



## PERMIT GVA0254

**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:**

Revolution ORS Acquisition GP Inc. dba Terrapure  
(the "Permittee")

**To Authorize:**

the discharge of air contaminants to the air from  
a lubricating oil reprocessing facility

**Located at:**

130 Forester Street, North Vancouver, BC V7H 2M9

**Effective Period:**

The terms and conditions set out in the Permit apply to the existing or planned works as of  
May 11, 2018 and this permit will expire on April 28, 2028.

All previous versions of this Permit are invalid.

---

Issued: December 14, 1992  
Amended: May 11, 2018

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

**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

**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 01: 100 HP Cleaver Brooks boiler discharging through a Stack(s).**

MAXIMUM EMISSION FLOW RATE: 29 m<sup>3</sup>/min  
MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y  
MAXIMUM PRIMARY BURNER INPUT FIRING RATE: 6.3 GJ/h

MAXIMUM EMISSION QUALITY:

1. 5% Opacity.

WORKS AND PROCEDURES:

The firing of the boiler with natural gas using good combustion practices and operating procedures. The firing of the boiler or a temporary boiler during annual boiler inspections with low sulphur fuel (maximum 0.05% sulphur content by weight) to a maximum of 500 hours per year.

- Until December 31, 2019: Stack height above ground level = 7.24 metres
- After December 31, 2019: Stack height above ground level = 11.15 metres
- Internal stack diameter at stack top = 0.39 metres
- Minimum stack exit temperature = 76 °C
- Stack is capped

**EMISSION SOURCE 02: Heater H319/incinerator discharging through a Stack(s).**

MAXIMUM EMISSION FLOW RATE: 100 m<sup>3</sup>/min  
MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y  
MAXIMUM PRIMARY BURNER INPUT FIRING RATE: 26.5 GJ/h

MAXIMUM EMISSION QUALITY:

1. 50 mg/m<sup>3</sup> Hydrogen Chloride
2. 300 mg/m<sup>3</sup> Nitrogen Oxides
3. 350 mg/m<sup>3</sup> Sulphur Oxides
4. 28 mg/m<sup>3</sup> Total Reduced Sulphur Compounds (as H<sub>2</sub>S)
5. 10 mg/m<sup>3</sup> Total Volatile Organic Compounds

---

Issued: December 14, 1992  
Amended: May 11, 2018

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

Permit GVA0254

## METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

6. 30 mg/m<sup>3</sup> Particulate Matter
7. 5% Opacity.

### WORKS AND PROCEDURES:

The firing of process heater #H319 with natural gas and off-gases from a caustic scrubber, using good combustion practices and operating procedures. All recovered sour vapours from tankage and process collected by the vapour recovery system will be routed to the caustic scrubber, which will have a continuous make up of caustic (NaOH) to maintain a minimum 17% solution. After treatment in the scrubber, the sour vapours will be incinerated in heater #H319.

- Stack height above ground level = 14.87 metres
- Internal stack diameter at stack top = 0.90 metres
- Minimum stack exit temperature = 288 °C
- The oxygen correction is 8% for combined natural gas and vent gas
- Stack is capped

### EMISSION SOURCE 03: Oil storage tanks discharging through a Vent(s).

**MAXIMUM EMISSION FLOW RATE: The authorized maximum rate of discharge is that resulting from vapour venting during tank filling and breathing.**

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

### MAXIMUM EMISSION QUALITY:

### WORKS AND PROCEDURES:

Tank vents and good operating practices. All recovered sour vapours from tankage are to be collected by the vapour recovery system and then routed to the caustic scrubber to remove sulphur. The scrubber shall have a continuous make up of caustic (NaOH) to maintain a minimum 17% solution. After treatment in the scrubber, the sour vapours are to be routed to heater #H319 to be incinerated.

- Highest stack height above ground level = 12.19 metres
- Internal stack diameter at stack top = 0.39 metres

### EMISSION SOURCE 07: Three natural gas fired process heaters #H510, #H610 & #H810 discharging through a Stack(s).

**MAXIMUM EMISSION FLOW RATE: 18 m<sup>3</sup>/min**

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

**MAXIMUM PRIMARY BURNER INPUT FIRING RATE: 2.32 GJ/h**

---

Issued: December 14, 1992

Amended: May 11, 2018

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

Permit GVA0254

## METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

### MAXIMUM EMISSION QUALITY:

1. 5% Opacity.

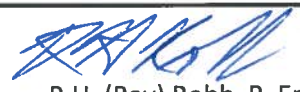
### WORKS AND PROCEDURES:

The firing of three heaters with natural gas using good combustion practices and operating procedures. The maximum input firing rate specified is for each heater.

- Stack height above ground level = 4.52 to 4.57 metres
- Internal stack diameter at stack top = 0.22 metres
- Minimum stack exit temperature = 76 °C
- Stack is not capped

---

Issued: December 14, 1992  
Amended: May 11, 2018

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

Permit GVA0254

**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

**SECTION 2 – GENERAL REQUIREMENTS AND CONDITIONS**

**A. AUTHORIZED WORKS, PROCEDURES AND SOURCES**

Works and procedures, which this permit authorizes in order to control the discharge of air contaminants, shall be employed during all operating periods of the related sources. The Permittee 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 permit are applicable on the issued or last amended date of this permit 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 permit. Notification shall be made to Metro Vancouver's 24-hour number: 604-436-6777, or to [regulationenforcement@metrovancover.org](mailto:regulationenforcement@metrovancover.org).

