Title V Air Pollution Control Permit Renewal Application

COVENTRY CLEAN ENERGY CORPORATION

Coventry, Vermont

Prepared for Coventry Clean Energy Corporation

File No. 3829.06

January 2023

SANBORN HEAD

Jay Hollingsworth
Air Quality and Climate Division
Davis Building, 4th Floor
1 National Life Drive
Montpelier, Vermont 05620-3802

January 27, 2023
File No. 3829.23

Re: Title V Air Pollution Control Permit Renewal Application
Coventry Clean Energy Corporation Landfill Gas-to-Energy Operation
Coventry, Vermont
#AOP-18-019

Dear Jay:

Sanborn, Head & Associates, Inc. (Sanborn Head) prepared the enclosed Title V Air Pollution Control Permit Renewal (application) for Coventry Clean Energy Corporation 's (CCEC's) landfill gas-to-energy facility in Coventry, Vermont. In accordance with the Vermont Air Quality and Climate Division's (VAQCD's) Air Pollution Control Regulations, CCEC is filing this renewal application to the Landfill Gas-to-Energy Operation's August 2018 Title V Air Pollution Control Permit to Construct and Operate (Permit No. AOP-18-019).

Please contact us with any questions.

Sincerely,
SANBORN, HEAD & ASSOCIATES, INC.

Jeffrey J. Doris
Project Manager

Heather H. Little
Project Director

MEC/JJD/HHL: mec

Encl. Title V Renewal Application

cc: Dave Kresock, CCEC
Louis Porter, CCEC
Emily Zambuto, Archaea

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1.0 INTRODUCTION

On behalf of Coventry Clean Energy Corporation (CCEC), Sanborn, Head & Associates, Inc. (Sanborn Head) prepared this Title V Air Pollution Control Permit (Title V Permit) Renewal Application (application) for the CCEC landfill gas-to-energy (LFGTE) facility in Coventry, Vermont. The current CCEC Title V Permit was issued by the Vermont Air Quality and Climate Division (VAQCD) on August 1, 2018 (Permit No. AOP-18-019).

New England Waste Services of Vermont, Inc. (NEWSVT) maintains a separate Title V Permit for landfill operations including landfill Phases I through VI and two 2,500 standard cubic feet per minute [scfm] open (i.e., utility) flares. The primary landfill gas (LFG) control devices are the LFGTE engines owned by CCEC, however, NEWSVT's flares are available to combust collected LFG that is not delivered to the LFGTE Operation. For air permitting, the CCEC LFGTE facility and the NEWSVT Landfill are considered a single source of air emissions. Emissions from the two operations are aggregated for purposes of regulatory compliance.

In accordance with the VAQCD's Air Pollution Control Regulations, CCEC is filing this application to renew the August 1, 2018 Permit at least six months ahead of the permit's expiration date of August 1, 2023. CCEC is a wholly owned subsidiary of Washington Electric Cooperative, Inc. (WEC). The power generated by the LFGTE Facility is delivered to the Vermont Electric Power Company (VELCO) grid for distribution to WEC's utility customers.

2.0 SITE INFORMATION

Project Name: CCEC LFGTE Facility Operation
Source: Landfill Gas-to-Energy (LFGTE) Facility

Facility Owner/Operator/Applicant: Coventry Clean Energy Corporation

Application Preparation: Sanborn, Head & Associates, Inc.

Responsible Official: Dave Kresock
Director of Engineering and Operations, CCEC

Contact Persons:

Dave Kresock 802-224-2334
CCEC
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East Montpelier, VT 05651

Jeffrey Doris 802-391-8507
Sanborn, Head & Associates, Inc.
187 Saint Paul Street, Suite 201
Burlington, Vermont 05401

Location of Source: 21 Landfill Lane (see Figures 1 through 3)
Coventry, VT 05825

3.0 SITE DESCRIPTION

The LFGTE Operation is permitted by Permit No. AOP-18-019 to use LFG recovered in the active gas collection system from the lined landfill as a fuel source. LFG is delivered to Caterpillar G3520C 1,600-kilowatt (kW) engine-generator units. There are currently five Caterpillar G3520C units installed at the site.

