



APPROVAL GVU1095

Pursuant to:

Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008
and the BC Environmental Management Act, S.B.C 2003, c.53

Issued to:

FortisBC Energy Inc.
(the "Approval Holder")

To Authorize:

the discharge of air contaminants to the air from
a liquefied natural gas production, storage, and truck loading facility

Located at:


7555 Hopcott Road, Delta, BC V4G 1B7

Effective Period:

The terms and conditions set out in the Approval apply to the existing or planned works as of
January 18, 2018 and this approval will expire on September 28, 2018.

All previous versions of this Approval are hereby rescinded and rendered null and void.

Issued: May 17, 2017
Amended: January 18, 2018


R.H. (Ray) Robb, P. Eng.
District Director

SECTION 1 – AUTHORIZED EMISSION SOURCES

Authorization to discharge air contaminants from the authorized Emission Sources and Works listed below is subject to the specified terms and conditions.

Approximate locations of the emission sources are shown on the Site Plan in section 4.

EMISSION SOURCE 01a: amine, molecular sieve, and selexol systems and fugitive gas incinerator stack.

MAXIMUM EMISSION FLOW RATE: **75.4** m³/min
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y
MAXIMUM PRIMARY BURNER INPUT FIRING RATE: **31.65** GJ/h

MAXIMUM EMISSION QUALITY:

1. 43 mg/m³ Carbon Monoxide
2. 36 mg/m³ Combustion Condensable Particulate Matter
3. 790 mg/m³ Nitrogen Oxides
4. 430 mg/m³ Sulphur Oxides 24-hour rolling average expressed as sulphur dioxide.
5. 35 mg/m³ Total Volatile Organic Compounds
6. 10% Opacity.

WORKS AND PROCEDURES:


A John Zink incinerator, Model No. 9157354, equipped with secure pilot gas supply and reliable pilot gas ignition system. The incinerator will be designed and operated with a 99.99% hydrocarbon removal efficiency, dry basis as methane at 7% oxygen.

The incinerator will be operated at a minimum temperature of 982 degrees Celsius. The incinerator will be equipped with a device that records incoming flow and monitors temperature with a continuous recorder and a minimum accuracy of +/- 1 percent of the temperature being measured in degrees Celsius. The flow and temperature records must be kept for at least three years after the date of preparation or receipt thereof.

The maximum emission quality for Sulphur Oxides 24-hour rolling average specified above refers to normal operating conditions of the amine, mol sieve/selexol systems as well as any captured fugitive gas.

- Stack height above ground level = 17 metres
- Internal stack diameter at stack top = 1.04 metres
- Minimum stack exit temperature = 981.85 °C
- Stack is not capped.

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EMISSION SOURCE 01b: amine, molecular sieve, and selexol systems and fugitive gas incinerator stack.

MAXIMUM EMISSION FLOW RATE: **75.4** m³/min
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y
MAXIMUM PRIMARY BURNER INPUT FIRING RATE: **31.65** GJ/h

MAXIMUM EMISSION QUALITY:

1. 3600 mg/m³ Sulphur Oxides 1-hour average expressed as sulphur dioxide.

WORKS AND PROCEDURES:

The maximum emission quality for Sulphur Oxides 1-hour average specified above refers to the regeneration period of the mol sieve/selexol systems and includes the constant contribution associated with the amine system.

EMISSION SOURCE Facility: Fugitive emissions from fittings.

MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUANTITY:

1. 56 t/y Methane

MAXIMUM EMISSION QUALITY:


1. The methane restriction above is for an annual basis. The pro-rated methane restriction is 42 t/y for the term of the approval.

WORKS AND PROCEDURES:

A one-time release of methane during tank purging at start-up is restricted to 178 tonnes. After the initial tank purging, the restriction specified above applies. Good operating procedures will be employed.

Leaks will be repaired within 90 days of date of identification, unless a plant shutdown is required. All leak repairs that require more than 15 days to complete must be reported in writing to the District Director within 21 days of leak detection.

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SECTION 2 – GENERAL REQUIREMENTS AND CONDITIONS

A. AUTHORIZED WORKS, PROCEDURES AND SOURCES

Works and procedures, which this approval authorizes in order to control the discharge of air contaminants, shall be employed during all operating periods of the related sources. The Approval Holder shall regularly inspect and maintain all such works, procedures and sources.

The District Director must be provided with reasonable notice of any changes to or replacement of authorized works, procedures or sources. Any changes to or replacement of authorized works, procedures or sources must be approved by the District Director in advance of operation. For certainty, this does not include routine maintenance or repair.

