquiries: Email Darwin Paton at dpaton@rdffg.bc.ca

Note: Late submissions will not be considered

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1.0 INVITATION AND INSTRUCTIONS

The Regional District of Fraser-Fort George invites tenders from experienced consulting firms for, procurement, installation, any required engineering and permitting services for the Landfill Gas System Equipment Upgrade at Foothills Boulevard Regional Landfill located within the RDFFG.

The goal of the project is to retain an experienced firm to provide procurement, installation, engineering and permitting services for the Landfill Gas System Equipment Upgrade at Foothills Boulevard Regional Landfill.

Deliverables will include but not be limited to, the procurement, installation, any engineering, and permitting of a multi stream gas analyzer(s) and panel mounted interactive display, Upstream pressure transducer, updating of the current Programmable Logic Control (PLC) Panels, programming of new installation to maintain the Operational Conditions, data acquisition, report generation and data storage, alarm and operational setpoints of the current plant. Acquiring all required permits and inspections. Record drawings and Operation and Maintenance manual upon completion of the project.

The successful Contractor is responsible for developing methodology outlining the specific steps required to meet the overall objectives of this project, and adhering to the following Scope of Work requirements:

1.1 Tender Documents

A complete set of construction drawings for the entire project is included with the tender package and will be available in the following formats on, or after, June 23, 2023 as follows:

- a) in a PDF (public document format) file format from the Regional District's website at www.rdffg.bc.ca;
- b) on the BC Bid® website at www.bcbid.gov.bc.ca;

All subsequent information regarding this Invitation to Tender (ITT), including amendments, addenda and answers to questions will also be available as above.

It is the sole responsibility of the Tenderer to ascertain that they have received a full set of the ITT documents. Upon submission of their tender document, the Tenderer will be deemed conclusively to have been in possession of a full set of the ITT documents.

Inquiries relating to this ITT must be made in writing by email to:

General and Technical Inquiries:

Darwin Paton, Environmental Services Technologist
Regional District of Fraser-Fort George
155 George Street
Prince George, BC V2L 1P8
Phone: (250) 960-4400
Email: dpaton@rdffg.bc.ca

1.2 Mandatory Site Visit

The Project Manager or delegate will provide an overview of the contract expectations and be available for general questions pertaining to this ITT. The purpose of this meeting is for the Tenderer to satisfy themselves as to the nature of the work, in general, to clarify their understanding of the scope of work, determine dimensions and to have clarified any questions regarding the attached Drawings and Specifications forming part of this Tender, and any other circumstances which may influence their Tender submission.



The Regional District will not, under any circumstances, make accommodations for rescheduling, or holding any additional site visits or providing individuals access to the sites.

The mandatory site visit will be held for all prospective Tenderers. The meeting is scheduled for 9:00 am on Wednesday, June 28, 2023 at the Foothills Boulevard Regional Landfill.

Tender submissions received from any Tenderer who did not attend the mandatory site meeting will be rejected.

1.3 Tender Submissions and Closing Date

Tenders must be in English and must be submitted using one of the submission methods below.

The Regional District will accept tenders submitted either by direct delivery or electronically to the Regional District main office. All tenders must be submitted to the Regional District's General Manager of Financial Services by 10:00 am (local time) on Friday, July 21, 2023.

Tenders submitted by fax will **NOT** be accepted. Any tender received after the closing date and time will be considered disqualified.

For Tenders being submitted by hard copy direct delivery:

Two (2) complete copies of your Tender must be submitted in a sealed envelope with the following information written on the outside of the envelope containing the tender, as well as on the outside of the courier envelope/box (if sending by courier):

1. Attention: General Manager of Financial Services
Regional District of Fraser-Fort George
3rd Floor, 155 George Street, Prince George, BC V2L 1P8
2. Invitation to Tender ES-23-14
Landfill Gas System Equipment Upgrade
Foothills Boulevard Regional Landfill
3. Responding Tenderer's name and address.

For Tenders being submitted Electronically with Bid Bond:

"Prince George Time" will be conclusively deemed to be the time indicated in the electronic timestamp the Tender receives upon delivery to the email address specified herein.

Other than the Bid Bond, Tenderers must submit all portions of their Tender by email in accordance with the following:

Subject Line to read: **ES-23-14 – Landfill Gas System Equipment Upgrade – FBRL - Insert Responding Tenderers Name**

All emailed documents must be in PDF format and should be in one combined file. Tenderers should ensure that the files should not collectively exceed 35MB. Submitting the files via Drop Box, FTP, or similar programs, is not acceptable.

Tenders must be submitted to purchasing@rdfg.bc.ca. Other than the **Bid Bond**, do not deliver a physical copy of the tender package to the Regional District of Fraser Fort George.



- The responsibility for submitting a response to this ITT to the correct email address on or before the closing date and time will be solely and strictly the responsibility of the bidder. Submissions sent to any email address other than the one identified above will not be accepted.

The Bid Bond must not be sent by email. The Bid Bond must be received by the General Manager of Financial Services, at the Regional District of Fraser-Fort George, 155 George Street, Prince George, BC on or before the Closing Date. The Bid Bond must be submitted in a sealed envelope with the following information written on the outside of the envelope containing the security deposit, as well as on the outside of the courier envelope (if sending by courier):

1. Attention: General Manager of Financial Services
Regional District of Fraser-Fort George
3rd Floor, 155 George Street
Prince George, BC V2L 1P8
2. Invitation to Tender, ES-23-14
Landfill Gas System Equipment Upgrade
Foothills Boulevard Regional Landfill
3. Responding Tenderer's name and address

To be considered, tenders must be signed by an authorized signatory of the tenderer. By signing the tender, the tenderer is bound to statements made in response to this ITT. Any tender received by the Regional District that is unsigned will be rejected.

Any tenders received after the closing date and time will be considered disqualified.

Tenders not submitted in strict accordance with these instructions or not complying with the requirements in this ITT may be rejected.

The Regional District will not be responsible for any costs incurred by tenderers as a result of the preparation or submission of a tender pertaining to this ITT. The accuracy and completeness of the tender is the tenderer's responsibility. Should errors in a tender be discovered, the tenderer shall be solely responsible for any additional costs incurred by that tenderer in the performance of the work and shall be solely responsible to correct any deficiencies or errors in that tender at their expense.

The lowest or any Tender will not necessarily be accepted. The Regional District of Fraser-Fort George reserves the right to accept or reject any or all Tenders. Any Tender received after the closing date and time will be considered disqualified and will be returned to the Tenderer.

1.4 Acknowledgement Letter

Upon receipt of this ITT, a potential tenderer is requested to complete and sign the Acknowledgement Letter and mail or email the signed Acknowledgement Letter to the Project Manager, Darwin Paton, at dpaton@rdffg.bc.ca

A tenderer who signs and returns the Acknowledgement Letter is not obligated to submit a tender.

Any tenderer who does not submit the Acknowledgement Letter will not be sent any amendments, addenda, or answers to questions and their tender may be disqualified if it is incomplete or non-compliant as a result of the tenderer's failure to acknowledge receipt of



an addendum in accordance with this ITT, or as a result of the tenderer's failure to comply with the requirements of an amendment or addendum to this ITT.

1.5 Regional District's Right to Reject Tender

The Regional District reserves the right, in its sole discretion, to waive informalities in tenders, reject any and all tenders, or accept the tender deemed most favourable in the interests of the Regional District. The lowest, or any tender, will not necessarily be awarded.

Tenders which contain qualifying conditions or otherwise fail to conform to the instructions contained in this ITT may be disqualified or rejected. The Regional District may, however, in its sole discretion, reject or retain for its consideration tenders which are non-conforming because they do not contain the content or form required by the ITT, or for failure to comply with the process for submission set out in this ITT, whether or not such non-compliance is material.

The Regional District reserves the right to reject a tender based on potential or perceived conflict of interest on the part of a tenderer. Without limitation, the Regional District reserves the discretion to reject any tender where:

- a) one or more of the directors, officers, principals, partners, senior management employees, shareholders or owners of the tenderer, is an officer, employee or director of the Regional District, or is a member of the immediate family of an officer, employee or director of the Regional District; or
- b) in the case of a tender submitted by a tenderer who is an individual person, where that individual is an officer, employee or director of the Regional District, or is a member of the immediate family of an officer, employee or director of the Regional District.

When submitting a tender, the respondent is required to complete, sign, and include with their proposal a Conflict of Interest Disclosure Statement (page CONFLICT OF INTEREST DISCLOSURE STATEMENT28).

The Regional District reserves the right to reject any tender submitted by a tenderer who is, or whose principals are, at the time of tendering, engaged in a lawsuit against the Regional District in relation to work similar to that being tendered.

1.6 Waiver of Claims for Compensation

Except for a claim for the reasonable cost of preparation of its tender, by submitting a tender, each tenderer irrevocably waives any claim, action, or proceeding against the Regional District including, without limitation, any judicial review or injunction application, and any claim against the Regional District and its elected officials, officers and employees for damages, expenses or costs, loss of profits, loss of opportunity or any consequential loss for any reason, including any such claim, action or proceeding arising from:

- 1) any actual or alleged unfairness on the part of the Regional District at any stage of the tender process, including without limitation any alleged unfairness in the evaluation of a tender or award of a contract;
- 2) a decision by the Regional District not to award a contract to that tenderer; or
- 3) the Regional District's award of a contract to a tenderer whose tender does not conform to the requirements of this ITT.