An active (i.e., with applied vacuum) landfill gas (LFG) collection system is installed in the lined landfill units (Phases I through IV and Phase VI) of the NEWSVT Landfill. The system includes a vacuum blower that extracts LFG through vertical wells and horizontal trenches to a header pipe that delivers the gas to electricity-generating engines and flare combustion devices where volatile organic compounds (VOCs), non-methane organic compounds (NMOCs), and hazardous air contaminants (HACs) are destroyed. The gas collected from the landfill is delivered to either the LFGTE engines (primary combustion devices) or utility flares (secondary combustion devices) via the active gas collection system. The locations of the LFGTE Operation and flares are shown on Figures 2 and 3.

Approximately 2,500 to 3,000 standard cubic feet per minute (scfm) of LFG collected from the lined landfill may be used as fuel in the five LFGTE engines. Additional gas collected from the lined landfill beyond the amount needed to fuel the engines is combusted in the two existing utility flares, each rated for 2,500 scfm. In addition to serving as secondary combustion devices, the utility flares have been sized to provide backup capacity for LFG combustion control.

The currently permitted landfill units (Phases I through VI) occupy approximately 144 acres on a larger parcel of land owned by NEWSVT. Lined and unlined landfill cells are located at the NEWSVT facility. The unlined landfill has been filled to design closure grades and consists of Areas A and B. The lined landfill is operational and consists of Phases I through IV and Phase VI.

3.1 New Source Performance Standards Regulatory Applicability

On September 27, 2021, CCEC became subject to the updated NSPS for MSW landfills, Subpart XXX, which replaced NSPS Subpart WWW. The active gas collection and control system (GCCS) is operated in general accordance with the New Source Performance Standards (NSPS) for Municipal Solid Waste (MSW) Landfills, specifically 40 CFR Part 60 Subpart XXX, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) for MSW Landfills, specifically 40 CFR Part 63 Subpart AAAA.

The LFGTE facility engines are operated in general accordance with the NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE), specifically 40 CFR Part 63 Subpart ZZZZ. Engine unit (serial no.) GZJ 00368 is operated in general accordance with the NSPS, specifically 40 CFR Part 60 Subpart JJJJ.

3.1.1 NESHAP Subpart AAAA Work Practice Standard

In the updated NESHAP Subpart AAAA, the requirement to maintain a Startup, Shutdown and Malfunction (SSM) plan and the requirement for SSM reporting have been removed. SSM procedures have been replaced by a work practice standard for when the GCCS is not operating

[Federal Register, March 26, 2020 and 40 CFR 63.1958(e)]. The NEWSVT semi-annual reports must describe the date, time, and duration when the GCCS was not operating and any periods during which an operating standard was exceeded.

NEWSVT will operate the system in accordance with 40 CFR 63.1955(c) so that collected LFG is conveyed to the control system designed and operated in compliance with 40 CFR 63.1959(b)(2)(iii). In the event the collection or control system is not operating, NEWSVT will follow the work practice standard from NESHAP Subpart AAAA [40 CFR 63.1958(e)]:

- The gas mover system must be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere must be closed within one (1) hour of the collection or control system not operating; and
- Efforts to repair the collection or control system must be initiated and completed in a manner such that downtime is kept to a minimum, and the collection and control system must be returned to operation.

CCEC is no longer required to maintain an SSM plan or to complete SSM forms. Instead, CCEC is required to monitor the periods when the LFGTE facility is operating and to include periods of downtime in the semi-annual reports.

