

PERMIT GVA0512

Pursuant to
Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008
and BC Environmental Management Act

Revolution Environmental Solutions Acquisition GP Inc. dba Terrapure

located at
#9 - 7483 Progress Way, Delta, BC V4G 1E1

is authorized to discharge air contaminants to the air from
a hazardous waste treatment facility


subject to the requirements in this Permit for the emission sources and works existing or planned on
March 31, 2015.

Contravention of any of these requirements is a violation of the bylaw
and may result in enforcement action.

This permit remains in force until December 31, 2025.

All previous versions of this Air Quality Management Permit are hereby rescinded and rendered null and void.

Issued: December 11, 1992
Amended: March 31, 2015


Kathy Preston, Ph.D., P.Eng.
Assistant District Director

GREATER 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 02: Labpack processing area discharging through a Stack(s).

MAXIMUM EMISSION FLOW RATE: **147** m³/min
MAXIMUM ANNUAL OPERATING HOURS: **3400** hrs/yr

MAXIMUM EMISSION QUALITY:

1. 50 mg/m³ Hydrogen Chloride
2. 26 mg/m³ Hydrogen Fluoride Expressed as Fluoride (includes fumes and mist).
3. 380 mg/m³ Nitrogen Oxides Expressed as Nitrogen Dioxide
4. 180 mg/m³ Sulphur dioxide
5. 102 mg/m³ Total Hydrocarbons Expressed as Methane (CH₄)
6. 3.6 mg/m³ Trace Metals:Class I (Pb, Sb, Cu, Mn, V, Zn)
7. 0.7 mg/m³ Trace Metals:Class II (As, Cr, Co, Ni, Se, Te)
8. 0.15 mg/m³ Trace Metals:Class III (Tl, Cd, Hg)
9. 50 mg/m³ Particulate Matter
10. 5% Opacity.
11. Odorous Air Contaminant(s): None past the plant boundary such that the District Director determines that pollution has occurred.
12. Chemical Contaminants: The maximum allowable emission concentration (EC) for each emitted chemical contaminant with a Threshold Limit Value (TLV) is such that the sum of the individual EC/TLV ratios for all such contaminants in any single emission is less than 10.

WORKS AND PROCEDURES:

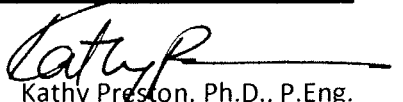
Activated carbon absorption unit and related appurtenances, together with good operating practices.

EMISSION SOURCE 03: Laboratory fume hood discharging through two Stacks.

MAXIMUM EMISSION FLOW RATE: **34** m³/min
MAXIMUM ANNUAL OPERATING HOURS: **3640** hrs/yr

MAXIMUM EMISSION QUALITY:

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1. Odorous Air Contaminant(s): None past the plant boundary such that the District Director determines that pollution has occurred.
2. Chemical Contaminants: The maximum allowable emission concentration (EC) for each emitted chemical contaminant with a Threshold Limit Value (TLV) is such that the sum of the individual EC/TLV ratios for all such contaminants in any single emission is less than 10.

WORKS AND PROCEDURES:

Good operating practices.

EMISSION SOURCE 04: Flammable material consolidation operations discharging through two Vents.

MAXIMUM EMISSION FLOW RATE: 255 m³/min

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

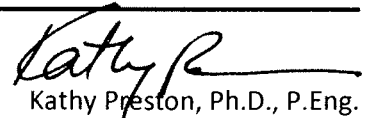
MAXIMUM EMISSION QUALITY:

1. 102 mg/m³ Total Hydrocarbons Expressed as methane (CH₄)
2. 50 mg/m³ Particulate Matter
3. 5% Opacity.
4. Odorous Air Contaminant(s): None past the plant boundary such that the District Director determines that pollution has occurred.
5. Chemical Contaminants: The maximum allowable emission concentration (EC) for each emitted chemical contaminant with a Threshold Limit Value (TLV) is such that the sum of the individual EC/TLV ratios for all such contaminants in any single emission is less than 10.

WORKS AND PROCEDURES:

Good operating practices.

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SECTION 2 – GENERAL REQUIREMENTS AND CONDITIONS

A. AMENDMENTS

The terms and conditions of this permit may be amended, as authorized by applicable legislation. New and modified sources must receive authorization prior to start-up.