1.7 Proof of Ability

Tenderers must be competent and capable of performing the work as described in the Scope of Work and Specifications. The tenderer is required to provide evidence of previous experience and financial responsibility before a contract is awarded.

1.8 Sub-Contractors

The List of Sub-Contractors is to be completed by the tenderer and will form part of the contract documents. The sub-contractors named in the List of Sub-Contractors will not be changed nor will additional sub-contractors be employed except with the written approval of the Regional District.

The Contractor is responsible to the Regional District for the acts and omissions of their sub-contractors to the same extent that they are responsible for the acts and omissions of persons employed by them. Nothing in the contract documents will create any contractual relation between any sub-contractor and the Regional District. The Contractor will bind every sub-contractor to the terms of the contract documents.

1.9 Discrepancies or Omissions

Tenderers finding discrepancies, errors, or omissions in this ITT, or requiring clarification on the meaning or intent of any part therein, should immediately request in written form by email to Darwin Paton, dpaton@rdffg.bc.ca. Upon receipt of the written request for clarification, the Project Manager will send written instructions or explanations to all parties registered as having returned the Acknowledgement Letter. The Regional District will not accept responsibility for any damages, costs or expenses incurred by a tenderer in reliance on oral instructions. Any work done in preparation of a tender after discovery of discrepancies, errors or omissions in the ITT will be done at the tenderer's risk unless the discrepancy, error or omission is reported to the Project Manager in accordance with this provision.

NOTE: The last day that requests for clarification or inquiries may be made is Wednesday, July 5, 2023 at 5pm (local time) in order that addenda, if necessary, are issued in time for all tenderers to complete their submission and have it delivered to the Regional District office prior to the closing time and date of the ITT. After July 5, 2023, should changes be necessary to the work of this ITT, they will be addressed through Part 6 of the General Conditions, Changes to the Contract Work.

1.10 Examination of Contract Documents and Site

The Contractor will satisfy themselves as to the practicability of executing the work in accordance with the Contract, and they will be held to have satisfied themselves in every particular before making up their Tender by inquiry, measurement, calculation and inspection of the site.

The Contractor will examine the site and its surroundings and, before submitting their Tender will satisfy themselves as to the nature of the site, the quantities and nature of the work and equipment necessary for the completion of the work, and the means of access to the site, the accommodation they may require, and in general, will obtain all relevant information as to risks, contingencies and other circumstances which may influence their Tender.

The Contractor will be deemed to have satisfied themselves as to the sufficiency of the Tender for the work and the prices stated in the Schedule of Prices. These prices will cover all their obligations under the Contract, and all matters necessary to the proper completion and maintenance of the work, and will include the Supply of all labour, equipment, material, supervision, services, taxes



and assessments, together with the Contractor's overhead and profit, except where otherwise provided elsewhere in this Contract.

1.11 Site Location and Facility Information

The Foothills Boulevard Regional Landfill is located at 6595 Foothills Boulevard, Prince George, BC.

2.0 TENDER FORMAT

Tenderers are asked to respond in the manner outlined in Section 1.3: Tender Submissions and Closing Date. The following format and sequence, with all pages consecutively numbered, is to be followed in order to provide consistency in tenders and to ensure each tender receives full and complete consideration.

- a. Tenderers will complete pages 21 through 28:
 - Tender Form: to be completed, signed, and witnessed
 - Schedule of Prices: the Schedule of Prices must be completed and included in the tender submission. All prices for the work shall be stated in Canadian dollars. Taxes are to be shown as separate line items on the Schedule of Prices. Any applicable Federal or Provincial taxes, or levies, must be included in the Total Contract Price
 - List of Sub-Contractors: to include sub-contractor's legal name and the work to be performed by the sub-contractor
 - Tenderer's Experience in Similar Work
 - List of Equipment to be installed
 - Goods and Services Tax Information
 - Conflict of Interest Disclosure Statement
 - All amendments and addenda, if any, issued for this ITT. Each amendment and addendum must be signed by the proponent and included with the proposal and will form part of the proposal and contract documents
- b. Additional information that the tenderer may choose to provide.
- c. All amendments and addenda, if any, issued for this ITT. Each amendment and addendum must be signed by the tenderer and included with the tender and will form part of the tender and contract documents.

3.0 TENDER EVALUATION

Evaluation of tenders will be by a committee formed by the Regional District in order to provide a recommended award of contract (the "Contract"). Tenders should be clear, concise, and complete.

The following tender evaluation methodology will be used by the committee to evaluate the tenders received:

- a. Tenderer's Qualifications and Experience 20 points

The length and quality of experience of:

- The person named in the tender as the tenderers project manager
- The tendering firm's experience in doing similar projects
- The team, with hours allocated by the tenderer, to work on this project

- b. Methodology 40 points

This includes the evaluation of:



- The thoroughness of the project approach, reflected in the work plan and project schedule
- The level of effort reflected in total work hours and assignments of the team developed to complete the project
- The timing of project tasks, milestones, and phases and how each will be completed
- The inclusion of project management pillars including how the consultant will address potential cost overruns, time management to meet each task and the risk factors involved in such a project that might affect the project's completion
- A plan outlining how the project will stay on budget and schedule

c. Project Budget 30 points

This includes:

- The amount of detail given to project relevant line items and the overall proposed project costs.
- The inclusion of any potential cost overruns, including additional public meetings, board presentations and additional consultation required to complete the project

d. Quality of Tender, including format 10 points

This includes:

- Does the submission follow the directions within the tender call and layout?
- Is the tender submission neat, easy to read, and address all areas of the proposal call thoroughly?

The total scoring for each proposal will be out of 100 points

Where tender prices are the same, the Regional District will consider the tenderer's experience in similar work beyond the minimum standards established in this ITT.

Throughout the evaluation process, the Regional District, at its sole discretion, may request additional written clarification and/or supplemental information from selected tenderers as part of the evaluation process. Notwithstanding the results of the evaluation conducted by the committee, the Regional District reserves the right to select the tender that the Regional District considers provides best overall value.

4.0 CONTRACT

4.1 Form of Contract

The form of contract will be similar to the sample contract on page 29 and will include this ITT, Instructions to Tenderers, Tender Form, List of Sub-Contractors, Tenderer's Experience in Similar Work, Schedule of Prices, all appendices, amendments, and addenda, and the successful Tenderer's submission. The Regional District reserves the right to negotiate the terms and conditions of the contract with the tenderer whose tender is selected following the evaluation process referred to in Section 3.0 of this ITT.

4.2 Award of Contract

A contract for ES-23-14 ("Landfill Gas System Equipment Upgrade - Foothills Boulevard Regional Landfill") is anticipated to be awarded no later than August 17, 2023. All tenderers will be advised, in writing, as to the awarding of the Contract.

The Regional District may, in its sole discretion, award the Contract for the Landfill Gas System Equipment Upgrade - Foothills Boulevard Regional Landfill, or it may delay the date of awarding the Contract or cancel this ITT if deemed appropriate by the Regional District for any reason.



The tenderer awarded the Contract ("Contractor"), will have seven (7) calendar days to provide the required proof of insurance under Section 12.0: INSURANCE and proof of WorkSafeBC coverage under Section 13.0: WORKSAFEBC, upon notification that the Regional District has accepted its tender.

5.0 TERM OF CONTRACT

The term of the Contract will begin on September 1, 2023 at 12:01 a.m. and the Contract will remain in force until midnight February 28, 2024. The Contract may be extended on a period-by-period basis at the Regional District's discretion for up to 1 (one) year. The period of extension shall be as per the pricing, terms and conditions as originally tendered.

6.0 TERM AND TERMINATION

The term of this Contract shall commence as set out in Section 5.0: TERM OF CONTRACT and shall continue in effect until terminated by either party as provided herein. Either party may terminate this Agreement at any time, with or without cause, by providing not less than thirty (30) business days advance written notice to the other party. The Contractor or the Regional District may terminate this Agreement immediately in writing if either party becomes insolvent, enters bankruptcy, receivership, or other like proceeding (voluntary or involuntary) or makes an assignment for the benefit of creditors.

7.0 BID PRICES

Tender prices must remain open for acceptance for a period of sixty (60) days from the time of Tender opening (Friday, July 21, 2023) unless otherwise stated by the Regional District.

Tenders will be evaluated on the ability of the Tenderer to comply with Contract requirements, the Tendered Price and experience as stated in Section 3.0: TENDER EVALUATION. Where bid prices are the same, the Regional District will consider experience in similar work beyond the minimum standards established in the Contract as well as a construction schedule that can meet the strict timeline.

The Regional District of Fraser-Fort George will not be responsible for any costs incurred by the respondent which may result from the preparation or submission of documents pertaining to this Tender.

8.0 BONDING

8.1 Bid Bond:

The tender must be accompanied by a Bid Bond in an amount of ten percent (10%) of the total tendered price.

The Bid Bond must be issued by a Surety Company licensed to conduct business in the Province of British Columbia wherein the work is located.

If the successful bidder fails, for any reason, to execute the Contract, the portion of this Bid Bond will be forfeited to, and retained by, the Regional District of Fraser Fort George, in the amount for which the Regional District may legally contract with another party to perform the work, if the latter amount be in excess of the former.