The discharge criteria described in Section 1 of this approval are applicable on the issued or last amended date of this approval unless specified otherwise. If a date different to the issued or last amended date is specified, the existing works, procedures and sources must be maintained in good operating condition and operated in a manner to minimize emissions.

B. NOTIFICATION OF MONITORING NON-COMPLIANCE

The District Director must be notified immediately of any emission monitoring results, whether from a continuous emissions monitor or periodic testing, which exceed the quantity or quality authorized in Section 1 of this approval. Notification shall be made to Metro Vancouver's 24-hour number: 604-436-6777, or to regulationenforcement@metrovancover.org.

C. POLLUTION NOT PERMITTED

Notwithstanding any conditions in this approval, no person shall discharge or allow or cause the discharge of any air contaminant so as to cause pollution as defined in the Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008 and the Environmental Management Act.

D. BYPASSES


The discharge of air contaminants that have bypassed authorized control works is prohibited unless advance approval has been obtained and confirmed in writing from the District Director.

E. EMERGENCY PROCEDURES

In the event of an emergency or condition beyond the control of the Approval Holder that prevents effective operation of the authorized works or procedures or leads to unauthorized discharge, the Approval Holder shall:

1. Comply with all applicable statutory requirements;
2. Immediately notify the District Director of the emergency or condition and of contingency actions invoked or planned to mitigate adverse impacts and restore compliance; Notification shall be made to Metro Vancouver's 24-hour number: 604-436-6777; and
3. Take appropriate remedial action for the prevention or mitigation of pollution.

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The District Director may specify contingency actions to be implemented to protect human health and the environment while authorized works are being restored and/or corrective actions are being taken to prevent unauthorized discharges.

If an emergency situation results in a "spill" as defined in the Environmental Management Act Spill Reporting Regulation, the spill shall also be reported immediately to the Provincial Emergency Program by telephoning 1-800-663-3456.

F. AMENDMENTS


The terms and conditions of this approval may be amended, as authorized by applicable legislation. New works, procedures or sources or alterations to existing works, procedures or sources must receive authorization in advance of operation.

G. STANDARD CONDITIONS AND DEFINITIONS

Unless otherwise specified, the following applies to this approval:

1. Gaseous volumes are corrected to standard conditions of 20 degrees Celsius (°C) and 101.325 kilo Pascals (kPa) with zero percent moisture.
2. Contaminant concentrations from the combustion of specific fuel types are corrected to the following Oxygen content, unless specified otherwise:
 - 3% O₂ for natural gas and fuel oil; or
 - 8% O₂ for wood fuel
3. Where compliance testing is required, each contaminant concentration limit in this approval will be assessed for compliance based on a valid test using test methods approved by the District Director.
4. Visual opacity measurements are made at the point of maximum density, nearest the discharge point and exclude the effect of condensed, uncombined water droplets. Compliance determinations are based on a six-minute average in accordance with the United States Environmental Protection Agency (US EPA) Method 9: Visual Determination of the Opacity of Emissions from Stationary Sources. Continuous Emission Monitor System (CEMS) opacity compliance determinations are based on a one-hour average (taken from the top of each hour).
5. If authorized in Section 1 of this approval, standby fuel use is restricted to a maximum of 350 hours per year and to those periods during which the primary authorized fuel is not available. Fuel oil sulphur content shall not exceed 15 milligrams per kilogram (mg/kg) and emissions during fuel oil firing shall not exceed 10% opacity.
6. Definitions in the Environmental Management Act and Air Quality Management Bylaw apply to terminology used in this approval.
7. Threshold Limit Values (TLV) refer to the Time Weighted Average (TWA) exposure limits for substances specified in the American Conference of Governmental Industrial Hygienists Threshold Limit Values handbook, current on the latest date that this approval issuance or amendment came into effect.
8. Sulphur Oxides (SO_x) are expressed as Sulphur Dioxide.
9. Nitrogen Oxides (NO_x) are expressed as Nitrogen Dioxide.

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10. The Canadian Council of Ministers of the Environment (CCME) "Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks (PN1180)" shall be adhered to for all applicable tanks unless otherwise stated in this approval.
11. Authorized 'Maximum Annual Operating Hours' of 8760 hours per year for an emission source is equivalent to authorization for continuous operation of the emission source for an entire calendar year, including leap years.

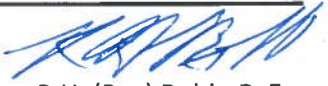
H. RECORDS RETENTION

All records and supporting documentation relating to this approval must be kept for at least three years after the date of preparation or receipt thereof, and be made available for inspection within 48 hours of a request by an Officer.