**C. POLLUTION NOT PERMITTED**

Notwithstanding any conditions in this permit, 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 Permittee that prevents effective operation of the authorized works or procedures or leads to unauthorized discharge, the Permittee 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

---

Issued: December 14, 1992  
Amended: May 11, 2018

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

Permit GVA0254

## METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

3. Take appropriate remedial action for the prevention or mitigation of pollution.

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 permit 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 permit:

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% O<sub>2</sub> for natural gas and fuel oil; or
  - 8% O<sub>2</sub> for wood fuel
3. Where compliance testing is required, each contaminant concentration limit in this permit 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 permit, 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 permit.
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 permit issuance or amendment came into effect.
8. Sulphur Oxides (SO<sub>x</sub>) are expressed as Sulphur Dioxide.

---

Issued: December 14, 1992  
Amended: May 11, 2018

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

Permit GVA0254

**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

9. Nitrogen Oxides (NO<sub>x</sub>) are expressed as Nitrogen Dioxide.
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 permit.
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 permit 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.

---

Issued: December 14, 1992  
Amended: May 11, 2018

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

Permit GVA0254

**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

**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](mailto: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 permit. 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 Permittee 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
02	March 31, 2019	On or before March 31 for each subsequent year.	<b>Stack Test Report</b> Written report detailing the measured discharge rate and concentration of	Hydrogen Chloride, Nitrogen Oxides,	EPA Test Method 25A, EPA Test	Stack

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

Issued: December 14, 1992  
Amended: May 11, 2018

Permit GVA0254



**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			hydrogen chloride, nitrogen oxides, particulate matter, sulphur oxides, total reduced sulphur compounds, and total volatile organic compounds in the emissions.	Sulphur Oxides, Particulate Matter, Total Reduced Sulphur Compounds, Total Volatile Organic Compounds	Method 26, EPA Test Method 7E, EPA Test Method 6C, EPA Test Method 16A, EPA Test Method 18, Those approved by the District Director, Metro Vancouver AQ02/02/1.00M	
02	March 31, 2019	N/A	<b>Stack Test Report</b> Written report detailing the measured discharge rate and concentration of benzene, ethylbenzene, toluene, and xylene in the emissions.	Benzene, Ethylbenzene, Toluene, Xylene	Those approved by the District Director, EPA Test Method 18	Stack

Issued: December 14, 1992  
 Amended: May 11, 2018

Permit GVA0254

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

**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

**B. INFORMATION REPORTING REQUIREMENTS**

The Permittee 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
02	September 30, 2019	On or before September 30 for each subsequent year.	<p><b>Progressive Odour Management Plan</b>                      A written report outlining a proposed Progressive Odour Management Plan (POMP) for written approval by the District Director. This plan shall include, but not be limited to, the following activities surrounding prevention, accountability, and progressive mitigation:</p> <p>Prevention can include the development of standard operating procedures to prevent release of odorants to the environment (i.e. preventive maintenance, leak detection and repair, feedstock handling, review of stack heights etc.)</p> <p>Accountability can include the development of responsibility charts, contact information, response procedures to upset conditions, response plan to follow-up on and mitigate odour complaints, communication plans etc.</p> <p>Progressive mitigation can include several levels of response such as perimeter odour detection, correction and reporting, implementation of new or changing of existing operational procedures, and ultimately retrofitting of technologies or controls works, if so required.</p> <p>Submissions in subsequent years shall include any updates to the plan and a summary of any findings, responses, and remedial actions as outlined by the</p>	Information - Other



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

Issued: December 14, 1992  
 Amended: May 11, 2018

Permit GVA0254

**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
02	November 29, 2019	N/A	<p><b>Sulphur Oxides Action Plan</b>                      The permittee shall submit a written Sulphur Oxides (SO<sub>x</sub>) Action Plan ('the Plan') to the District Director, for review and written approval, which identifies actions to be taken by the facility to ensure that the facility does not exceed Metro Vancouver's ambient air quality objective (AAQO) for sulphur dioxide (SO<sub>2</sub>) of 70 parts-per-billion (ppb) (183 ug/m<sup>3</sup>) as a 1-hour average. The Plan must include a timeline for the implementation of the Plan.</p>	Information - Other
01, 07	March 31, 2019	On or before March 31 for each subsequent year.	<p><b>Fuel Use Report</b>                      Written report providing details of the types and amounts of fuel (other than liquid) burned in the preceding calendar year.</p>	Fuel Use
Facility	March 31, 2019	On or before March 31 for each subsequent year.	<p><b>Principal Products and Raw Materials</b>                      Written report providing details of the types and amounts of principal products produced and principal raw materials used in the preceding calendar year.</p>	Materials and Products
01, 03, 07	March 31, 2019	On or before March 31 for each subsequent year.	<p><b>Operating Period</b>                      Written report providing details of the total number of hours and days operated in the preceding calendar year. 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.</p>	Operating Period



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

Issued: December 14, 1992  
 Amended: May 11, 2018

Permit GVA0254

**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
02	December 31, 2018	N/A	<p><b>Stack Test Plan</b>                      A stack test plan (including rationale and proposed test protocols) for assessing the benzene, ethylbenzene, toluene, xylene, hydrogen chloride, nitrogen oxides, particulate matter, sulphur oxides, total reduced sulphur compounds, and total volatile organic compounds in the emissions must be submitted to the District Director for review and written approval.</p>	Information - Other

**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 Permit including plans, programs and studies.
2. Require additional investigations, tests, surveys or studies.