The Bid Bonds submitted by unsuccessful bidders will be returned to them, without interest, as soon as the successful bidder has delivered, to the Regional District, a fully executed Contract for the work, or the period for which bids are irrevocable has elapsed, whichever shall happen first.



9.0 PAYMENT

The Regional District will, by the thirtieth (30th) day of the month following that for which payment is required on receipt of an invoice and on advice from the Manager that the Work has been satisfactorily carried out, pay the Contractor for Work completed in accordance with the Contract in the previous month. No payment will be made for materials supplied by the Regional District.

Payment will be made in accordance with the Schedule of Prices for actual quantities of completed Work.

If a Contract is awarded, invoices should be submitted monthly to financialservices@rdffg.bc.ca and should include at a minimum:

- a. Project document name and contract number
- b. Regional District contact full name (First and Last)
- c. Contractor contact information (name and phone number)
- d. GST number
- e. WCB number
- f. Detailed description of work performed
- g. Applicable taxes shown as separate line item
- h. Receipts attached for travel expenses

No payment will be made for materials supplied by the Regional District.

10.0 PAYMENT WITHHELD OR DEDUCTED

The Regional District may withhold, suspend or deduct the whole or part of any payment to the Contractor to the extent necessary to protect themselves from loss on account of one or more of the following:

- a) That the Contractor is not performing the Work satisfactorily.
- b) Where any defective or faulty Work or damage to the Regional District's facilities and equipment has not been remedied.
- c) Where there are affidavits (or an affidavit) of claim of lien, of liens (or a lien) filed, against the site and premises of which the Work is done or is being done, or reasonable evidence of the probable filing of such affidavits (or an affidavit) of claim of lien or of filing or registration of liens (or a lien).
- d) The Regional District has corrected under Section 22.0: REGIONAL DISTRICT'S RIGHT TO CORRECT DEFICIENCIES.

11.0 GOODS AND SERVICES TAX (G.S.T.)

Federal law states that five percent (5%) tax be paid on all goods and services. If the Contractor does not qualify as a small supplier, then the Contractor is required to identify the tax (GST/PST, as applicable) on all invoices and the Regional District is liable to pay this amount to the Contractor.

12.0 INSURANCE

The Contractor shall, without limiting its obligations or liabilities, and at its own expense, provide and maintain throughout the Contract term, the following insurance with insurers licenced in the Province of British Columbia, in forms acceptable to the Regional District. All required insurance



(except automobile insurance on vehicles owned by the Contractor) shall be endorsed to show the Regional District as additional insured and to require that the Regional District be provided with thirty (30) days' advance written notice of cancellation or material change. The Contractor will provide the Regional District with evidence of the required insurance, in a form acceptable to the Regional District, upon notification of award and prior to the execution and delivery of the Contract:

- i. Commercial General Liability (CGL) in an amount not less than \$5,000,000 inclusive per occurrence insuring against bodily injury and property damage and including liability assumed under the Contract. Such CGL coverage shall include the following liability extensions: Contingent Employers Liability, Broad Form Products & Completed Operations, Personal Injury, Blanket Contractual, and Cross Liability. The Regional District is to be added as an additional insured.
- ii. Where the Contractor requires the use of Automobiles to undertake the work of the Contract, the Contractor will have the following:
 - a. Automobile Liability on all vehicles owned, operated, or licenced in the name of the Contractor in an amount not less than \$2,000,000 per occurrence.
 - b. Non-owned Automobile Liability insurance in an amount not less \$2,000,000 per occurrence.
- iii. Equipment insurance on all equipment owned or rented by the Contractor to its full insurable value.

The Contractor shall ensure that all sub-contractors forming from this Contract meet the insurance requirements outlined above.

It is the sole responsibility of the Contractor to determine if additional limits of liability insurance coverage are required to protect them from risk.

13.0 WORKSAFEBC

The Contractor will use due care and take all necessary precautions to assure the protection of persons or property at the Facilities and will comply with the Workers' Compensation Act of the Province of British Columbia.

Prior to undertaking any of the Work in this Service Agreement, the Contractor will provide the Regional District with a Clearance Letter confirming they are in good standing with WorkSafeBC and will pay and keep current all assessments required by WorkSafeBC in relation to the Service Agreement amount.

Out of Province Contractors will be compliant with WorkSafeBC's registration requirements pertaining to out of Province firms. Where WorkSafeBC registration requirements allow for a Contractor to be registered with another Province's Worker's Compensation Board, or like organization, the Contractor will provide the Regional District with their registration number and written documentation confirming that the Contractor is in good standing with the appropriate Worker's Compensation Board, or like organization. The Contractor will pay and keep current all assessments required to maintain good standing in relation to the Service Agreement amount.

The Contractor will maintain an Occupational Health and Safety Plan (OHSP) and ensure that their employees and sub-contractors are well trained and aware of OHSP

14.0 OWNERSHIP AND FREEDOM OF INFORMATION

Tenders will be received and held in confidence by the Regional District, subject to the provisions of the *Freedom of Information and Protection of Privacy Act* and this ITT. Each tender should clearly identify any information that is considered to be confidential or propriety information.



Tenderers are responsible to review the *Freedom of Information and Protection of Privacy Act* for further information.

All documents, including tenders, submitted to the Regional District become the property of the Regional District. The Regional District will provide a debriefing for tenderers, upon request by a tenderer, subject to the *Freedom of Information and Protection of Privacy Act*.

15.0 RIGHTS OF WAIVER

A waiver, or any breach of any provision of this ITT will not constitute or operate as a waiver, or any other breach, of any other provisions, nor will any failure to enforce any provision herein operate as a waiver of such provisions or of any other provisions.

16.0 SUB-CONTRACTORS

The sub-contractors named in the Tender Form will not be changed nor will additional sub-contractors be employed except with the written approval of the Regional District. The Contractor is responsible to the Regional District for the acts and omissions of their sub-contractors and of their workers to the same extent that they are responsible for the acts or omissions of the Contractor's workers. Nothing in the Contract Documents will create any contractual relations between any sub-contractor and the Regional District. The Contractor will bind every sub-contractor to the terms of the Contract Documents.

17.0 PURPOSE

17.1 Overview

The current LFG System Operating System was installed 2002. The Regional District requires the upgrading of the landfill gas inline instrumentation and system processing equipment. This upgrade is to be compliant with all applicable Local, Provincial, Federal, regulations and legislation along with all applicable specific safety guidelines.

Based on the existing operational philosophy, the successful bidder will provide the various services required to successfully complete the upgrading of the landfill gas inline instrumentation and system processing equipment. Tasks will include (but not be limited to) Instrumentation selection, (based on supplied specifications), any upgrading of existing conduits or piping to support appurtenances now required by legislation and/or regulation. Upgrading of the existing PLC panels to support and incorporate a panel mounted integrated workstation. Maintaining of the LFG systems current Operational Philosophy in relation to safety and operational setpoints.

Supply all required detailed plan development documentation, process diagrams, permits and documentation in relation to the instrumentation and system upgrades both during and upon completion of the project. Complete all installation and commissioning activities in adherence to best industry practices and standards. Provide record drawings upon completion of the project, all permits, approvals and accompanying operation and maintenance manuals.

The successful bidder will have a team of qualified professionals with expertise in Instrumentation and Process technologies and implementation and commissioning of related systems. Extensive knowledge of the British Columbia Landfill Gas Management Regulation, Process Instrumentation and Systems Operation and all related safety regulations. Demonstrated application of successful similar projects preferably in British Columbia in northern settings are required for this project.

17.2 Background



The Foothills Boulevard Regional Landfill has been in operation since 1975. The original Landfill Gas System was installed voluntarily in 2002 and has been successfully operated out for the last 20 years undergoing expansions, adjustments, and modifications during that time. Between 2011 and 2015 the Regional District successfully had both the quality and quantity of the Landfill Gas validated and verified to international standards, attesting to accuracy of the claimed Greenhouse Gas Emission reductions. The focus and collection of the landfill gas system since that time has been on the development of a landfill gas utilization program. Proposed upgrades as outlined in this Invitation to Tender are intended to help the Regional District achieve that goal.

The following documents have been identified as relevant to this project:

1. Current LFG Abstraction Plant Overview
2. Operational Philosophy
3. Current instrumentation layout
4. Current Electrical supply schematic
5. Site Survey

The following documents will be made available to the successful proponent once the contract is awarded:

System Electrical Record Set.
Current PLC Ladder Logic
Operational Philosophy
VFD and Blower information
Flare specifications
Flare Start up Procedure
Setpoint Information

18.0 SCOPE OF WORK

Scope of Work will include, but not be limited to, the following:

Multi-stream Gas Analyzer(s) and Displays

The Contractor will supply and install a multi-stream gas analyzer, for the logging and recording of Methane (CH₄), Carbon Dioxide (CO₂), Oxygen (O₂) with Nitrogen (N₂) inference. The ability to expand to the recording of Hydrogen Sulfide (H₂S) would also be a consideration. All installed instrumentation will have the manufacturer attested accuracy of plus(+) or minus(-) one (1) percent where possible, two (2) percent accuracy, the maximum allowable for all critical gases. -

Display screen(s) for gas stream shall be at point of recording and remote, with the remote screen being panel mounted and interactive.