I. HEATING, VENTILATION, AIR CONDITIONING AND INTERNAL COMBUSTION ENGINES

Air contaminants discharged from any natural gas-fired heating, ventilation or air conditioning system for buildings and any internal combustion engine located at the discharge site shall be maintained and operated in a manner prescribed by the manufacturer to ensure good combustion of the fuel with minimum discharge of air contaminants.

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SECTION 3 – REPORTING REQUIREMENTS

A. MONITORING REQUIREMENTS AND REPORTING

Unless otherwise approved in writing by the District Director prior to any sampling or analysis, all measurements shall be performed by an independent agency in accordance with Metro Vancouver Air Emissions Sampling Program Manual of Methods and Standard Operating Procedures and the BC Ministry of Environment Field Sampling Manual, as they may be amended from time to time. Any variance from these procedures must receive prior written approval from the District Director.

A minimum of 5 working days advance notice must be given prior to taking measurements required by this Monitoring and Sampling Program. Notification must be given to the Metro Vancouver Environmental Regulation & Enforcement Division (phone 604-436-6777, Fax 604-436-6707, email regulationenforcement@metrovancover.org).

Unless otherwise specified, sampling shall be performed under operating conditions representative of the previous 90 calendar days of operation. All field data and calculations must be submitted with monitoring results and they shall be reported in the metric units which are used in this approval. These submissions shall include process data relevant to the operation of the source of the emissions and the performance of the emission control works.

The Approval Holder shall conduct the following monitoring and sampling and submit electronic reports of the results to the District Director by the dates specified below using a password enabled web based application provided by Metro Vancouver.

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
01a	August 31, 2018	N/A	Written report detailing the measured discharge rate and concentration of volatile organic compound, nitrogen oxides, and sulphur oxides in the emissions.	Combustion Volatile Organic Compound, Nitrogen Oxides, Sulphur Oxides	EPA Test Method 6C, EPA Test Method 7E, Those approved by the District Director, EPA Test Method 25A	Stack

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B: INFORMATION REPORTING REQUIREMENTS

The Approval Holder shall submit electronic reports containing the required information to the District Director by the dates specified below using a password enabled web based application provided by Metro Vancouver.

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
01a	April 30, 2018	N/A	A final dispersion model report which presents maximum predicted concentrations and various percentiles illustrative of the incremental impact of facility emissions. The report or associated addendum will also discuss the implications of the model results on human health (including sensitive receptors) and the environment. A minimum of three scenarios are to be modelled: normal operations, operations during mol sieve regeneration, and authorized emissions. The report will present maximum predicted concentrations and various percentiles illustrative of the incremental impact of facility emissions.	Dispersion Model
01a	October 31, 2018	On or before October 31 for each subsequent year.	Written report providing details of the types and amounts of principal products produced and principal raw materials used since approval issuance.	Materials and Products
01a	October 31, 2018	On or before October 31 for each subsequent year.	Written report providing details of the total number of hours and days operated since approval issuance. Detailed records are to be maintained in a written bound log or other format approved by the District Director and made available for inspection by Metro Vancouver staff for a minimum period of three years.	Operating Period


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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
01a	October 31, 2018	On or before October 31 for each subsequent year.	Written report providing details of the types and amounts of fuel burned since approval issuance.	Fuel Use
01a	May 31, 2018	N/A	Written sampling plan prepared by a qualified person, submitted to the district director for review, comment, and written approval, which outlines a program to measure the discharge rate and concentration of volatile organic compounds, nitrogen oxides, and sulphur oxides in the emissions.	Information - Other
Facility	July 31, 2018	N/A	Written report of the findings of the Fugitive Emission Management Program (FEMP) which summarizes the results of measurements and actions taken in the previous nine months. The sampling and assessment program must adhere to the methodologies and criteria as outlined in the approved plan and must be conducted by qualified personnel. The FEMP report will describe any fugitive emissions monitoring done at the plant during the term of the approval. The FEMP report will include details for any leak repair(s) done during the term of the approval.	Information - Other
Facility	March 31, 2018	N/A	Written plan prepared by a qualified person, submitted to the district director for review, comment, and written approval, which outlines a Fugitive Emission Management Program (FEMP). The FEMP will assess leaks from all fittings through testing, except that for flanges, a statistically representative number of the total number of flanges throughout the facility will be tested annually. In this approval, a leak is defined as the detection of a non-photoreactive VOC concentration of 1000 ppmv or more at the emission source.	Information - Other


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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
			<p>The FEMP will specify the methodology to be used for monitoring leaks, provide information on the total number of fittings to be tested, and quantify the number of inaccessible fittings. The FEMP will provide detail on how flanges are selected for testing.</p> <p>Any sampling and analyses associated with this plan must be conducted by qualified personnel. Raw data supporting the submission will be made available upon request from Metro Vancouver Staff and must be maintained for a minimum of three years.</p> <p>Once approved by the district director, the FEMP may be updated by the Approval Holder. Any updates are to be submitted to the district director for review, comment, and written approval. The most recently approved FEMP will be the plan in force.</p>	

C. AMENDED OR ADDITIONAL REQUIREMENTS

Based on the results of the monitoring program, including the stack sampling results or any other information, the District Director may:

1. Amend the monitoring and reporting requirement of any of the information required by this Approval including plans, programs and studies.
2. Require additional investigations, tests, surveys or studies.