3.1.2 Other Requirements of the Updated NESHAP Subpart AAAA

Other updates to NESHAP Subpart AAAA include:

- Wellfield temperature limit increased from 131 °F to 145 °F;
- Site-Specific Treatment System Monitoring Plan maintained by NEWSVT and data collection for the plan managed by CCEC;
    - LFG treatment system at the LFGTE compresses, filters, and dewaters the LFG, as described below;
        - The gas blower system extracts LFG from the landfill and compresses it to discharge from the blower system to the LFGTE facility;
        - The LFG passes through a primary filtering knockout pot to remove moisture and particulate matter (PM);
        - The LFG passes through a secondary (polishing) filtering knockout pot to remove additional moisture and PM as needed; and
        - The LFG passes through a gas chiller (i.e., gas cooler or heat exchanger) to remove additional moisture as needed.
- Surface emissions monitoring to record latitude and longitude coordinates of each exceedance using an instrument with an accuracy of at least four (4) meters and with the coordinates in decimal degrees with at least five (5) decimal places;
- Root Cause Analysis for temperature and pressure exceedances that take longer than 15 days to resolve;

- For exceedances that take 60 days or more to resolve, NEWSVT must include the root cause analysis in the semi-annual report;
- Corrective Action Analysis if the gas collection system does not meet NESHAP Subpart AAAA operational standard or approved alternative (e.g., for exceedances that last 60 days or more);
- For corrective actions for temperature or pressure expected to take more than 120 days, NEWSVT must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to VAQCD within 75 days of the initial exceedance;
- For wellfield temperature exceedances of 145 °F or an approved alternative, enhanced monitoring is required (e.g., weekly monitoring for temperature, smoke, smoldering ash, damage to the well, and oxygen, methane, and carbon monoxide [CO] concentrations). For a temperature of 165 °F or more in a vertical well, annual monitoring is required for the temperature of the landfill gas every 10 vertical feet of the well. If the temperature reaches 170 °F and the CO concentration reaches 1,000 ppmv, NEWSVT must report the date, time, well identifier, temperature and carbon monoxide reading via email to VAQCD within 24 hours.

4.0 OPERATIONAL INFORMATION

4.1 Nature of Operations

The CCEC Facility includes five Caterpillar G3520C 1,600-kilowatt (kW) engine-generator units, Siloxane Removal System (SRS), and LFG pretreatment system. The NEWSVT operation includes an MSW landfill (Standard Industrial Classification [SIC] Code 4953) and the two existing 2,500 scfm utility flares known (for air permitting purposes) as the Landfill Operation. The Landfill operation is considered part of the LFGTE Facility for the purposes of aggregating emissions although it is permitted under a separate Title V Permit.

Ancillary operations at the CCEC facility include vehicle and general facility maintenance and administrative functions. These ancillary operations are conducted in an engine housing and maintenance building.

NEWSVT's Facility Management Plan outlines "acceptable" and "unacceptable" waste streams for the active lined landfill, which is currently permitted to accept 600,000 tons of waste per year (tpy). In general, the following is a summary of the facility's list of "acceptable" and "unacceptable" wastes (there may be exceptions to each list):

<u>Acceptable wastes</u>

- Municipal solid waste;
- Construction and demolition debris (C&D);
- White goods which include appliances (stoves, washers, and dryers). These materials are not landfilled but are hauled off-site for recycling;
- Metals that may be removed from the waste stream for recycling;

- Non-friable asbestos waste which is received in the State-mandated condition (double bagged, sealed, and labeled), pending special handling requirements;
- Wastewater treatment plant sludge that meets specific requirements; and
- Certain special solid wastes that are not hazardous.

Unacceptable wastes

- Wastes prohibited by local, state, and Federal law;
- Hazardous wastes (as defined by the Federal and Vermont Hazardous Waste Rules);
- Untreated infectious waste;
- Liquid wastes;
- Contained gaseous wastes;
- Non-approved special wastes;
- Recyclables (aluminum, steel, glass, paper, cardboard, and plastics #1 and 2);
- Waste containerized liquids;
- Empty liquid waste containers greater than 30 gallons;
- Friable Asbestos (greater than 10 yards without prior approval);
- Electronic waste;
- Food scraps (organics and compostable kitchen wastes); and
- Leaf and yard debris, clean wood.

4.1.1 Lined Landfill

LFG is actively collected from the lined landfill. NEWSVT first installed the active GCCS in 1998 and has generally expanded the system on an annual basis.

LFG is collected from wells drilled into the landfill, horizontal collection trenches, and leachate piping cleanouts, all connected by piping to a blower system that exerts a vacuum to extract the gas from the landfill and deliver it to the control devices.