Display Screens, (remote interface) will have the ability to log, store, record and export all incoming data streams off site automatically and on command. On site storage of this data stream will be ongoing with a 60 GB or larger capacity. All data downloaded shall be compatible with current Industry standard software programs and of producing CSV or other specified file formats. Streaming, data to off-site will be required. Wireless network capability will be expected.

Programable Logic Controls (PLCs)

The contractor shall supply and install programable logic control arrays while maintaining the existing operational philosophy and safety protocols of the current Landfill Gas Abstraction Plant and Enclosed Flare. The ability to program for different system and/or flare configurations will be



required of any proposed programming. This will include all current system alarms, faults, and failure setpoints along with the continuous monitoring of all required operational appurtenances and/ parameters. These include but are not limited to:

- a. Environmental Safety Monitors and Fire Alarm
- b. Environmental Safety Fans
- c. System Power Requirements, MCC and Non-Essential Bus operations
- d. Enclosed Flare Operational Philosophy
- e. System Air Pressure Requirements
- f. Gas Stream Composition Requirements
- g. System Flow Requirements (see C)
- h. System Temperature Requirements (see C)
- i. Thermal Monitoring Requirements (see C)
- j. Variable Frequency Drive(s) Operation and Automation

Note: All Current Safety and Operational Regulatory and/or Legislative Requirements must be met.

Upstream Pressure Transducer

The Contractor shall supply and install one (1) digital pressure transducer at a specified port. The pressure transducer shall be capable of recording in various units, have a digital display, with data being integrated into the remote interface Display screen.

Permits and Inspections

The contractor will acquire all permits and have all required inspections carried out to complete and recommission the Landfill Gas System.

Other Associated Deliverables

The Contractor will submit project record drawings, 2 hard copy and 1 electronic and an Operation and Maintenance manual, (two copies) upon completion of the project.

19.0 LOCAL CONDITIONS

The Contractor will, at the Mandatory Site Meeting, by personal inspection, examination, calculations or tests, or by any other means, satisfy themselves with respect to the local conditions to be encountered and the quantities, quality and practicability of the Work and of their methods of procedure. No verbal agreements or conversations with any officer, agent or employee of the Regional District, either before or after the execution of the Contract, will affect or modify any of the terms or obligations herein contained.

Access to the site will only be allowed at the time of the site meeting.

20.0 REGIONAL DISTRICT'S TERMINATION OF CONTRACT

In the event of the breach or non-performance by the Contractor of any of the covenants, conditions, and agreements contained in the Contract to be performed, the Regional District reserves the right to terminate this Contract without notice. The Regional District may also deduct from the payments due to the Contractor any payments or expenditures it is required to make to remedy any such non-performance or breach hereof.

21.0 CONTRACTOR'S TERMINATION OF CONTRACT



The Contractor shall have the right to terminate the Contract in the event the Regional District fails to pay for the Work performed except as provided in the Contract Documents, within thirty (30) days from the specified date of payment and fails to remedy such default within ten (10) days of the Contractor's written notice to do so.

22.0 REGIONAL DISTRICT'S RIGHT TO CORRECT DEFICIENCIES

The Regional District shall have and retain full authority to inspect the work of the Contractor to ensure that the requirements of the Contract are being fulfilled. Upon failure of the Contractor to perform the work in accordance with the Contract Documents, and after five (5) days written notice to the Contractor, or without notice if any emergency or danger to the work or public exists, the Regional District may, without prejudice to any other remedy they may have, correct such deficiencies. The cost of work performed by the Regional District in correcting deficiencies shall be paid by the Contractor or may be deducted from monies payable to the Contractor.

23.0 DISPUTE RESOLUTION

If a claim, dispute, or controversy arises out of or relates to the interpretation, application, enforcement, or performance of services under this agreement, the Contractor and the Regional District agree first to try in good faith to settle the dispute by negotiations between the Contractor and the Regional District. If such negotiations are unsuccessful, the Contractor and the Regional District agree to attempt to settle the dispute by arbitration if both parties agree. If the dispute cannot be settled through arbitration, the Contractor and the Regional District may agree to attempt to settle the dispute through good faith mediation. If the dispute cannot be resolved through mediation and unless otherwise mutually agreed, the dispute shall be settled by litigation in an appropriate court in the Province of British Columbia.

24.0 GOVERNING LAWS

This Contract shall be governed and construed in accordance with the laws of the Province of British Columbia.

25.0 FORCE MAJEURE

If either the Contractor or the Regional District are prevented from performing their obligations under the Contract, or where the Regional District's work in respect of which the Contractor is providing Services cannot be performed, because of an act of God, an act of a legislative, administrative or judicial entity, fire, flood, labour strike or lock-out, epidemic, unusually severe weather, or other similar cause outside of the control of the Parties (collectively "Force Majeure"), then the obligations of the Contractor and the Regional District under the Contract shall be suspended for so long as the condition constituting Force Majeure continues. The Party affected by Force Majeure shall provide the other Party with notice of the anticipated duration of the Force Majeure event, any actions being taken by the Party providing notice to avoid or minimize the effect of the Force Majeure event, and shall make reasonable efforts to remove or mitigate the effects of the condition constituting Force Majeure. Upon the termination of the Force Majeure event, the Regional District shall grant to the Contractor a time extension for performance of any milestone dates required as part of the Services as may be agreed with the Contractor or, if the Regional District and the Contractor are unable to reach agreement, as determined by the dispute resolution process under Section 23.0 of the Contract. Where, as a result of Force Majeure, there is a material increase in the Contractor's cost of or the time required for the performance of the Services that is not offset by a decrease in cost, then the Regional District shall increase the amount of the service fee payable to the Contractor under Section 9.0 of this Agreement, as may be agreed by the Contractor, or as determined under Section 23.0 of the Contract. If the event of Force Majeure results in a material increase in the cost of the work to be performed in respect of which the Contractor is providing the Services, then the Regional District may choose not to proceed with the



completion of the work and may terminate this Agreement. If the Regional District terminates this Agreement following the termination of the Force Majeure event, then it shall compensate the Contractor in accordance with Section 6.0 of this Agreement.

26.0 NOTICE OF PROTEST

TO: General Manager of Environmental Services
Regional District of Fraser-Fort George

FROM: (Contractor)

DATE:

SUBJECT: THE CONTRACT

Date of Direction:

You have required me to perform the following work that is beyond the scope of the Contract.
(Set out details of work).
(Include dates where applicable)

The additional costs and claim for this work is as follows:
(Set out details of cost)

All supporting documentation and invoices are attached.

I understand that I am required to keep accurate and detailed cost records which will indicate the cost of the work done under protest and failure to keep such records will be a bar to any recovery by me.

Signature of Contractor



ACKNOWLEDGEMENT LETTER

The undersigned has received a full set of ITT ES-23-14 Landfill Gas System Equipment Upgrade – Foothills Boulevard Regional Landfill

Authorized Signatory Signature

Name of Tenderer

Name (Please print)

Address

Title

City, Province, Postal Code

Phone Number

Email

Date

I/We presently intend ☐ to provide ☐ not to provide a Tender.

Please return immediately by email to:

Darwin Paton, Environmental Services Technologist
Regional District of Fraser-Fort George
155 George Street
Prince George, BC V2L 1P8
Telephone: 250-960-4400
Fax: 250-562-8676

Email: dpaton@rdffg.bc.ca

TENDERER CHECKLIST

Before submitting your Tender, check the following points:

- ☐ Has the Bid Bond requirement been met?
- ☐ Did you attend the Mandatory Site Meeting?
- ☐ Have you submitted the Acknowledgement Letter?
- ☐ Has the Tender Form been signed and witnessed?
- ☐ Has the Schedule of Prices been completed and signed?
- ☐ Has the List of Sub-Contractors been completed?
- ☐ Has the Tenderer's Experience in Similar Work been completed?
- ☐ Has the List of Equipment been completed?
- ☐ Has the Goods and Services Tax Information been completed?
- ☐ Has the Conflict of Interest Disclosure Statement been completed?
- ☐ Are all amendments and/or addenda, if any, included and signed?
- ☐ Have you included two (2) complete copies of your tender submission?
- ☐ Is the submission enclosed in a fully labelled **sealed** envelope?
- ☐ Are the tender submission envelope and the courier envelope both labelled fully?

Note: Your tender may be disqualified if ANY of the applicable foregoing points have not been complied with.

Two (2) complete copies of your Tender must be submitted in a sealed envelope with the following information written on the outside of the envelope containing the tender, as well as on the outside of the courier envelope/box (if sending by courier):

- ☐ Attention: General Manager of Financial Services
Regional District of Fraser-Fort George
3rd Floor, 155 George Street
Prince George, BC V2L 1P8
- ☐ Invitation to Tender ES-23-14
Landfill Gas System Equipment Upgrade
Foothills Boulevard Regional Landfill
- ☐ Tenderer's name and address



TENDER FORM

Date: _____

Regional District of Fraser-Fort George
3rd Floor, 155 George Street
Prince George, BC V2L 1P8

ATTENTION: General Manager of Financial Services

Dear Sir/Madam:

Having carefully examined the Instructions to Tenderers, Form of Tender, Bid Bond, Contract Agreement, General Conditions of Contract and Operational Specifications and subsequent written addenda (if any), and having visited the site(s) for purposes of examining site conditions and having become familiar with all conditions that affect the execution of the work, and being satisfied as to the sufficiency of the Tender, the undersigned agrees to furnish all labour, equipment, materials, supervision and services and do all Work necessary for and reasonably incidental to the Landfill Gas System Equipment Upgrade at the Foothills Boulevard Regional Landfill as specified, in accordance with the contract documents.