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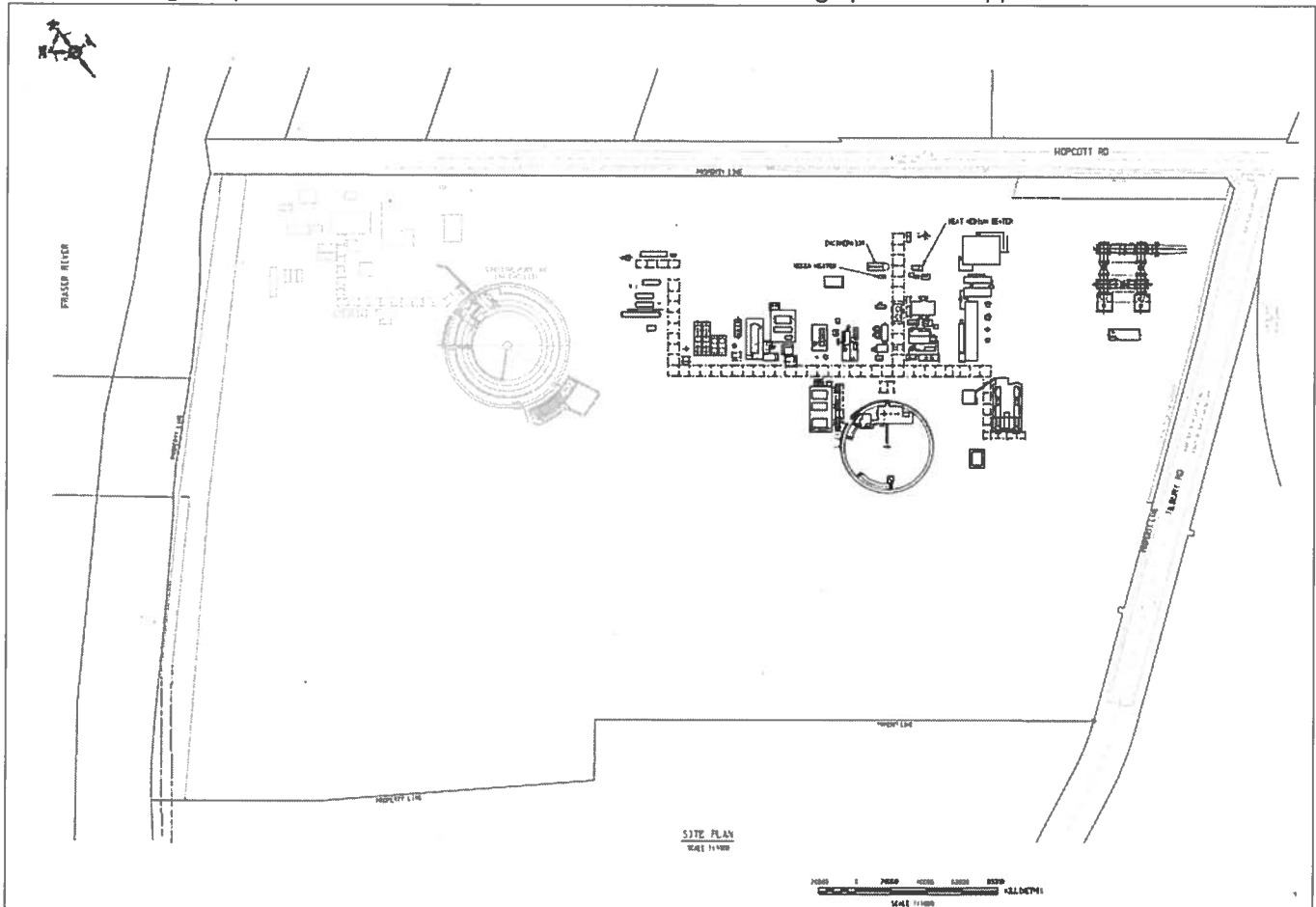
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SECTION 4 – SITE PLAN

LEGAL DESCRIPTION OF DISCHARGE SITE:

The following site plan is not to scale and the locations of the discharge points are approximate.



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