



PROPOSED AMENDED PERMIT GVA1088

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:

Harvest Fraser Richmond Organics Ltd.
doing business as Harvest
(the "Permittee")

To Authorize:

the discharge of air contaminants to the air from
A Composting, Anaerobic Digester, and Combined Heat and Power Facility
(the "Facility")

Located at:

7028 York Road, Richmond, BC V6W 0B1

Effective Period:

The terms and conditions set out in the Permit apply to the existing or planned works as of
September 4, 2018 and this permit will expire on April 30, 2020.

All previous versions of the Permit are invalid.

Issued: September 30, 2016
Amended:

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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 01: Combined Heat and Power Unit discharging through a Stack(s).

MAXIMUM EMISSION FLOW RATE: **74** m³/min

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

MAXIMUM EMISSION QUALITY:

1. 500 mg/m³ Nitrogen Oxides corrected to 0°C and 5% O₂
2. 100 mg/m³ Sulphur Oxides corrected to 0°C and 5% O₂
3. 1000 mg/m³ Total Volatile Organic Compounds corrected to 0°C and 5% O₂
4. 10 mg/m³ Particulate Matter
5. 5% Opacity.

WORKS AND PROCEDURES:

GE Jenbacher JMS 320 GS-B.L internal combustion engine set firing biogas and associated heat recovery system (CHP) together with good combustion and operating practices.

Biogas supplied to the CHP must be desulphurized to less than 100 ppm Total Reduced Sulphur (as H₂S) prior to combustion. Desulphurization must consist of an alkaline scrubber maintained at pH greater than 8.0 and associated bioreactor and related appurtenances.

The Permittee must keep written records pertaining to the inspection frequency, engine condition and maintenance carried out on the GE Jenbacher engine, biogas desulphurization processes and related appurtenances. The records must be kept on site and be made available for inspection by Greater Vancouver Regional District Officers ("Officers").

The Permittee must not schedule maintenance, other than minor routine maintenance, on the CHP, biogas desulphurization unit or related appurtenances, between May and September inclusive, unless the Permittee submits for review and comment, at least 90 days in advance, a Facility Emissions Control Plan which includes but is not limited to:

- (a) A timeline for the work, from initial curtailment leading to the shutdown until all biogas is diverted back to the CHP,

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- (b) Estimated daily emissions of TVOC (as methane), SO₂, and TRS (as H₂S) from Emission Sources 01, 02, 03, 05 and 06, from initial curtailment leading to the shutdown until all biogas is diverted back to the CHP, and
- (c) Procedures to be taken to minimize emissions.

In the event of an emergency that requires unscheduled maintenance between the months of May and September inclusive the District Director must be notified as per Section 2E of this permit.

In addition to the maintenance requirements above, pH of the desulphurization scrubber is to be continuously monitored and maintained in a manner acceptable to the District Director.

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 02: Emergency Flare discharging through a Stack(s).

MAXIMUM EMISSION FLOW RATE: 5 m³/min

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM PRIMARY BURNER INPUT FIRING RATE: 0.1 GJ/h

MAXIMUM EMISSION QUALITY:

1. 5% Opacity.

WORKS AND PROCEDURES:

Smokeless flare equipped with a continuous propane fired pilot flame (with automatic re-ignition system) together with a diesel powered back-up generator and flow metering system using good combustion practices and operating procedures outlined in the approved Standard Operating Procedure.

Maximum number of hours the flare system is authorized for use in flaring biogas is 300 hours per year.

Scheduled maintenance (other than routine maintenance) must not occur between the months of May and September inclusive.

Upon any flaring event the Permittee must notify the District Director at the first available opportunity. If applicable, the cause(s) and remedial actions to prevent the recurrence are to be reported as soon as practicable. Notification must be made to Metro Vancouver's 24-hour number: 604-436-6777, or to regulationenforcement@metrovancover.org

Times of flaring and estimates of volume of gas flared must be recorded in a manner acceptable to the District Director. Records of flaring events must be kept on site and be made available for inspection by Officers.

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The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 03: Energy Garden Building discharging through a biofilter.

MAXIMUM EMISSION FLOW RATE: **1150** m³/min

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

MAXIMUM EMISSION QUALITY:

1. 17.5 mg/m³ Ammonia
2. 10 ppbv Hydrogen Sulphide
3. 10 mg/m³ Total Volatile Organic Compounds

By **the later** of January 31, 2020 **or on the day the Anaerobic Digester is restarted**,

µg/m³ Total Aldehydes = as approved by the District Director,

µg/m³ Total Ketones = as approved by the District Director,

µg/m³ Total Amines = as approved by the District Director,

µg/m³ Total Ammonia = as approved by the District Director,

µg/m³ Total Reduced Sulphur Compounds = as approved by the District Director,

µg/m³ Total Organic Sulphur Compounds = as approved by the District Director,

µg/m³ Total Volatile Fatty Acids = as approved by the District Director, and

emission quality limits for other air contaminants as approved by the District Director.

WORKS AND PROCEDURES:

The Energy Garden building must be kept under negative pressure with all air to be collected and directed to the associated biofilter at all times and includes any time that any doors are open but not limited to the following:

Doors to the Energy Garden building (including man way doors) may be opened for the time required for a piece of equipment to enter or leave to:

- (a) receive raw materials for processing in the associated anaerobic digestion percolation tunnels or for pre-treatment prior to placement on the CASP;
- (b) remove materials from the percolation tunnels or processing area to be placed in the on-site covered aerated static pile (CASP) system or transferred offsite;
- (c) receive or remove equipment;
- (d) perform periodic maintenance or inspections of the tunnels, process area or any other associated areas located in this building.

Doors are to be closed at all other times.

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By February 28, 2017 The Permittee must install maintain differential pressure gauges to monitor continuously and record weekly the differential pressure in the Energy Garden Building.

By February 28, 2017 Doors to the Energy Garden building used for the receipt and removal of materials from the AD percolation tunnel system must be replaced by automatically rapid open and close.

By June 1, 2017, All highly-putrescible material other than packaged food waste must be received, handled, ground, and mixed inside a building kept under negative pressure, with all doors closed, and with all air collected and directed to approved emission control works. For clarity, food waste commingled with green waste is not considered highly-putrescible material.

By June 1, 2017, All materials removed from the percolation tunnels must be processed and treated according to procedures in the approved revised Digestate Odour Mitigation Plan.

The Permittee must maintain good housekeeping practices in and around the Facility together with good operating practices at all times for all processing and emission control equipment.

The Permittee must maintain the biofilter in good operating condition and in such a manner that the biofilter media temperature is between 10 and 45 degrees Celsius, the moisture content of the biofilter media is between 40% and 70% by weight, and the pH of the biofilter is between 5.0 and 8.0.

The minimum biofilter dimensions authorized are 24.4 metres by 11.6 metres with a minimum media depth of 2 metres. Additional media must be placed on the biofilter within 3 days if TVOC concentrations from this source exceed authorized levels or the District Director determines based on inspection or complaint data that this source may be contributing to excess odour emissions. An alternate remedial action may be considered if supporting information is provided with the request.