I/We agree that in consideration of having my/our tender submission considered for the Total Contract Price as shown on the Schedule of Prices, this price is open for acceptance for sixty (60) days from the date of the tender opening and will not be withdrawn during that period of time.

It is understood that payment will be made for the work on the basis of the awarded Contract only and that any approved extras or refunds will be made by mutual agreement between the Regional District and me/us.

I/We agree that the sub-contractor(s) employed will be as listed on the List of Sub-Contractors and further agree that no changes or additions will be made to the list without written approval of the Regional District.

If I am/we are notified in writing of the acceptance of our tender, I/we agree that within fourteen (14) days of the date of the acceptance notice I/we will enter into a contract and execute an agreement for the stated sum in the form of the specimen submitted to guarantee completion of the contract in accordance with the contract documents and within the time stated in the Tender documents.

I/We agree that the Regional District reserves the right to waive informalities in tenders, reject any or all tenders, or accept the tender deemed most favourable in the interests of the Regional District.

I/We agree that tenders which contain qualifying conditions or otherwise fail to conform to the instructions contained in this ITT may be disqualified or rejected. I/We agree that the Regional District may, however, in its sole discretion, reject or retain for its consideration tenders which are non-conforming because they do not contain the content or form required by the ITT, or for failure to comply with the process for submission set out in the ITT, whether or not such non-compliance is material.

I/We agree that except for a claim for the reasonable cost of preparation of this tender, by submitting a tender, I/We irrevocably waive any claim, action, or proceeding against the Regional District including, without limitation, any judicial review or injunction application, and any claim against the Regional District and its elected officials, officers and employees for damages, expenses or costs, loss of profits, loss of opportunity or any consequential loss for any reason, including any such claim, action or proceeding arising from:



- 1) any actual or alleged unfairness on the part of the Regional District at any stage of the tender process, including without limitation any alleged unfairness in the evaluation of a tender or award of a contract;
- 2) a decision by the Regional District not to award a contract to that tenderer; or
- 3) the Regional District's award of a contract to a tenderer whose tender does not conform to the requirements of this ITT.

I/We hereby acknowledge receipt and inclusion of the following addenda to the ITT Documents:

Addendum No. _____ dated: _____ Addendum No. _____ dated: _____

Addendum No. _____ dated: _____ Addendum No. _____ dated: _____

Addendum No. _____ dated: _____ Addendum No. _____ dated: _____

Signed and Delivered by:

Signature of Authorized Signatory

Name of Tenderer

Name of Authorized Signatory (Please print)

Address

Title

City, Province, Postal Code

Signed in the presence of:

Signature

Address

Name of Witness (Please print)

City, Province, Postal Code



TENDER FORM SUMMARY

<u>TENDER FORM SUMMARY</u>	<u>Price</u> <u>(excluding taxes)</u>
<u>Schedule of Prices</u>	\$ _____
GST as applicable	\$ _____
<u>TOTAL TENDER PRICE – INCLUDING GST</u>	\$ _____

SCHEDULE OF PRICES

The Regional District requires the upgrading of the landfill gas inline instrumentation and system processing equipment. The Contractor will provide the various services required to successfully complete the upgrading of the landfill gas inline instrumentation and system processing equipment. This upgrade is to be compliant with all applicable Local, Provincial, Federal, regulations and legislation along with all applicable specific safety guidelines. will include but not be limited to, the procurement, installation, any engineering, and permitting of a multi stream gas analyzer(s) and panel mounted interactive display, Upstream pressure transducer, updating of the current Programmable Logic Control (PLC) Panels, programing of new installation to maintain the Operational Conditions, data acquisition, report generation and data storage, alarm and operational setpoints of the current plant. Acquiring all required permits and inspections. Record drawings and Operation and Maintenance manual upon completion of the project.

The prices tendered shall be in Canadian funds and include duties, royalties, handling, transportation, mobilization and demobilization, overhead, profit and all other charges except the Goods and Services Tax, which is to be extra.

TENDER PRICE		
	Unit	Unit Price (GST Extra)
A) Multi-stream Gas Analyzer(s) and panel mounted interactive display.	Lump Sum	\$
B) Upstream Pressure Transducer	Lump Sum	\$
C) Upgrade to Programable Logic Control Panels	Lump Sum	\$
D) Programing of new installation to maintain the Operational Conditions, data acquisition, report generation and data storage, alarm and operational setpoints of the current plant.		\$
E) Installation of A, (includes all appurtenances, materials, and Labour).		\$
F) Installation of B, (includes all appurtenances, materials, and Labour).		\$
G) Installation of C, (includes all appurtenances, materials, and Labour).		\$
H) System Permitting		\$
I) System Commissioning		\$
J) Record drawings and Operation and Maintenance Manual.		\$
SUB-TOTAL, (A through J)		\$
Taxes, (GST)		\$
TOTAL TENDER SUM		\$



LIST OF CONTRACTOR'S PERSONNEL

The Contractor agrees that the personnel employed by them will be as listed below and further agrees that any changes or additions made to this list will be made in writing to the Regional District.

Name of Employee	Position (Job Title)	Employee's Experience / Qualifications

LIST OF SUB-CONTRACTORS

The Contractor agrees that the Sub-contractors employed by them will be as listed below and further agrees that no changes or additions will be made to their list without the written approval of the Regional District.

Name of Sub-Contractor	Address of Sub Contractor	Work to Be Performed by Sub-Contractor



TENDERER'S EXPERIENCE IN SIMILAR WORK

(within the last three years)

Year	Work Performed	Reference Contact (name and phone number)	Value

PRELIMINARY WORKS SCHEDULE

INDICATE SCHEDULE WITH BAR CHART WITH MAJOR ITEM DESCRIPTIONS AND TIME

MILESTONE DATES _____

ACTIVITY	CONSTRUCTION SCHEDULE									
	1	2	3	4	5	6	7	8	9	10



GOODS AND SERVICES TAX INFORMATION

Supplier:

Name

Address

City

Province

Postal Code

Phone Number

Are you a GST Registrant?

Yes _____

No _____

If YES, please indicate your registration number: _____

If NO, Please fill in the following (check appropriate box):

☐ Supplier qualifies as a small supplier under s.148 of the legislation

☐ Other: Specify _____

Signature of Authorized Person

Print Name

Title

Date



CONFLICT OF INTEREST DISCLOSURE STATEMENT

PROCUREMENT PROCESS

ES-23-14

Landfill Gas System Equipment Upgrade
Foothills Boulevard Regional Landfill

Bidder Name: _____

The Bidder, including its officers, employees, and any person or other entity working on behalf of or in conjunction with, the Bidder on this Procurement Process:

- ☐ is free of any conflict of interest that could be perceived to improperly influence the outcome of this procurement process.
- ☐ has not, and will not, participate in any improper procurement practices that can provide the Bidder with an unfair competitive advantage including obtaining and using insider type information to prepare a solicitation offer or participating in bid rigging.
- ☐ has an actual, perceived, or potential conflict of interest regarding this procurement process as a result of:

State reason(s) for Conflict of Interest:

By signing below, I certify that all statements made on this form are true and correct to the best of my knowledge.

Print Name of Person Signing Disclosure

Signature of Person Making Disclosure

Date Signed



CONTRACT

Landfill Gas System Equipment Upgrade Foothills Boulevard Regional Landfill

BETWEEN:

REGIONAL DISTRICT OF FRASER-FORT GEORGE, a local government incorporated pursuant to the *Local Government Act* and having its business office located at:
155 George Street
Prince George, BC V2L 1P8

(hereinafter called "the Regional District")

AND:

CONTRACTOR

a company duly incorporated under the laws of British Columbia and having a place of business at:
address
address, pc

(hereinafter called the "Contractor")

OF THE FIRST PART

OF THE SECOND PART

WITNESSETH that the Contractor and the Regional District undertake and agree as follows:

- The Contractor will:
 - (a) Provide all necessary labour, equipment, transportation, materials, supervision, and services to perform all of the work, and fulfill everything as set forth in, and in strict accordance with, the Contract documents for "Invitation to Tender ES-23-14, Landfill Gas System Equipment Upgrade – Foothills Boulevard Regional Landfill.
 - (b) Commence to actively proceed with the work of the Contract September 1, 2023 and upon execution of the Contract.
- The Regional District will pay to the Contractor as full compensation for the performance and fulfilment of this Contract, the sum or sums of money specified herein in the manner and at the times specified in the Contract Documents.
- The Instructions to Tenderers, executed Tender Form, Schedule of Prices, List of Contractor's Personnel, List of Sub-contractors, List of Equipment, Tender's Experience in Similar Work, General Conditions of Contract, Bid Bond, Contract Agreement and other Securities, General Conditions, Operational Specifications, and all addenda are incorporated herein, to the intent and purpose as though recited in full herein, and the whole will form the Contract and will endure to the benefit of, and be binding upon, the parties hereto and their successors, executors, administrators, and assigns.
- No implied contract of any kind whatsoever, by or on behalf of the Regional District, will arise or be implied from anything contained in this Contract or from any position or situation of the parties at any time, it being understood and agreed that the express contracts, covenants and agreements made



herein by the parties hereto are, and will be, the only contract, covenants and agreements on which any rights against the Regional District may be founded.