B. POLLUTION

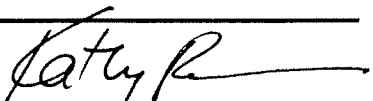
Notwithstanding any conditions in this permit, no person shall discharge or allow or cause the discharge of any air contaminant so as to cause pollution as defined in the Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008 and the Environmental Management Act.

C. STANDARD CONDITIONS AND DEFINITIONS

Unless otherwise specified, the following applies to this permit:

1. Gaseous volumes are corrected to standard conditions of 20° Celsius & 101.325 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;
 - 8% O₂ for wood fuel;
 - 15% O₂ for turbines.
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 6 minute average in accordance with the provincial "Source Testing Code for the Visual Measurement 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 hrs/yr and to those periods during which the primary authorized fuel is not available. Fuel oil sulphur content shall not exceed 15 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_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 (June 1995, CCME-EPC-87E)" shall be adhered to for all applicable tanks unless otherwise stated in this permit.
11. Authorized 'Maximum Annual Operating Hours' of 8760 hrs/yr for an emission source is equivalent to authorization for continuous operation of the emission source for an entire calendar year, including leap years.

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

Air contaminants discharged from any natural gas-fired heating, ventilation or air conditioning systems for buildings and any internal combustion engines 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.

E. AUTHORIZED WORKS AND PROCEDURES

Works and procedures, which this permit authorizes to control the discharge of air contaminants, shall be employed during all operating periods of the related facilities. The permit holder shall regularly inspect and maintain all such works in good repair.

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

F. BYPASSES


The discharge of contaminants which have bypassed authorized control works during non-emergency conditions is prohibited unless approval has been obtained in writing from the District Director.

G. EMERGENCY PROCEDURES

In the event of an emergency that prevents compliance with a requirement(s) of this permit, that requirement(s) shall be suspended for such time as the emergency continues or until otherwise directed by the District Director, provided that:

1. Due diligence was exercised in relation to the process, operation or event that caused the emergency and that the emergency occurred notwithstanding this exercise of due diligence; and,
2. The District Director is notified at the first available opportunity of the emergency 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. Due diligence is exercised in shutting down related processes and/or taking action to restore compliance in the shortest possible time frame, unless specified otherwise in this permit or by written notice from the District Director.

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Notwithstanding 1, 2 and 3 above, the District Director may specify contingency actions to be implemented to protect human health and the environment while authorized works and/or standard operating procedures are being restored.

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.

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SECTION 3 – REPORTING REQUIREMENTS

A. MONITORING REQUIREMENTS AND REPORTING

Unless otherwise approved 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 approval from the District Director.

A minimum of 3 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 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 permit 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
N/A	N/A	N/A	N/A	N/A	N/A	N/A

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B. INFORMATION REPORTING REQUIREMENTS

The permit 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
Facility	March 31, 2015	On or before March 31 for each subsequent year.	Written report detailing the types and amounts of waste material processed in the preceding calendar year.	Information - Other
Facility	March 31, 2015	On or before March 31 for each subsequent year.	Written report providing details of the types, amounts and end use of organic solvents and organic solvent-containing materials used in the preceding calendar year.	Solvent Use
Facility	March 31, 2015	On or before March 31 for each subsequent year.	Written report detailing the organic storage tank capacity, the material stored and the annual throughput for each tank for the preceding calendar year.	Information - Other
02, 03, 04	March 31, 2015	On or before March 31 for each subsequent year.	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.	Operating Period
02	March 31, 2015	On or before March 31 for each subsequent year.	Written report indicating the change out frequency, carbon condition and action taken or proposed to solve any problems detected for the carbon absorption unit.	Information - Other

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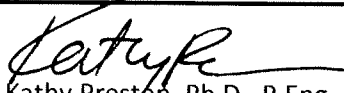
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C. AMENDED OR ADDITIONAL REQUIREMENTS

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.