The Permittee must conduct weekly visual inspections of the biofilter to determine if the biofilter is settling, channeling or cracking. The Permittee must measure and record the velocity, pH, pressure and temperature of the biofilter system on a monthly basis. The Permittee must maintain records of each inspection. The pressure drop across the biofilter must be measured and recorded on a weekly basis in a manner acceptable to the District Director

The biofilter media must be replaced by November 30, 2016 and thereafter within 24 months of the last replacement date, or as required by the District Director. Alternate media and replacement schedule may be considered if supporting information is provided with the request.

At the first available opportunity following the Permittee becoming aware that the biofilter is not in good working order, the Permittee must take all necessary steps to repair or correct any deficiencies. The Permittee must also report such deficiencies to the District Director as soon as possible and report

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any steps taken, or proposed to remedy the deficiencies within 7 days thereafter. Reporting must be made to regulationenforcement@metrovanancouver.org.

If the above requirements are not being met the Permittee must take immediate steps to remedy the issue and inform the District Director as soon as possible.

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

The Permittee must notify the District Director at least 30 days prior to restarting any Energy Garden operations, including restarting the Anaerobic Digester.

EMISSION SOURCE 04: Waste Receiving and Handling discharging through a Storage Pile(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:

All material handling, including screening, associated with this source must be conducted in such a manner as to minimize fugitive dust and odours together with good operating practices and procedures.

Yard Waste must be moved onto the CASP or into Energy Garden operations within seven days of receipt.

Food Wastes and all other putrescible and compostable material must be processed within 24 hours of receipt either by placing onto the CASP or into Energy Garden operations.

Any highly odorous material such as pure (non-commingled) food waste must be mixed with Yard Waste or other carbonaceous material within four hours of receipt.

By June 1, 2017, all highly-putrescible material other than packaged food waste must be received, handled, ground, and mixed inside a building kept under negative pressure, with all doors closed, with all air collected and directed to approved emission control works. For clarity, food waste commingled with green waste is not considered highly-putrescible material.

From June 1, 2017 to October 31, 2017 and from June 1, 2018 to October 31, 2018, the Permittee must limit the monthly receipt of commingled waste at this Source for subsequent placement on

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either CASP to a quantity that the District Director has determined to be 70% of the average monthly rate from June through October 2016. For clarity, this restriction does not apply to commingled waste processed in the Energy Garden.

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

The Permittee must not use ES04 for receipt, storage or handling of materials when there is material at ES11. The Permittee must not use ES11 for receipt, storage or handling of materials when there is material at ES04.

The Permittee must notify the District Director 48 hours prior to switching operations between ES04 and ES11.

EMISSION SOURCE 05: Covered Aerated Static Pile Composting System Southwest discharging through a biofilter.

MAXIMUM EMISSION FLOW RATE: **1000** m³/min
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

1. **80** mg/m³ Total Volatile Organic Compounds

By January 31, 2020,

$\mu\text{g}/\text{m}^3$ Total Aldehydes = as approved by the District Director,

$\mu\text{g}/\text{m}^3$ Total Ketones = as approved by the District Director,

$\mu\text{g}/\text{m}^3$ Total Amines = as approved by the District Director,

$\mu\text{g}/\text{m}^3$ Total Ammonia = as approved by the District Director,

$\mu\text{g}/\text{m}^3$ Total Reduced Sulphur Compounds = as approved by the District Director,

$\mu\text{g}/\text{m}^3$ Total Organic Sulphur Compounds = as approved by the District Director,

$\mu\text{g}/\text{m}^3$ Total Volatile Fatty Acids = as approved by the District Director, and

emission quality limits for other air contaminants as approved by the District Director.

WORKS AND PROCEDURES:

The covered aerated static pile (CASP) composting system must be kept under negative pressure consistent with approved Best Management Practices for operation of such systems with all air exhausted to a biofilter.

The Permittee must maintain good housekeeping practices in the Facility together with good operating practices at all times for all processing and emission control equipment associated with this source.

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Any highly odorous material such as pure (non-commingled) food waste must be mixed with Yard Waste or other carbonaceous material within four hours of receipt to achieve: moisture content between 50% and 60%, carbon-to-nitrogen ratio between 25:1 and 35:1, and bulk density less than 600 kilograms per cubic metre.

Until May 31, 2017, CASP pile heights must not exceed 6.0 metres.

After June 1, 2017, CASP pile heights must not exceed 3.0 metres.

Permittee must keep a record of weekly measurements of pile height.

After February 1, 2018, the Permittee must not place any material on any portion of the CASP unless that portion of the CASP has been replaced in accordance with the approved CASP Aeration System and Biofilter Replacement Plan.

After June 1, 2018 no discharge from this source is authorized unless the entire CASP and the biofilter have been replaced in accordance with the approved CASP Aeration System and Biofilter Replacement Plan.

An approved cover must be applied to all portions of the CASP less than 4 days old.

By March 31, 2018 additional negative pressure must be applied to all portions of the CASP less than 4 days old.

By January 1, 2017 the saturation oxygen concentration in the liquid phase in the CASP must be equal to or above 2.0 ppm for 80% of all measurements as determined by the approved oxygen monitoring plan.

By June 1, 2018 the saturation oxygen concentration in the liquid phase in the CASP must be equal to or above 2.0 ppm for 90% of all measurements as determined by the approved oxygen monitoring plan.

By January 1, 2019 the saturation oxygen concentration in the liquid phase in the CASP must be equal to or above 2.0 ppm for 92% of all measurements as determined by the approved oxygen monitoring plan.

The Permittee must maintain the biofilter in good operating condition and in such a manner that, the moisture content of the biofilter media is between 40% and 70% by weight and the pH of the biofilter is between 5.0 and 8.0.

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Until March 31, 2018, the biofilter media temperature must be maintained between 25 and 60 degrees Celsius. By April 1, 2018, the biofilter media temperature must be maintained between 25 and 45 degrees Celsius.

The minimum biofilter dimensions authorized are 38.1 metres by 28.4 metres with a minimum media depth of 2 metres. Additional media must be placed on the biofilter within 3 days if VOC concentrations from this source exceed authorized levels or the District Director determines based on inspection or complaint data that this source may be contributing to excess odour emissions. An alternate remedial action may be considered if supporting information is provided with the request.

The Permittee must conduct weekly visual inspections of the biofilter to determine if the biofilter is settling, channeling or cracking. The Permittee must maintain records of each weekly inspection. The Permittee must measure and record the velocity, pressure and temperature of the biofilter system on a monthly basis. The pressure drop across the biofilter must be measured and recorded on a weekly basis in a manner acceptable to the District Director.

Biofilter media must be replaced by April 30, 2017 and thereafter within 18 months of the last replacement date, or as required by the District Director. Alternate media and replacement schedule may be considered if supporting information is provided with the request.