LFG is routed to a control system where it is combusted to destroy VOCs, NMOCs, and HACs. The control system consists of the LFGTE operation with five Caterpillar G3520C 1,600 kW engine-generator units, a 75 million British thermal unit per hour (MMBtu/hr) John Zink Company, LLC utility flare, and a 77.8 MMBtu/hr Parnel Biogas utility flare. (Note that LFG combustion capacity is limited by the blower system which has a rated capacity of 5,000 scfm at 50 percent methane.)

The control system is configured so that LFG can be combusted in the LFGTE engines and the flares simultaneously, although LFG is primarily delivered to the LFGTE facility, and the flares are generally used as backup control devices. Three of the engine-generator units began

operating on July 12, 2005, the fourth unit began operating on January 12, 2007, and the fifth unit began operating on June 22, 2009.

The locations of the existing lined landfill (Phases I through IV and Phase VI), proposed Phases V, the LFGTE Operation, and the flares, are shown on Figure 2.

4.1.2 LFGTE Operation

The location of the LFGTE Operation is shown on Figure 2. The LFGTE Operation is permitted to process LFG recovered in the active GCCS from the lined landfill to be used as a medium British thermal unit (Btu) fuel source. The Title V Permits for CCEC and NEWSVT allow for the delivery of the collected LFG to five (5) Caterpillar G3520C 1,600 kW engine-generator units that are owned, operated, and permitted (AOP-18-019) by CCEC subsidiary of Washington Electric Cooperative, Inc. (WEC). The power generated by the LFGTE Operation is delivered to the Vermont Electric Power Company (VELCO) grid for distribution to WEC's utility customers.

The LFGTE gas processing system consists of multiple stages to compress, dewater, and filter the raw LFG to be suitable for use in the Caterpillar engine-generator units. The first stage of the gas processing system uses a demister knock-out vessel with mesh pad, which relies on cyclone forces to remove free moisture in vapor form or water droplets. The knock-out vessel also filters larger particles or debris that may be extracted from the well-field. Condensate generated within the knock-out vessel is drained to the landfill leachate storage system for off-site disposal.

Demisted LFG is directed to the gas compression station, which consists of four (4) Roots-type positive displacement blower units (Kaeser Blower Model AN620F100BVE). The blowers are sized to provide the maximum LFG demand of up to five (5) Caterpillar G3520C engine-generator units at the required inlet feed pressure. The compression station has 100 percent redundant capacity to allow the LFGTE Operation to continue operating during routine and non-routine maintenance and repairs to one of the blower units.

The compressed gas passes though dual unit heat exchangers that cool the LFG and removes about 70 percent of the moisture in the gas through condensation in a separator vessel. The heat exchangers are supplied with water cooled by a mechanical chiller system. The final stage of the gas processing system consists of coalescing polishing filters that follow the dehydration equipment to produce a final gas quality with no greater than 0.10 micron particulates and a dew point of -20°F.

CCEC voluntarily installed a siloxane removal system (SRS) downstream of the gas processing system to minimize formation of siliceous deposits in the engines and allow for more efficient engine operation. The SRS consists of two temperature-swing non-carbon adsorptive desiccant media beds, a media regeneration skid, and a regeneration enclosed flare (SRS flare) for destruction of desorbed siloxanes. After processing in the SRS, the scrubbed gas is piped to the engine-generator units where it is combusted to generate electricity. Exhaust from each of the

engine-generator units is discharged through individual stacks.

4.1.3 Potential Air Emissions Sources

Some of the operations at the LFGTE facility that may emit regulated air pollutants include:

- Five (5) permitted Caterpillar G3520C 1,600 kW engine-generator units at the LFGTE Operation;
- Gas scrubbing system including a demister knock-out vessel, four (4) gas blower units, three (3) gas cooling units, a mechanical chiller for process water, and gas polishing filters (refer to process flow diagram in Appendix B);
- Siloxane removal system including a regen enclosed flare for destruction of desorbed siloxanes;
- One (1) 8,000-gallon lube oil supply tank;
- One (1) 2,000-gallon waste oil tank; and
- Two (2) 1,000-gallon glycol storage tanks.