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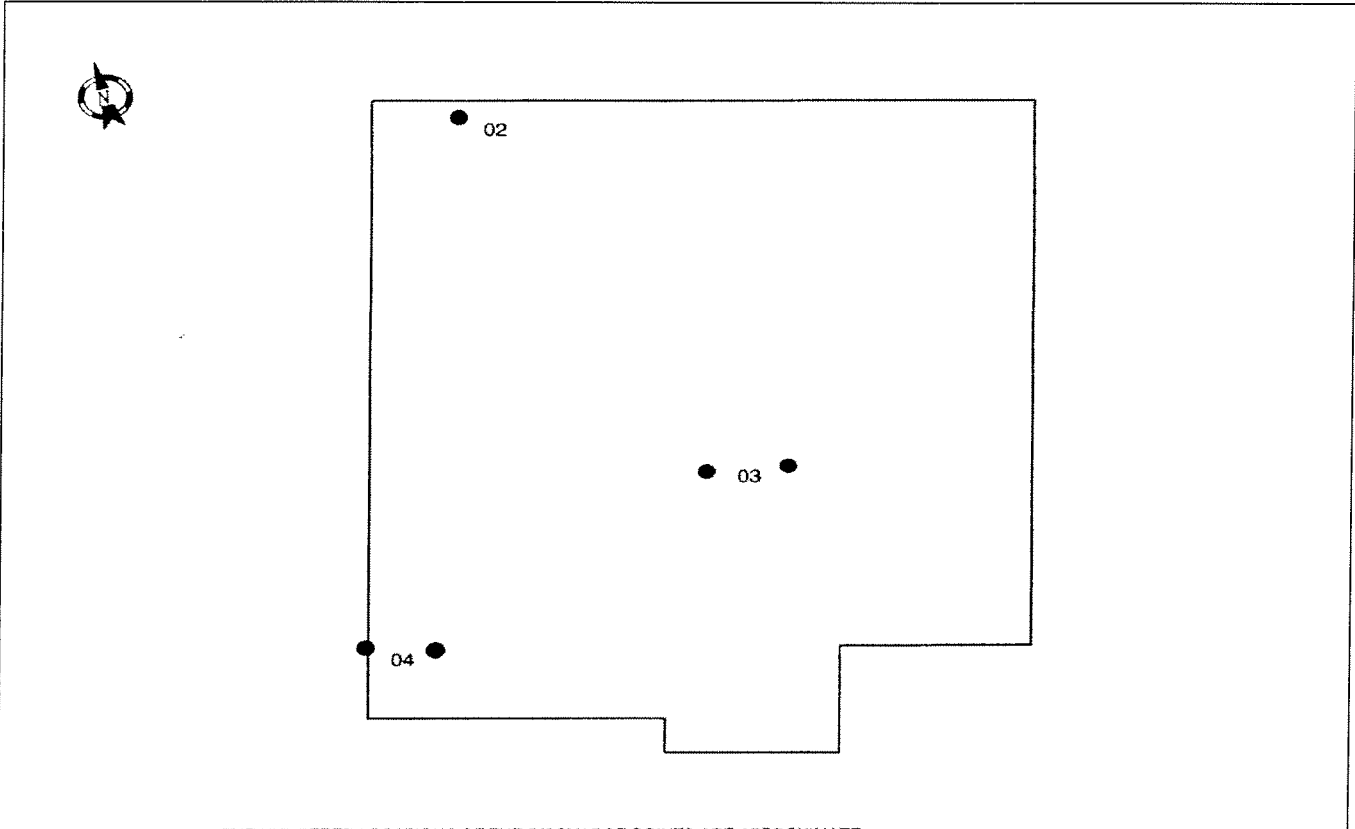
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SECTION 4 – SITE PLAN

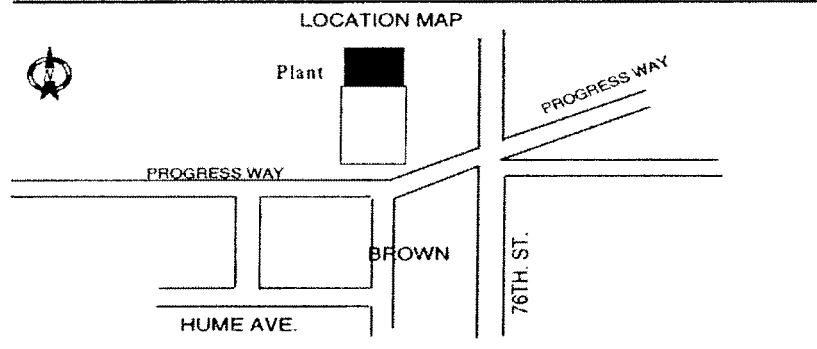
LEGAL DESCRIPTION OF DISCHARGE SITE:

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




THE NUMBERED LOCATIONS OF THE DISCHARGE POINTS ARE APPROXIMATE

N.T.S.



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