At the first available opportunity following the Permittee becoming aware that the biofilter is not in good working order, the Permittee must take all necessary steps to repair or correct any deficiencies. The Permittee must also report such deficiencies to the District Director as soon as possible and report any steps taken, or proposed to remedy the deficiencies within 7 days thereafter.

If the above requirements are not being met the Permittee must take immediate steps to remedy the issue and inform the District Director as soon as possible.

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 06: Covered Aerated Static Pile Composting System Northeast discharging through a biofilter.

MAXIMUM EMISSION FLOW RATE: **1000** m³/min
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

1. 80 mg/m³ Total Volatile Organic Compounds

By January 31, 2020,
µg/m³ Total Aldehydes = as approved by the District Director,

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$\mu\text{g}/\text{m}^3$ Total Ketones = as approved by the District Director,
 $\mu\text{g}/\text{m}^3$ Total Amines = as approved by the District Director,
 $\mu\text{g}/\text{m}^3$ Total Ammonia = as approved by the District Director,
 $\mu\text{g}/\text{m}^3$ Total Reduced Sulphur Compounds = as approved by the District Director,
 $\mu\text{g}/\text{m}^3$ Total Organic Sulphur Compounds = as approved by the District Director,
 $\mu\text{g}/\text{m}^3$ Total Volatile Fatty Acids = as approved by the District Director, and
emission quality limits for other air contaminants as approved by the District Director.

WORKS AND PROCEDURES:

The covered aerated static pile (CASP) composting system must be kept under negative pressure consistent with approved Best Management Practices for operation of such systems with all air exhausted to a biofilter.

The Permittee must maintain good housekeeping practices in the Facility together with good operating practices at all times for all processing and emission control equipment associated with this source.

Any highly odorous material such as pure (non-commingled) food waste must be mixed with Yard Waste or other carbonaceous material within four hours of receipt to achieve: moisture content between 50% and 60%, carbon-to-nitrogen ratio between 25:1 and 35:1, and bulk density less than 600 kilograms per cubic metre.

By April 1, 2018, the Permittee must not place digestate or any highly odorous material such as pure (non-commingled) food waste on any portion of the CASP unless that portion of the CASP has been replaced in accordance with the approved CASP Aeration System and Biofilter Replacement Plan.

Until May 31, 2017, CASP pile heights must not exceed 6.0 metres.

After June 1, 2017, CASP pile heights must not exceed 3.0 metres.

Permittee must keep a record of weekly measurements of pile height.

After June 1, 2019 no discharge from this source is authorized unless the entire CASP and biofilter has been replaced in accordance with the approved CASP Aeration System and Biofilter Replacement Plan.

An approved cover must be applied to all portions of the CASP less than 4 days old.

~~By April 1, 2019 additional negative pressure must be applied to all portions of the CASP less than 4 days old.~~

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By January 1, 2017 the saturation oxygen concentration in the liquid phase in the CASP must be equal to or above 2.0 ppm for 80% of all measurements as determined by the approved oxygen monitoring plan.

By June 1, 2018 the saturation oxygen concentration in the liquid phase in the CASP must be equal to or above 2.0 ppm for 85% of all measurements as determined by the approved oxygen monitoring plan.

~~By June 1, 2019 the saturation oxygen concentration in the liquid phase in the CASP must be equal to or above 2.0 ppm for 90% of all measurements as determined by the approved oxygen monitoring plan.~~

~~By January 1, 2020 the saturation oxygen concentration in the liquid phase in the CASP must be equal to or above 2.0 ppm for 92% of all measurements as determined by the approved oxygen monitoring plan.~~

The Permittee must maintain the biofilter in good operating condition and in such a manner that the moisture content of the biofilter media is between 40% and 70% by weight and the pH of the biofilter is between 5.0 and 8.0.

Until March 31, 2019, the biofilter media temperature must be maintained between 25 and 60 degrees Celsius. By April 1, 2019 the biofilter media temperature must be maintained between 25 and 45 degrees Celsius.

The minimum biofilter dimensions authorized are 38.1 metres by 28.4 metres with a minimum media depth of 2 metres. Additional media must be placed on the biofilter within 3 days if VOC concentrations from this source exceed authorized levels or the District Director determines based on inspection or complaint data that this source may be contributing to excess odour emissions. An alternate remedial action may be considered if supporting information is provided with the request.

The Permittee must conduct weekly visual inspections of the biofilter to determine if the biofilter is settling, channeling or cracking. The Permittee must maintain records of each weekly inspection. The Permittee must measure and record the velocity, pressure and temperature of the biofilter system on a monthly basis. The pressure drop across the biofilter must be measured and recorded on a weekly basis in a manner acceptable to the District Director.

Biofilter media must be replaced by May 31, 2017 and thereafter within 18 months of the last replacement date, or as required by the District Director. Alternate media and replacement schedule may be considered if supporting information is provided with the request.

At the first available opportunity following the Permittee becoming aware that the biofilter is not in good working order, the Permittee must take all necessary steps to repair or correct any deficiencies.

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The Permittee must also report such deficiencies to the District Director as soon as possible and report any steps taken, or proposed to remedy the deficiencies within 7 days thereafter.

If the above requirements are not being met the Permittee must take immediate steps to remedy the issue and inform the District Director as soon as possible.

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 07: Aging Piles discharging through a Storage Pile(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:

The placement of any material resulting from Anaerobic Digestion is prohibited at this source.

All material handling, which includes but is not limited to transfer from the CASP system, associated with this source must be conducted in such a manner as to minimize fugitive dust and odours.

The aging piles associated with this source must be covered with a minimum of 15 centimetres of cedar or screened middlings or any other high carbon or high alkaline, non-odorous cover material as soon as reasonably possible after they have been transferred from the composting area and finished being constructed into piles.

Aging pile dimensions must not exceed a height of 5 metres and a width of 10 metres in any direction.

The Permittee must keep a record of monthly measurements of pile height and oxygen concentration between 1.0 metres and 1.5 metres from the top of the pile

Permittee must minimize and mitigate the occurrence of anaerobic conditions at this source. Unless otherwise approved by the District Director, anaerobic conditions means temperature and oxygen concentration levels in the compost that result in a saturation oxygen concentration in the liquid phase of less than 2 mg/L (2 ppm). Permittee must maintain a log of remedial actions taken when anaerobic conditions occur.

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The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 08: Finished Compost Screening discharging through a biofilter.

MAXIMUM EMISSION FLOW RATE: **552** m³/min

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

MAXIMUM EMISSION QUALITY:

1. 15 mg/m³ Total Volatile Organic Compounds

By January 31, 2020,

~~µg/m³ Total Aldehydes = as approved by the District Director,~~

~~µg/m³ Total Ketones = as approved by the District Director,~~

~~µg/m³ Total Amines = as approved by the District Director,~~

~~µg/m³ Total Ammonia = as approved by the District Director,~~

~~µg/m³ Total Reduced Sulphur Compounds = as approved by the District Director,~~

~~µg/m³ Total Organic Sulphur Compounds = as approved by the District Director,~~

~~µg/m³ Total Volatile Fatty Acids = as approved by the District Director, and~~

~~emission quality limits for other air contaminants as approved by the District Director.~~

WORKS AND PROCEDURES:

~~The screening of any material resulting from Anaerobic Digestion is prohibited at this source.~~

The partially enclosed screening operation must be exhausted to a biofilter at all times the Komptech XXL (or equivalent approved by the District Director) screener is in use.