Further operations at the site associated with the wellfield and gas collection operations that may emit regulated air pollutants include:

- Four (4) open, utility flares; two located at the lined landfill and two at the unlined landfill (upon relocation of unlined landfill waste the potential number of utility flares will be two (2) located at the lined landfill);
- Fugitive emissions of LFG that are not collected by the passive (unlined landfill) or active (lined landfill) gas collection systems (upon relocation of unlined landfill waste, the passive gas collection system will be removed);
- Four (4) leachate storage tanks (1 x 20,000-gallon, 1 x 30,000-gallon, and 2 x 438,000-gallon);
- One (1) 2,000-gallon waste oil tank at the maintenance garage;
- Two (2) 500-gallon waste oil tanks (one at the scale house and one at the maintenance garage);
- Two (2) 10,000-gallon diesel fuel tanks (one at the landfill fuel depot and one at the contractor staging area);
- One (1) 1,800-gallon diesel fuel delivery truck for fueling heavy equipment on-site;
- One (1) 50-gallon portable gasoline storage tank within a site pick-up truck used for fueling equipment on-site;
- Multiple motor, hydraulic, heating, and waste oil tanks, each containing less than 500 gallons of petroleum product;
- One (1) Safety-Kleen parts washer located at the maintenance garage;

- Four (4) portable space heaters located at the maintenance garage (2 x 110,000-British thermal unit per hour [Btu/hr], 1 x 175,000 Btu/hr, and 1 x 215,000 Btu/hr);
- Two (2) waste oil heaters located at the maintenance garage (300,000 Btu/hr each); and
- One (1) space heating unit located at the scale house (85,000 Btu/hr).

4.2 Equipment Specifications

Equipment specifications for the facility's five (5) electrical power generating Caterpillar G3520C engines have been provided previously and are not included herein.

4.3 Existing or Proposed Operating Limits

CCEC is not proposing to change operating limits on any equipment at the facility.

5.0 QUANTIFICATION OF AIR CONTAMINANT EMISSIONS

Neither CCEC nor NEWSVT are proposing changes to air emissions limits relative to the current Title V Permits. Air emissions related to LFG generation and collection/combustion including the emissions from the LFGTE facility's five (5) electrical power generating Caterpillar G3520C engines, active GCCS utility flares, and fugitive emissions not captured by the active system, were quantified and presented in the September 2014 Title V Air Pollution Control Permit Application and are not repeated herein. Based on prior discussions with VAQCD, we understand that other air pollutant sources at the site, including some of those listed in section 4.1.4 of this report, are considered negligible or exempt from quantification for the purposes of this application.

5.1 Landfill Gas Generation Estimates

To assess whether the CCEC LFGTE facility and NEWSVT's flare system are adequately sized for the expected gas collection in the future, we estimated the maximum gas generation and collection rates for landfill Phases I through VI using the USEPA's "Landfill Gas Emissions Model (LandGEM), Version 3.03," based on historical and projected waste acceptance rates, site-specific inputs, and the assumption that waste from the unlined landfill will be relocated to the lined landfill during Phase V construction.

The following information concerning the LFG generation was provided to CCEC by NEWSVT. Estimates for LFG generation rates are based on known annual waste acceptance rates and the permitted waste acceptance rate of 600,000 tpy. NEWSVT anticipates that the expanded facility (i.e., Phases I through VI) will reach capacity in 2039.

We considered the effect of Vermont's Universal Recycling Law (Act no. 148) on LFG generation during the years after which leaf, yard, clean wood debris, and food scraps were banned from landfills, 2020.

The LandGEM model results demonstrate that the maximum LFG collection rate is not expected to exceed 5,000 scfm. This is the flow that was modeled for the September 2014 Title V Air

Pollution Control Permit Application. No increases are required in this application for the LFG combustion capacity or for the permitted emission limits.