- Subject to Clause 4, this Contract will supersede all communications, negotiations, and agreements, either written or verbal, made between the parties hereto in respect of matters pertaining to this Contract prior to the execution and delivery hereof.
- All communications in writing between the parties will be deemed to have been received by the addressee if delivered to the individual, or to a member of a firm, or to the General Manager of the Regional District for whom they are intended, or if sent by hand delivery, mail or registered mail as follows:

The contractor at _____
address

The Regional District at 155 George Street, Prince George, BC V2L 1P8.

IN WITNESS WHEREOF the parties have duly executed this Contract.

SIGNED ON BEHALF OF THE
REGIONAL DISTRICT OF FRASER-FORT GEORGE

Chair

Date

GM of Legislative and Corporate Services

Date

SIGNED ON BEHALF OF
CONTRACTOR

Signature

Date

(Name and Title) (Please print)

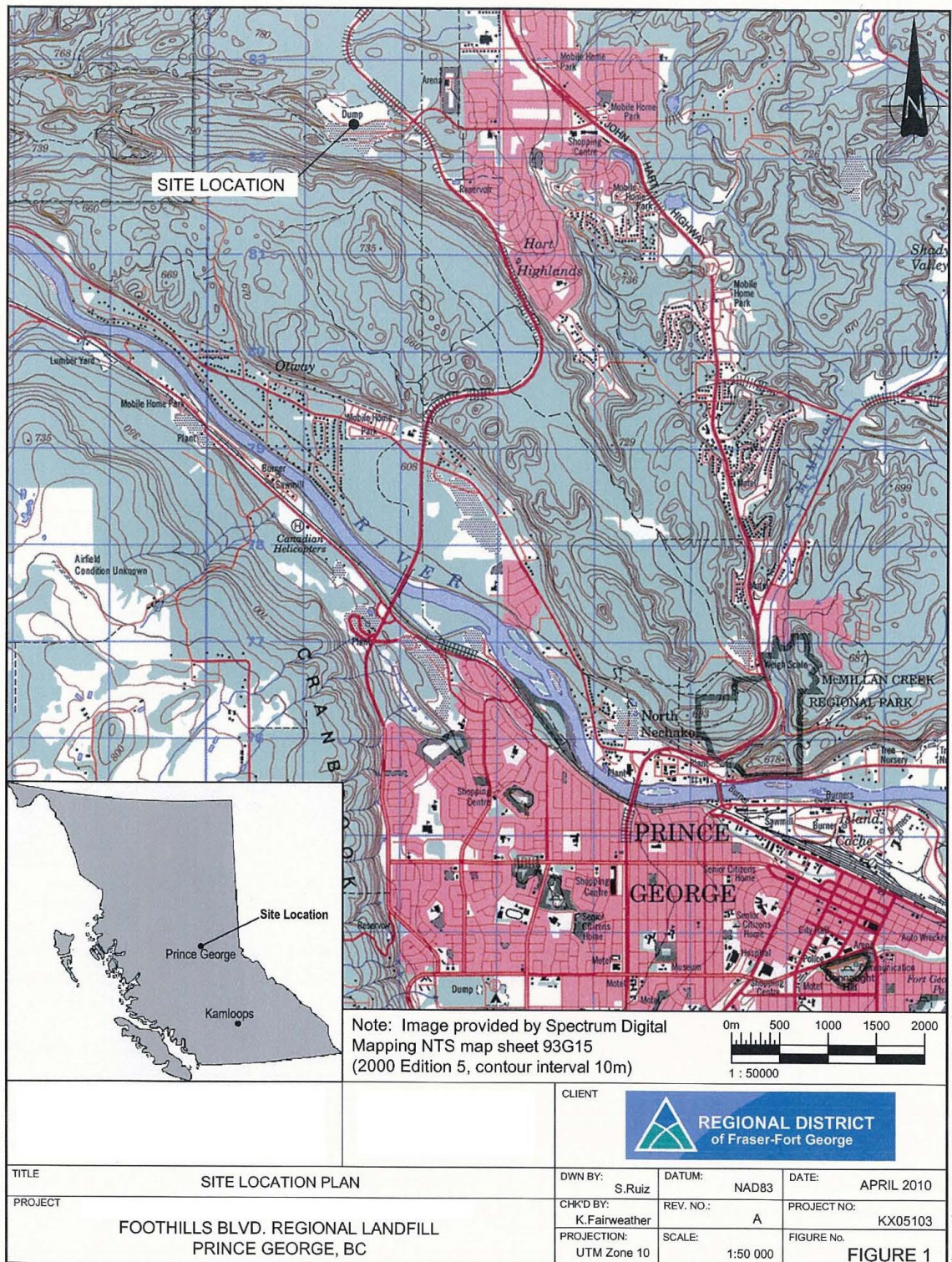


APPENDICES

- Appendix A – Site Location
- Appendix B – Site Plan
- Appendix C – Current LFG Abstraction Plant Overview
- Appendix D - Operational Philosophy
- Appendix E - Current instrumentation layout
- Appendix F - Current Electrical supply schematic



APPENDIX A – Site Location Map



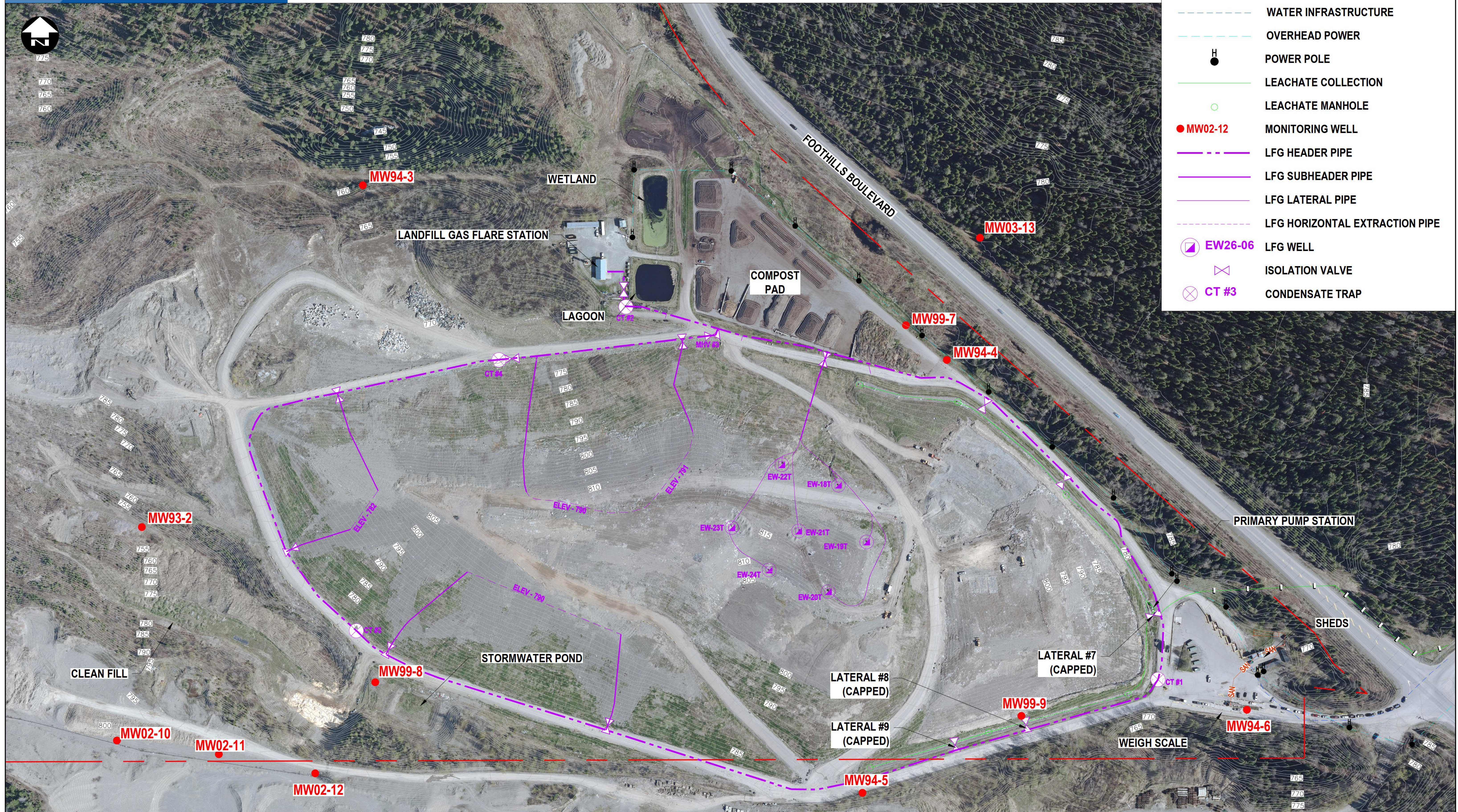
Foothill Boulevard Regional Landfill Site Location Map



Appendix B – Site Plan

POLLUTION CONTROL INFRASTRUCTURE FOOTHILLS BOULEVARD REGIONAL LANDFILL

LEGEND	
	PROPERTY BOUNDARY
	LEACHATE FORCEMAIN
	SANITARY INFRASTRUCTURE
	WATER INFRASTRUCTURE
	OVERHEAD POWER
	POWER POLE
	LEACHATE COLLECTION
	LEACHATE MANHOLE
	MONITORING WELL
	LFG HEADER PIPE
	LFG SUBHEADER PIPE
	LFG LATERAL PIPE
	LFG HORIZONTAL EXTRACTION PIPE
	LFG WELL
	ISOLATION VALVE
	CONDENSATE TRAP



NOTE: EXISTING CONDITIONS AS OF MAY 21, 2022

Appendix C – Current LFG Abstraction Plant Overview



Appendix D - Operational Philosophy

VI. OPERATIONAL PHILOSOPHY

The following information briefly describes the operating logic and sequence for an Enclosed ZTOF Flare System.