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

Issued: December 14, 1992  
 Amended: May 11, 2018

Permit GVA0254

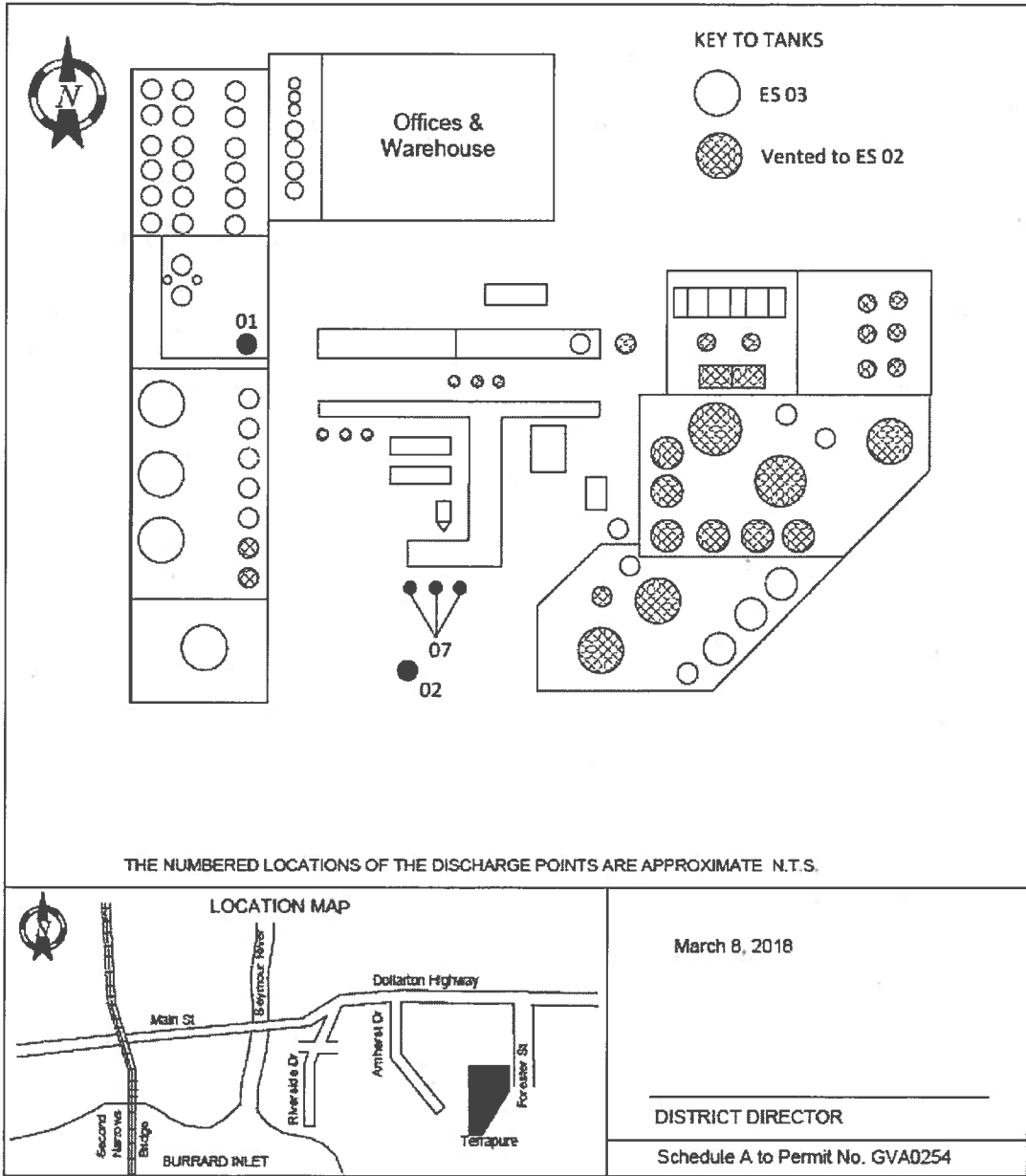
**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

**SECTION 4 – SITE PLAN**

LEGAL DESCRIPTION OF DISCHARGE SITE: PID: 007-254-091

Lot A, Plan VAP17800, District Lot 611, Group 1, New Westminster Land District, (EXPL PL 14925) OF LOT B

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



Issued: December 14, 1992  
Amended: May 11, 2018

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

Permit GVA0254