The Permittee must maintain good housekeeping practices in the Facility together with good operating practices at all times for all processing and emission control equipment.

Scheduled maintenance (other than minor routine) on the primary screening unit is not to occur between the months of May through September inclusive unless this maintenance can be completed prior to the next screening event.

All material handling associated with this source must be conducted in such a manner as to minimize fugitive dust and odours together with good operating practices and procedures.

The Permittee must maintain the biofilter in good operating condition and in such a manner that the biofilter media temperature is between 10 and 45 degrees Celsius, the moisture content of the biofilter media is between 40% and 70% by weight, and the pH of the biofilter is between 5.0 and 8.0.

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The pressure drop across the biofilter must be measured and recorded on a weekly basis in a manner acceptable to the District Director.

The minimum biofilter dimensions authorized are 7.9 metres by 22.9 metres with a minimum media depth of 2 metres. Additional media must be placed on the biofilter within 3 days if VOC concentrations from this source exceed authorized levels or the District Director determines based on inspection or complaint data that this source may be contributing to excess odour emissions. An alternate remedial action may be considered if supporting information is provided with the request.

The Permittee must conduct weekly visual inspections of the biofilter to determine if the biofilter is settling, channeling or cracking. The Permittee must maintain records of each weekly inspection. The Permittee must measure and record the velocity, pressure and temperature of the biofilter system on a monthly basis.

The biofilter media must be replaced by November 30, 2016 and thereafter within 24 months of the last replacement date, or as required by the District Director. Alternate media and replacement schedule may be considered if supporting information is provided with the request.

At the first available opportunity following the Permittee becoming aware that the biofilter is not in good working order, the Permittee must take all necessary steps to repair or correct any deficiencies. The Permittee must also report such deficiencies to the District Director as soon as possible and report any steps taken, or proposed to remedy the deficiencies within 7 days thereafter.

If the above requirements are not being met the Permittee must take immediate steps to remedy the issue and inform the District Director as soon as possible.

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 08A: Finished Compost Screening Auxiliary Screener discharging through a Transfer Point(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:

The screening of any material resulting from Anaerobic Digestion is prohibited at this source.

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At all times the material to be screened must satisfy at least one of the following three conditions:

- (a) The organic material respiration rate is no more than 10 milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry using the TMECC Method 05-08-A – SOUR: Specific Oxygen Uptake Rate (April 7, 2002);
- (b) The organic material emits no more than four (4) milligrams CO₂-C per gram of organic material per day, as measured using the TMECC Method 05-08-B – Carbon Dioxide Evolution Rate (April 7, 2002); or
- (c) The organic material has a Solvita® Maturity Index of seven (7) or greater, as measured using the TMECC Method 05-08-E – Solvita® Maturity Test (April 7, 2002).

For up to 300 hours per year, material to be screened is exempt from the above conditions as long as all of the following conditions are met:

- (1) the UBC Odour Risk Forecast does not predict a High Risk Condition,
- (2) the Main Screener (Source 08) has been inoperable for more than 24 consecutive hours,
- (3) the Main Screener (Source 08) is not expected to be operable within 48 hours, and
- (4) the Permittee has notified the District Director prior to screening.

Notwithstanding the above, the Permittee must not screen anaerobic compost at this source. Unless otherwise approved by the District Director, anaerobic compost means compost with a temperature and oxygen concentration that results in a saturation oxygen concentration in the liquid phase of less than 2 mg/L (2 ppm).

All material handling associated with this source must be conducted in such a manner as to minimize fugitive dust and odours together with good operating practices and procedures.

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 09: Overs, Middlings and Fines Storage Piles discharging through a Storage Pile(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:

The storage of any material resulting from Anaerobic Digestion is prohibited at this source.

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All material handling associated with this source must be conducted in such a manner as to minimize fugitive dust and odours.

The Permittee must not store anaerobic compost at this source. Unless otherwise approved by the District Director, anaerobic compost means compost with a temperature and oxygen concentration that results in a saturation oxygen concentration in the liquid phase of less than 2 mg/L (2 ppm).

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 10: Finished Products Storage Piles discharging through a Storage Pile(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:

The storage of any material resulting from Anaerobic Digestion is prohibited at this source.

All material handling associated with this source must be conducted in such a manner as to minimize fugitive dust and odours.

The Permittee must not store anaerobic compost at this source. Unless otherwise approved by the District Director, anaerobic compost means compost with a temperature and oxygen concentration that results in a saturation oxygen concentration in the liquid phase of less than 2 mg/L (2 ppm).

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 11: Waste Receiving and Handling discharging through a Storage Pile(s).

EFFECTIVE DATE: August 3, 2018

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

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MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:

All material handling, including screening, associated with this source must be conducted in such a manner as to minimize fugitive dust and odours together with good operating practices and procedures.

Yard Waste must be moved onto the CASP or into Energy Garden operations within seven days of receipt.

Food Wastes and all other putrescible and compostable material must be processed within 24 hours of receipt either by placing onto the CASP or into Energy Garden operations.

Any highly odorous material such as pure (non-commingled) food waste must be mixed with Yard Waste or other carbonaceous material within four hours of receipt.

All highly-putrescible material other than packaged food waste must be received, handled, ground, and mixed inside a building kept under negative pressure, with all doors closed, with all air collected and directed to approved emission control works. For clarity, food waste commingled with green waste is not considered highly-putrescible material.

From August 3, 2018 to October 31, 2018, the Permittee must limit the monthly receipt of commingled waste at this Source for subsequent placement on the East CASP to a quantity that the District Director has determined to be 70% of the average monthly rate from June through October 2016. For clarity, this restriction does not apply to commingled waste processed in the Anaerobic Digester.

The Permittee must notify the District Director regarding any equipment brought on site that may materially affect emissions from this source.

The Permittee must not use ES04 for receipt, storage or handling of materials when there is material at ES11. The Permittee must not use ES11 for receipt, storage or handling of materials when there is material at ES04.

The Permittee must notify the District Director 48 hours prior to switching operations between ES04 and ES11.

EMISSION SOURCES 1 THROUGH 11: Facility Wide Emissions

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The District Director will monitor malodorous impacts of air contaminants emitted from the Facility at **or beyond** the distances specified in Table 1. If the District Director determines on the balance of probabilities that malodorous impact from the Facility air contaminant emissions exceeds the limits specified in Table 1, then the Facility must immediately stop receiving, **for placement on any CASP,** any food waste, including commingled food and yard waste, until such time as the District Director determines that the source of malodours has been addressed.