WARNING

Do not circumvent the purge cycle, any flame management sequence, or any other safety sequence.

Logic

A burner management system, which includes a flame safeguard package, monitors specific parameters and discontinues operation if an unsafe condition occurs. An ultraviolet, self-checking flame scanner detects both pilot flame and main flame. The flame scanner is unable to distinguish between flame sources. Typical shutdown scenarios include:

Flare High Temperature Shutdown

Flare High Temperature Shutdown occurs the moment a 2000 °F temperature is detected within the flare enclosure by a dedicated high temperature thermocouple. The "Flare High Temperature" light flashes immediately and system operation discontinues.

Flare Low Temperature Shutdown

Flare Low Temperature Shutdown occurs when a temperature below 1400 °F is detected within the flare enclosure by the selected temperature control thermocouple and exists for ten minutes consecutively. The "Flare Low Temperature" light flashes and system operation discontinues.

Pilot Flame Failure and Shutdown

Pilot Flame Failure occurs, during the ignition sequence, when the flame scanner is unable to detect the presence of flame inside the flare enclosure. When Pilot Flame Failure occurs, system operation is interrupted momentarily. Then the entire purge cycle and ignition sequence are repeated automatically. A Shutdown occurs only after three consecutive Failures, or unsuccessful attempts. Once Pilot Flame Shutdown occurs, the "Flame Failure" light flashes and system operation discontinues.

Main Flame Failure and Shutdown

Main Flame Failure occurs, once the ignition sequence is complete, when the flame scanner is unable to detect the presence of flame inside the flare enclosure. When Main Flame Failure occurs, system operation is interrupted momentarily. Then the entire purge cycle and ignition sequence are repeated automatically. A Shutdown occurs only after three consecutive Failures, or unsuccessful attempts. Once Main Flame Shutdown occurs, the "Flame Failure" light flashes and system operation discontinues.

Other safety features include:

- Purge Failure
- Automatic Block Valve Failure
- Gas Blower Failure
- Excess Oxygen
- Low Methane
- Discharge High Pressure
- Separator High Level

Upon determining the source of an alarm condition and completing the necessary corrective action, the alarm is cleared by first placing the "System Control" switch in the OFF position and then depressing the "Reset" pushbutton.

Sequence

A typical operating sequence consists of:

System Control Selection

System operation begins automatically by selecting either local or remote system control. Local control requires interaction at the control panel to start and stop operation. Remote control allows starting and stopping operation without interaction at the control panel.

Operating Permissives

System operation is permitted only after confirming two safety conditions exist. The closed limit switch for the automatic block valve must be satisfied, proving a closed valve position. Additionally, the flame scanner must not detect the presence of flame inside the flare enclosure.

Purge Cycle

Prior to beginning the ignition sequence, the combustion chamber and flare enclosure must be purged with ambient air to ensure no potentially explosive gas mixture exists inside. To create a safe condition for pilot ignition, the purge air blower operates and the automatic air damper louvers are maintained fully open for five minutes prior to each ignition attempt. When local system control is selected, the purge air blower begins and the "Purging" light illuminates. If purge air blower operation fails, or the purge air pressure switch is not satisfied, the "Purge Failure" light flashes and system operation discontinues.

Ignition Sequence

The ignition sequence begins immediately after the purge cycle is complete. The pilot gas solenoid valve opens automatically, supplying gas to the pilot, the "Ignition Sequence" light illuminates, and the ignition transformer energizes. The ignition transformer continues for ten seconds and then the flame scanner verifies flame is present. The "Flame Proved" light illuminates and the pilot gas solenoid valve remains open.

Gas Supply

Once the flame scanner detects pilot flame, the automatic block valve opens, operation of the selected gas blower begins, supplying gas to the flare. After the open limit switch for the automatic block valve is achieved, the pilot gas solenoid valve closes and the "Ignition Sequence" light diminishes. While the flame scanner verifies the presence of flame, system operation continues.

Automatic Temperature Control

The operating temperature, or temperature maintained inside the flare enclosure, is controlled by varying the ambient air available through the air damper louvers. **The elevation of the temperature control thermocouple is selected depending on the gas flow rate and methane concentration.** The operating temperature is maintained by adjusting automatically the position of the louvers. Closing the louvers reduces the amount of air available and increases the operating temperature, while opening the louvers increases the amount of air available and decreases the operating temperature. The louvers are maintained open initially, before beginning automatic temperature control modulation, which introduces air inside the flare enclosure while the enclosure is cold and lacking draft, to minimize smoke during initial operation.



Appendix E - Current instrumentation layout

LEGEND

AC

AIR COMPRESSOR

AD

AIR DRYER

BE

FLAME SCANNER

BL

BLOWER

BS

FLAME MONITOR

BV

MANUAL BALL VALVE

CV

CHECK VALVE

DPI

DIFFERENTIAL PRESSURE INDICATOR

DV

DRAIN VALVE

EJ

EXPANSION JOINT

F

FILTER

FA

FLAME ARRESTOR

FE

FLOW ELEMENT

FR

FLOW RECORDER

FT

FLOW TRANSMITTER

HLSD

HIGH LEVEL SHUT DOWN

HV

HAND VALVE

KE1st

PILOT

LG

LEVEL GAGE

LSH

LEVEL SWITCH - HIGH

M

MOTOR

MAL

METHANE ALARM LOW

MR

METHANE RECORDER

MT

METHANE ELEMENT AND TRANSMITTER

OT

OXYGEN ELEMENT AND TRANSMITTER

OR

OXYGEN RECORDER

OAH

OXYGEN ALARM HIGH

PCV

PRESSURE CONTROL VALVE

PI

PRESSURE INDICATOR

PS

PRESSURE SWITCH

PSL

PRESSURE SWITCH - LOW

PSV

PRESSURE SAFETY VALVE

PIT

PRESSURE TRANSMITTER

SA

SAMPLING SYSTEM

SDV

SHUT DOWN VALVE

SOV

SOLENOID VALVE

STR

STRAINER

TAH

HIGH TEMPERATURE SWITCH - SET AT 2000°F

TCV

DAMPER

TE

TEMPERATURE ELEMENT (THERMOCOUPLE)