The District Director will base his/her decision on, but not be limited to, the following factors:

- Written reports of observations by (an) Officer(s) of malodours from the Facility for 10 minutes in any hour, at **or beyond** the distances in Table 1;
- Wind direction at the time of the observations; and
- The odour described in the observations.

For clarity, the impacts will be considered addressed if no malodours due to-Facility emissions of air contaminants are observed by an Officer at the distances and frequencies specified in Table 1, or the District Director is satisfied that adequate measures have been taken to address the cause of the malodour observations.

Table 1

Calendar year	Distance from Facility Fenceline	Maximum allowed number of days of malodour from Facility in any 14 day period
2017	5 kilometres	4 days
2018	4 kilometres	3 days
2019	3 kilometres	2 days

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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, must be employed during all operating periods of the related sources. The Permittee must 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, other than changes required for routine maintenance. Any changes to or replacement of authorized works, procedures or emission sources that may materially increase the Facility's emissions of air contaminants must be approved by the District Director in advance of operation.

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 must 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 permit, no person must 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 must:

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 must 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 must 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% 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 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 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 hours per year and to those periods during which the primary authorized fuel is not available. Fuel oil sulphur content must not exceed 15 milligrams per kilogram (mg/kg) and emissions during fuel oil firing must 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.

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9. Nitrogen Oxides (NO_x) 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 (June 1995, CCME-EPC-87E)" must 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.
12. Any approval or determination made by the District Director under the terms of this Permit and after the effective date of this Permit is deemed to be a "decision" for the purposes of appeal under section 100 of the *Environmental Management Act*.

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 must 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 by the District Director prior to any sampling or analysis, all measurements must 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 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 must 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 must be reported in the metric units which are used in this permit. These submissions must include process data relevant to the operation of the source of the emissions and the performance of the emission control works.

The Permittee must 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
01	September 30, 2017 Within 45 days of	On or before September 30 for each subsequent year, but not	Written report detailing the measured discharge rate and concentration of Particulate Matter, Sulphur Oxides (as SO ₂), Nitrogen Oxides (as NO ₂) and Total Volatile	Total Volatile Organic Compounds, Nitrogen Oxides, Sulphur Oxides,	EPA Test Method 25A, EPA Test Method 6C, EPA Test Method 7E,	Stack

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
	restarting the CHP	within six months following restarting the CHP	<p>Organic compounds (as methane) in the emissions.</p> <p>Sampling must be conducted according to a sampling plan previously approved by the District Director.</p> <p>For the purposes of this requirement, "restarting the CHP" means continuous operation of the CHP engine for 72 continuous hours.</p> <p>Effective date: September 4, 2018</p>	Particulate Matter	Metro Vancouver AQ02/02/1.00M	
05, 06, 08, 03	October 31, 2016	Quarterly, on or before January 31, July 31 and October 31 of each year	Submit a written report including all consultant and laboratory reports detailing the Odour concentration and discharge rate in the emissions. Sample collection and analysis must be consistent with procedures specified in EN 13725:2003 "Air Quality-- Determination of Odour Thresholds by Dynamic Dilution	Odour Concentration	Those approved by the District Director	Monitoring-- Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>Olfactometry". Equivalent methods may be proposed to the District Director at least 90 days prior to sampling.</p> <p>Hedonic tone must also be reported.</p> <p>Testing must be conducted once per calendar quarter. The report must be submitted no later than the last day of the first month of the following quarter. Testing and reporting is waived for the first calendar quarter (January, February, and March inclusive).</p> <p>Emission testing on the biofilters, as required within this permit, must be concurrent with Odour testing.</p>			
01, 02, 03, 04, 05, 06, 07, 08, 08A, 09, 10, 11	As required by the District Director	As required by the District Director to a maximum of four times in a calendar year	The District Director may require the Permittee to undertake source testing at one or more specified sources to determine the quantity of emissions in odour units if the District Director determines that	Odour Concentration	Those approved by the District Director	Monitoring-- - Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>over a 7 day period an excessive number of complaints received by Metro Vancouver are attributable to the Facility, based on the balance of probabilities, and an approved Metro Vancouver staff member observes malodours from the Facility at a distance of five kilometres on two or more days within that 7 day period. Testing must be done within five working days of the District Director requiring it.</p> <p>The five working days advance notice requirement is waived for this testing.</p> <p>When required, the Permittee must submit a written report including all consultant and laboratory reports detailing the odour concentration and discharge rate in the emissions. Sample collection and analysis must be consistent with procedures specified in EN 13725:2003 "Air</p>			

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>Quality– - Determination of Odour Thresholds by Dynamic Dilution Olfactometry”. Equivalent methods may be proposed to the District Director at least 90 days prior to sampling.</p> <p>Hedonic tone must also be reported.</p> <p>The report must be submitted within 30 days of the District Director requiring the testing.</p> <p>Emission testing on the biofilters, as required within this permit, must be concurrent with Odour testing.</p>			
08, 03, 05, 06	October 31, 2016	Quarterly, on or before April 30, July 31, October 31 and January 31 of each year	<p>Submit a written report outlining and summarizing the following: The removal efficiency of Total Volatile Organic Compounds (VOCs) across each biofilter.</p> <p>The testing of VOCs at the inlet of each biofilter must include the volumetric flow rate, contaminant</p>	Total Volatile Organic Compounds	Those approved by the District Director	Monitoring– - Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>concentration and contaminant loading to that biofilter. VOCs must be reported on a total (as methane) basis.</p> <p>The testing of VOCs on the outlet of each biofilter must include the volumetric flow rate, contaminant concentration and contaminant loading from that biofilter. VOCs must be reported on a total (as methane) basis.</p> <p>Inlet and outlet testing must be conducted simultaneously unless otherwise specified.</p> <p>Sampling must be conducted according to a sampling plan previously approved by the District Director.</p>			

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>The information provided by the inlet and outlet emissions concentrations must be used to determine the percent removal efficiency, by weight.</p> <p>Testing must be conducted once per calendar quarter. The report must be submitted no later than the last day of the first month of the following quarter.</p> <p>Testing of odour, as required within this permit, must be concurrent with emission testing.</p>			
05, 06	October 31, 2018	Quarterly, on or before, January 31, April 30, July 31, and October 31 of each year	<p>Submit a written report outlining the results of testing for Total Volatile Organic Compounds (VOCs) from the surface of the CASPs.</p> <p>At least 90 days prior to conducting the testing a draft test plan, including rationale and proposed test protocols, must be submitted to</p>	Total Volatile Organic Compounds	Those approved by the District Director	Monitoring-- Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>the District Director for comment, revision and approval.</p> <p>Testing must be conducted once per calendar quarter. The report must be submitted no later than the last day of the first month of the following quarter.</p> <p>Testing must include volumetric flow rates and contaminant flux rates in grams TVOC (as methane)/square meter/second.</p> <p>Testing of odour, as required within this permit, must be concurrent with emission testing.</p>			
05	July 31, 2018	Quarterly, on or before October 31, January 31, April 30, and July 31 of each year	Submit a written report of testing of specific odorous air contaminants at both the inlet and outlet of the CASP biofilter. The measurement reporting limit (the lowest concentration that can be measured by the selected method) for the outlet testing must be less than	Odorous Air Contaminants	Those approved by the District Director	Monitoring— Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>standardized published odour detection thresholds (the concentration at which an odour can be detected by 50% of the panel), of the following groups of compounds: aldehydes, ketones, amines, ammonia, reduced sulphur compounds, organic sulphur compounds, and volatile fatty acids.</p> <p>If not previously submitted, at least 90 days prior to conducting the testing a draft test plan, including rationale and proposed test protocols, must be submitted to the District Director for comment, revision and approval.</p> <p>Testing must be conducted once per calendar quarter. The report must be submitted no later than the last day of the first month of the following quarter.</p>			

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			Testing of odour, as required within this permit, must be concurrent with emission testing.			
06	July 31, 2019	Quarterly, on or before October 31, January 31, April 30, and July 31 of each year	Submit a written report of testing of specific odorous air contaminants at both the inlet and outlet of the CASP biofilters. The measurement reporting limit (the lowest concentration that can be measured by the selected method) for the outlet testing must be less than standardized published odour detection thresholds (the concentration at which an odour can be detected by 50% of the panel), of the following groups of compounds: aldehydes, ketones, amines, ammonia, reduced sulphur compounds, organic sulphur compounds, and volatile fatty acids. If not previously submitted, at least 90 days prior to conducting the testing a draft test plan, including	Odorous Air Contaminants	Those approved by the District Director	Monitoring— Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>rationale and proposed test protocols, must be submitted to the District Director for comment, revision and approval.</p> <p>Testing must be conducted once per calendar quarter. The report must be submitted no later than the last day of the first month of the following quarter.</p> <p>Testing of odour, as required within this permit, must be concurrent with emission testing.</p>			
03, 08	July 31, 2017 Within 45 days of restarting the Anaerobic Digester	Annually, on or before July 31 of each year	Submit a written report of testing of specific odorous air contaminants from the outlet of the Energy Garden and screening biofilters. The measurement reporting limit (the lowest concentration that can be measured by the selected method) for the outlet testing must be less than standardized published odour detection thresholds (the	Odorous Air Contaminants	Those approved by the District Director	Monitoring-- Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>concentration at which an odour can be detected by 50% of the panel), of the following groups of compounds: aldehydes, ketones, amines, ammonia, reduced sulphur compounds, organic sulphur compounds, and volatile fatty acids.</p> <p>At least 90 days prior to conducting the testing a draft test plan, including rationale and proposed test protocols, must be submitted to the District Director for comment, revision and approval.</p> <p>Testing of odour, as required within this permit, must be concurrent with emission testing.</p>			
03	September 30, 2017	Annually, on or before September 30 of each year	<p>Submit a written report outlining and summarizing the following: The removal efficiency of hydrogen sulphide, Total Reduced Sulphur Compounds (TRS) and ammonia.</p>	Hydrogen Sulphide, Total Reduced Sulphur Compounds, Ammonia	Those approved by the District Director	Monitoring-- Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>The testing of hydrogen sulphide, TRS and ammonia at the inlet to the biofilter must include the volumetric flow rate, contaminant concentration and contaminant loading to the biofilter. TRS must be reported on a total (as H₂S) basis.</p> <p>The testing of hydrogen sulphide, TRS and ammonia at the outlet of the biofilter must include the volumetric flow rate, contaminant concentration and contaminant loading from the biofilter. TRS must be reported on a total (as H₂S) basis.</p> <p>Inlet and outlet testing must be conducted simultaneously unless otherwise specified.</p> <p>Sampling must be conducted according to a sampling plan</p>			

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>previously approved by the District Director.</p> <p>Testing must be conducted during tunnel unloading, and with all building doors closed for at least 30 minutes prior to and during sampling.</p> <p>The measurement reporting limit (the lowest concentration that can be measured by the selected method) for the outlet testing must be less than standardized published odour detection thresholds (the concentration at which an odour can be detected by 50% of the panel).</p> <p>The information provided by the inlet and outlet emissions concentrations must be used to</p>			

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>determine the percent removal efficiency, by weight.</p> <p>Testing of odour, as required within this permit, must be concurrent with emission testing.</p>			
04, 09, 10, 11	October 31, 2016	Annually, on or before October 31 of each year	<p>Submit a written report including all consultant and laboratory reports detailing the Odour concentration and discharge rate in the emissions. Sample collection and analysis must be consistent with procedures specified in EN 13725:2003 "Air Quality- - Determination of Odour Thresholds by Dynamic Dilution Olfactometry. Equivalent methods may be proposed to the District Director at least 90 days prior to sampling.</p> <p>Hedonic tone must also be reported.</p> <p>This odour testing must be conducted concurrently with other</p>	Odour Concentration	Those approved by the District Director	Monitoring- - Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>odour and emission testing as required within this permit.</p> <p>For ES04 and ES11, testing must occur at the one source that is actively in use at the time of testing.</p>			
07	October 31, 2016	Annually, on or before October 31 of each year	<p>Submit a written report including all consultant and laboratory reports detailing the Odour concentration and discharge rate in the emissions as well as the Solvita Maturity Index of the material moved from the CASP and placed for curing.</p> <p>Hedonic tone must also be reported.</p> <p>Odour sample collection and analysis must be consistent with procedures specified in EN 13725:2003 "Air Quality – Determination of Odour Thresholds by Dynamic Dilution Olfactometry". Equivalent methods may be proposed to the District Director at least 90 days prior to sampling.</p>	Odour Concentration	Those approved by the District Director	Monitoring-- Other

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>Solvita Maturity Index must be consistent with TMECC Method 05-08-E.</p> <p>Solvita Maturity testing must be conducted at the beginning of the curing stage and prior to being covered. Odour testing must be conducted within one day of the curing pile being covered.</p> <p>This odour testing must be conducted concurrently with other odour and emission testing as required within this permit.</p>			
05, 06	April 30, 2017	Quarterly, on or before July 31, October 31 and January 31, and April 30 of each year	Submit a written report outlining the results of monthly oxygen concentration (in ppm) and temperature (in degrees Celsius) measurements in the CASPs, as well as the corresponding saturation oxygen concentration (in ppm) conducted during the previous calendar quarter according to the	Oxygen concentration, temperature, saturation oxygen concentration	Those approved by the District Director	Monitoring - other

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			approved plan. This report must also include any remedial actions taken to address any readings equivalent to a saturation oxygen concentration less than 2.0 ppm.			
01, 02	October 31, 2016	Annually on or before October 31 of each year. Within 45 days of restarting the CHP and then annually on or before October 31 of each subsequent year, but not less than six months following restarting of the CHP	<p>Submit a written report including all consultant and laboratory reports detailing the Total Reduced Sulphur (TRS) concentration in the biogas that is directed to the combined heat and power unit or the flare systems from the previous calendar month.</p> <p>Sampling must be conducted according to a sampling plan previously approved by the District Director.</p> <p>Emission testing, as required within this permit, must be concurrent with TRS sampling.</p>	TRS	Those approved by the District Director	Monitoring - other

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			For the purposes of this requirement, "restarting the CHP" means continuous operation of the CHP engine for 72 continuous hours.			