TI

TEMPERATURE INDICATOR

TIC

COMBUSTION TEMPERATURE INDICATOR

TR

TEMPERATURE RECORDER

TSL

LOW TEMPERATURE INDICATOR - SET AT 1400°F

TT

TEMPERATURE TRANSMITTER

V

VESSEL

VC

VALVE CLOSED

VFD

VARIABLE FREQUENCY DRIVE

VO

VALVE OPEN

ZSC

LIMIT SWITCH CLOSED

ZSO

LIMIT SWITCH OPEN

FRONT OF CONTROL PANEL

BACK OF CONTROL PANEL

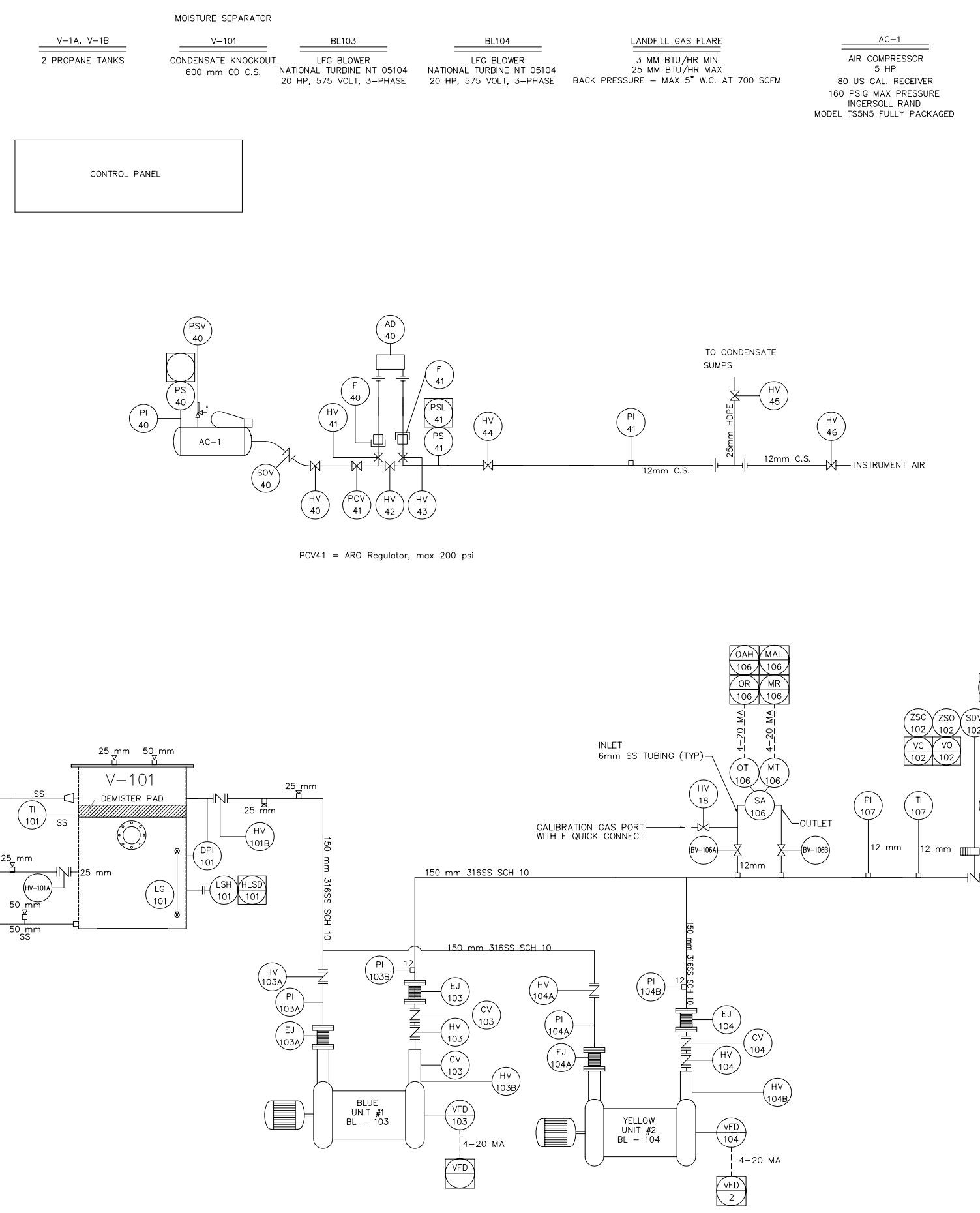
LOCAL MOUNT

PLC

INSULATE

50mm THICK THERMAL BLANKET

SAMPLE PORT - TEFLON TAPED
THREADED STAINLESS STEEL PLUG



REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
Δ	DEC/1/04	CW	ADDED HV304 AND PI305 FROM JZ DWG	NV	CW	CW
Δ	DCT/14/03	CW	AS-BUILT FOR O & M	SRR	CW	CW
Δ	JUL/29/03	AJ	AS-BUILT OF AIR COMPRESSOR	GG	CW	CW
Δ	JUL/3/02	AJ	FLOW ELEMENT REVISED	NV	CW	CW
Δ	JUN/25/02	AJ	ISSUED FOR CONSTRUCTION	NV	PZ	CW
Δ	MAY/17/02	AJ	ADDENDUM #2	NV	PZ	CW
Δ	MAY/14/02	AJ	ADDENDUM #1 - ADD FSV, PS	NV	CW	CW
Δ	APR/26/02	AJ	ISSUED FOR TENDER	JK	CW	CW

PROJECT

Sperling Hansen Associates Inc.
Foothills Blvd Landfill
Prince George, B.C.

TITLE

LFG ABSTACTION PLANT PROCESS AND
INSTRUMENTATION DIAGRAM

Golder
Associates

PROJECT No. 022-1042
DESIGN AJ
CADD NV
CHECK CW
REVIEW

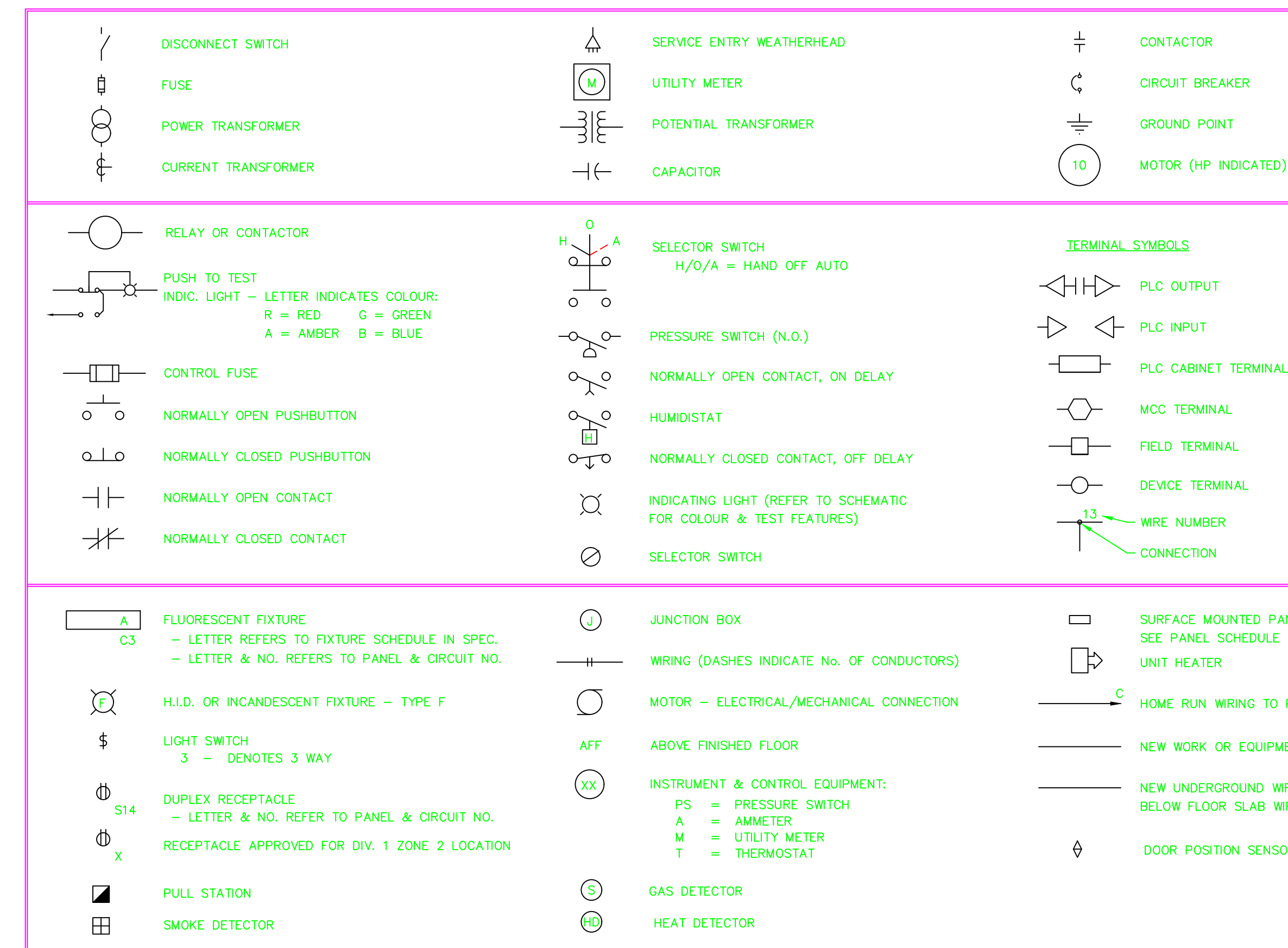
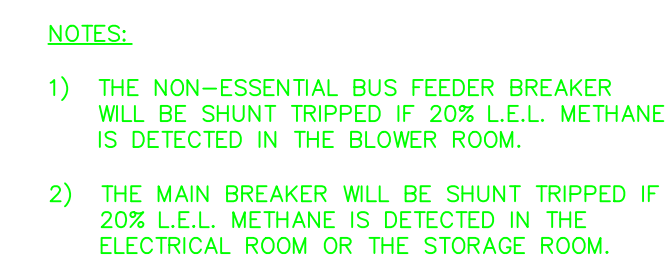
FILE No. 1042-m1
SCALE SCHEMATIC
REV. 7

Dwg. 02017-M1

QAD FILE: C:\Active\1000\0202\022-1042_Foothills_LFG Drawings\1042-m1-R6-2.dwg
REVISION DATE 04/12/1 2:04pm By: meloso




Appendix F - Current Electrical supply schematic



SITE PLAN

NTS

0011E1	REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION	DESIGNED	JVH	 EMCO ENGINEERING LTD. CONSULTING ENGINEERS	REGIONAL DISTRICT OF FRASER-FORT GEORGE FOOTHILLS BLVD. LANDFILL 2001 CLOSURE CONTRACT LFG ABSTRACTION PLANT BUILDING SINGLE LINE DIAGRAM & SYMBOL LEGEND	SC DR SH						
		A	JAN29/02	LDD	JVH		PRELIMINARY	D	MAR3/03				DSH	JVH	RECORD SET	DRAWN	LDD/DSH	
		B	APR15/02	KLP	RR		ISSUED FOR TENDER										CHECKED	RR
		C	JUN23/02	KLP	RR		ISSUED FOR CONSTRUCTION - ADDENDUMS INCLUDED											