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B. INFORMATION REPORTING REQUIREMENTS

The Permittee must 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, 2017	On or before March 31 for each subsequent year	<p>Submit a written report in a format approved by the District Director providing details of the types and amounts of principal products produced and principal raw materials used in the preceding calendar year.</p> <p>The principal raw materials diverted to the CASP must be broken down into the following categories:</p> <ul style="list-style-type: none"> - Commingled municipal curbside “greenbin” waste (yard waste/food waste) - ICI source separated organics (this must be further separated into vegetative and non vegetative/mixed subcategories) - Yard Waste, land clearing debris and clean wood waste - Material from the energy garden - any other materials not specifically noted <p>Principal raw materials must be reported as “as-received” (wet) tonnes.</p> <p>In addition to the above, the principal raw materials used in the Energy Garden or sent offsite to other compost facilities or sites must be reported and must be broken down into the following categories:</p>	Materials and Products

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			<ul style="list-style-type: none"> - Commingled municipal curbside "greenbin" waste (yard waste/food waste) - ICI source separated organics - Green Waste - any other materials not specifically noted <p>Principal products must include tonnes of finished compost, sulphur and cubic metres of biogas produced as well as total megawatts of electricity produced.</p>	
01, 05, 06, 02, 08, 03, 04, 07, 08A, 09, 10, 11	March 31, 2017	On or before March 31 for each subsequent year	Submit a written report providing details of the total number of hours and days operated in the preceding calendar year. Records are to be maintained in a written bound log or other format approved by the District Director.	Operating Period
01, 05, 06, 02, 08, 03, 04, 07, 08A, 09, 10, 11	December 31, 2016	On or before September 31 for each subsequent year	<p>Submit a written report outlining planned maintenance and capital activities, including timelines, for the control works associated with the sources, for the 12 months beginning October 1 of the current calendar year and ending the following September 30. This report must include but not be limited to the following:</p> <ul style="list-style-type: none"> - Inspection schedules for all biofilters and related equipment, including the CASP ventilation systems, - Replacement schedules for biofilter media, - Identification of any activities deferred from or cancelled in the preceding 12 months, including rationale for those deferrals or cancellations, - Plans for additional maintenance and improvements for the coming year. 	Information - Other

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01, 05, 06, 02, 08, 03	October 31, 2016	Quarterly, on or before April 30, July 31, October 31 and January 31 of each year	<p>Submit a written report outlining measures taken during the preceding calendar quarter or proposed to improve the efficiency of the emission control works, including maintenance activities on the control works associated with these sources. This report must include but not be limited to the following:</p> <ul style="list-style-type: none"> - Inspection (including frequency) of the biofilter odour control system for each source, - Maintenance of and repairs to pipes in the CASPs, - Inspection of the emergency flare and CHP systems and, - a summary of the findings as determined from the inspections regarding the condition of works and related appurtenances and all remedial action(s) taken or proposed to solve any problems noted. <p>Records are to be maintained in a manner and format acceptable to the District Director.</p>	Information - Other
Facility	July 31, 2017	On or before July 31 for each subsequent year	<p>Submit for review and comment by the District Director an update to the written Progressive Odour Management Plan (POMP) prepared by a Qualified Professional. For the purposes of this permit, a Qualified Professional is an individual registered with a professional organization who has the necessary education, experience, accreditation and knowledge and may be reasonably relied on to provide advice related to the POMP because it is within his or her area of expertise.</p> <p>The plan must include procedures that could be implemented under various meteorological and operational conditions to reduce odours and include, but</p>	Information - Other

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			<p>not be limited to, options to limit the operations of the auxiliary screener where operationally feasible. The Permittee will also investigate and consider additional options in the POMP that may be implemented to reduce odours.</p> <p>The Permittee will continue to investigate and consider supplemental fugitive dust mitigation systems to be used as back-up measures and include these option(s) in the Plan.</p> <p>This plan must 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 preventative maintenance, leak detection and repair in the CHP and other units), feedstock handling, review of feedstocks etc.). This must also include the handling of digestate and other residuals from the Energy Garden percolation tunnels and the depackaging unit, and use of the UBC Odour Risk Forecast to avoid high risk activities.</p> <p>Accountability can include the development of responsibility charts, contact info, response procedures to upset conditions, response to odour complaints, communication plans etc.</p> <p>Progressive mitigation can include several levels of response which can include: self detection, correction and reporting, implementation of new or</p>	

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			<p>changing of existing operational procedures, restriction of feedstocks and ultimately retrofitting of technologies or controls works if so required.</p> <p>Subsequent year submissions must consider any recommended updates to the plan and a summary of any findings, responses and proposed remedial actions as outlined by the plan.</p> <p>For greater clarity the Permittee is not required to implement the remedial actions or other improvements and procedures contained within the report.</p>	
01, 02, 05, 06, 08, 03, Facility	October 31, 2019	As required by the District Director	<p>Submit for review and comment a written report of the results of a dispersion modelling assessment of specific odorous air contaminants and odour units.</p> <p>Modelling must be conducted in accordance with the most recent version of the British Columbia Air Quality Dispersion Modelling Guideline. The dispersion model plan must be developed using the most recent version of the Metro Vancouver dispersion model plan template and submitted to the District Director for review, comment, revision and approval by February 28, 2019.</p> <p>This report must be based on emission measurements collected following replacement of the CASPs during normal operation and reasonable estimates where measurements do not exist, as agreed to in the dispersion model plan. Model scenarios must also include any modifications made (or proposed) to reduce emissions and improve dispersal of odours and emissions in the community.</p>	

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
			A draft final result report must be submitted for review by and comments from the District Director by August 31, 2019.	
08, 08A	October 31, 2016	Quarterly, on or before April 30, July 31, October 31 and January 31 of each year	Submit a log that includes all dates and times when the finished compost screening was operated during the previous calendar quarter. This log must include but not be limited to dates of operation, start and stop times, total daily operating hours for each source, UBC Odour Risk Forecasts for each day, any curtailment actions related to screening, and any mechanical failures. Remedial actions regarding mechanical failures must also be reported as per Section 2 of this permit.	Information - Other
03, 05, 06, 08	August 1, 2017	N/A	Submit for review and approval a written CASP Aeration System and Biofilter Replacement Plan to improve the performance of the CASPs, their associated odour treatment works, the Energy Garden biofilter, and the Screening Biofilter. This Plan is to be prepared by an independent third party Qualified Professional. For the purposes of this Permit, a Qualified Professional is an individual registered with a professional organization and who has the necessary education, experience, accreditation and knowledge and may be reasonably relied on to provide advice related to the Plan because it is within his or her area of expertise.	Information – Other
01, 02, 03, 04, 05, 06, 07, 08,	The later of November 30, 2019 or 90 days	N/A	Submit for review and approval a written Facility Odorous Emissions Impact Assessment report assessing the performance of upgrades made since 2016 along with a detailed Facility Odorous Emissions Impact Abatement Plan	Information – Other

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08A, 09, 10, 11, Facility	after restarting the Anaerobic Digester		<p>(collectively the “Plan”) to address any remaining performance gaps, taking into account all Facility emission sources. This Plan is to be prepared by an independent third party Qualified Professional. For the purposes of this Permit, a Qualified Professional is an individual registered with a professional organization and who has the necessary education, experience, accreditation and knowledge and may be reasonably relied on to provide advice related to the Plan because it is within his or her area of expertise.</p> <p>The Plan must propose improvements to odorous air contaminant prevention, collection, treatment and dispersion, and include engineering cost estimates and proposed timelines for implementation of new control works.</p> <p>The Plan must be supported by dispersion modelling.</p>	
05, 06	November 30, 2016	N/A	<p>Submit for review and approval a written Oxygen Sampling Plan which will assess the monthly saturation oxygen concentration via measurement of oxygen concentrations and temperatures within the covered aerated static piles following the guidance as outlined in the UK Environment Agency Odour Technical Guide 3 (version 1.0 19-July-2012).</p> <p>The sampling plan must include the following:</p> <ul style="list-style-type: none"> • Type of oxygen probe to be used including technical specifications • Type of thermocouple to be used including technical specifications • Depth at which measurements are to be taken • Number of measurements per pile • Plan drawing of measurement locations in each pile, including coordinates 	Information - Other

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			<ul style="list-style-type: none"> Sampling and mitigation procedures where measured saturation oxygen concentration is less than 2.0 ppm 	
03	December 31, 2016	N/A	Submit for review a written Digestate Treatment Pilot Design Plan which details options, with specific actions and timelines, to be investigated for management of percolation tunnel digestate in order to minimize odours.	Information - other
03	April 30, 2017 90 days prior to restarting the Anaerobic Digester	N/A	Submit for review and approval a revised written Digestate Odour Mitigation Plan which describes pilot results, and recommendations for steps to be taken, with timelines, in order to pre-treat or otherwise manage percolation tunnel digestate in a manner which minimizes odours. how percolation tunnel digestate will be processed and how odours from such processing will be mitigated prior to its removal from the Facility.	Information - other
03, 05, 06, 08	September 30, 2019 90 days prior to restarting the Anaerobic Digester	N/A	<p>Submit for review and approval a written proposal with recommendations for emission limits for the biofilter associated with the Energy Garden and the Screener two CASPs for the following groups of odorous air contaminants: total aldehydes, total ketones, total amines, total ammonia, total reduced sulphur compounds, total organic sulphur compounds, and total volatile fatty acids.</p> <p>The proposal must be supported by dispersion modelling.</p>	Information – other

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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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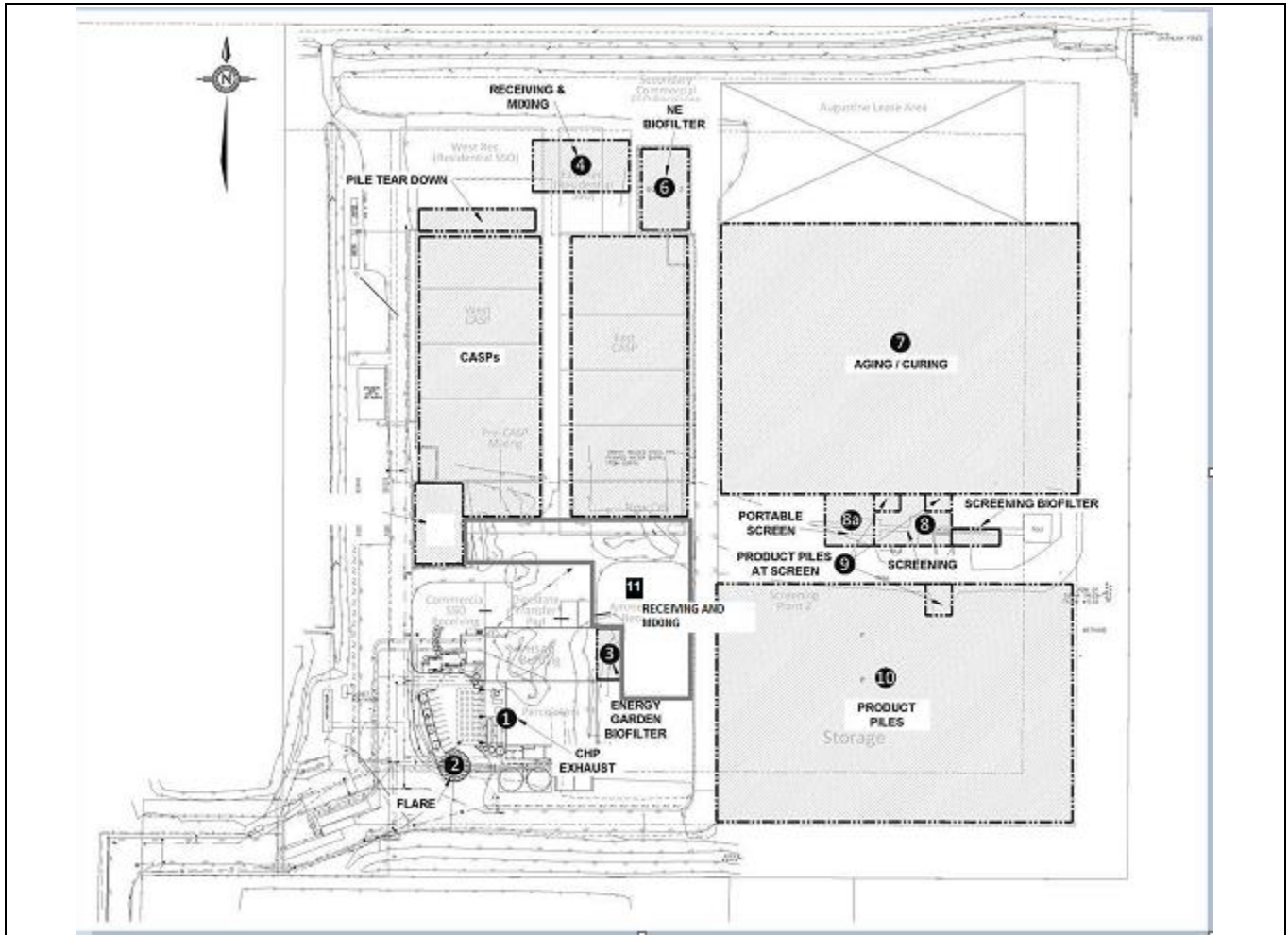
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SECTION 4 – SITE PLAN

LEGAL DESCRIPTION OF DISCHARGE SITE: to a portion of the land described as Lot 3 Sections 13 and 14, Block 4 North, Range 5 West, Plan 74529, New Westminster District.

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



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