See Appendix A for additional information on LFG generation/collection rate estimates. The control system is configured so that LFG can be combusted in the LFGTE facility and the flares simultaneously, although LFG is primarily delivered to the LFGTE facility, and the flares are generally used as backup control devices. CCEC monitors LFG flow to the facility. In the event of LFG collection greater than projected LFG collection that requires an increase to the combustion capacity of 2,500 scfm to the engines and of 5,000 scfm to the two NEWSVT utility flares, CCEC will submit an air license application for the additional combustion capacity.

5.2 Air Emissions Estimates

No changes to air emissions from the facility are being proposed in this application. Because there are no proposed changes, we have not provided emissions estimates tables.

5.3 Most Stringent Emission Rate

A Most Stringent Emission Rate (MSER) analysis is not required for any pollutant for this renewal application because no major or significant actual emissions increase is being proposed that would make the application subject to the MSER requirements of §5-502 of the Vermont Air Pollution Control Regulations (VAPCRs).

The Title V Permit contains existing MSER determinations for engine emissions of CO and NO_x. CCEC satisfies the requirements of the MSER determinations by performing annual stack testing for the one engine subject to NSPS Subpart JJJJ engine at the facility and by performing stack testing on the other four engines at the facility every other year.

5.4 Hazardous Most Stringent Emission Rate Analysis

A Hazardous Most Stringent Emission Rate (HMSER) analysis is not required for any HAC for this renewal application because no changes are being proposed that would make the application subject to the HMSER requirements of §5-261 of the VAPCRs. We propose for HMSER to remain unchanged from the existing Title V Permit. The existing HMSER is for:

- NMOCs and Hydrogen Sulfide (H_2S);
- Formaldehyde and Acetaldehyde; and
- Silica.

5.4.1 HMSER for NMOCs and H_2S

The Title V Permit requires installation and operation of a properly designed LFG collection and control system with 98 percent destruction of NMOCs or a maximum NMOC combustion device outlet concentration of 20 parts per million by volume on a dry basis (ppmvd)(as hexane equivalent) at 3% oxygen.

5.4.2 HMSER for Formaldehyde and Acetaldehyde

The Title V Permit requires maintenance and operation of the Cat G3520C engines to maintain good combustion efficiency. CO emissions are used as a surrogate for formaldehyde and

acetaldehyde emissions as well as evidence of proper combustion of NMOC/HACs and H_2S. The CO limits for the Cat G3520C engines are 3.5 g/bhp-hr and 17.3 lb/hr (each). Also, the engines must be stack tested to demonstrate:

- 3.1 g/bhp-hr and 15.3 lb/hr (each) once every two years; and
- 2.75 g/bhp-hr and 13.5 lb/hour (each) once every 6 years.

5.4.3 HMSER for Silica

Total particulate matter (PM) emissions will be used as a surrogate for silica emissions. Total PM emissions will be limited to less than 20.5 tons per year from the Facility.

Based on sampling during 2022, the pre-treatment siloxane concentration has increased. The pre-treatment siloxane concentration based on sampling during 2022 was 226.3 mg/m^3 at 50 percent methane. Based on the PM emissions equation included in the Title V Permit, the combined facilities are on track to exceed 20.5 tons per year of PM at that pre-treatment concentration. CCEC is planning to perform the 2023 round of annual siloxane sampling during January 2023.

CCEC will coordinate with VAQCD as needed to refine the test methods for siloxanes to demonstrate compliance with the 20.5 tons per year threshold. New laboratory procedures may be available to obtain more accurate measurements for the concentration of siloxane compounds in the landfill gas. Also, if needed following 2023 sampling for siloxanes, including alternative laboratory procedures, CCEC will discuss other alternatives to assess PM emissions to demonstrate compliance, such as stack testing on the enclosed flare of the siloxane removal system (if technically feasible).

6.0 AIR DISPERSION MODELING

An ambient air quality impact evaluation (AQIE) is not required by the VAPCRs because an increase in emissions is not being proposed.

7.0 APPLICABLE REQUIREMENTS AND CERTIFICATION OF COMPLIANCE

A summary table that identifies applicable State and Federal requirements and certification of compliance with these requirements is provided in Appendix B. A completed "Certification of Information Accuracy and Consent for Access to Property" form, with signatures from an authorized representative of CCEC, is provided in Appendix C.

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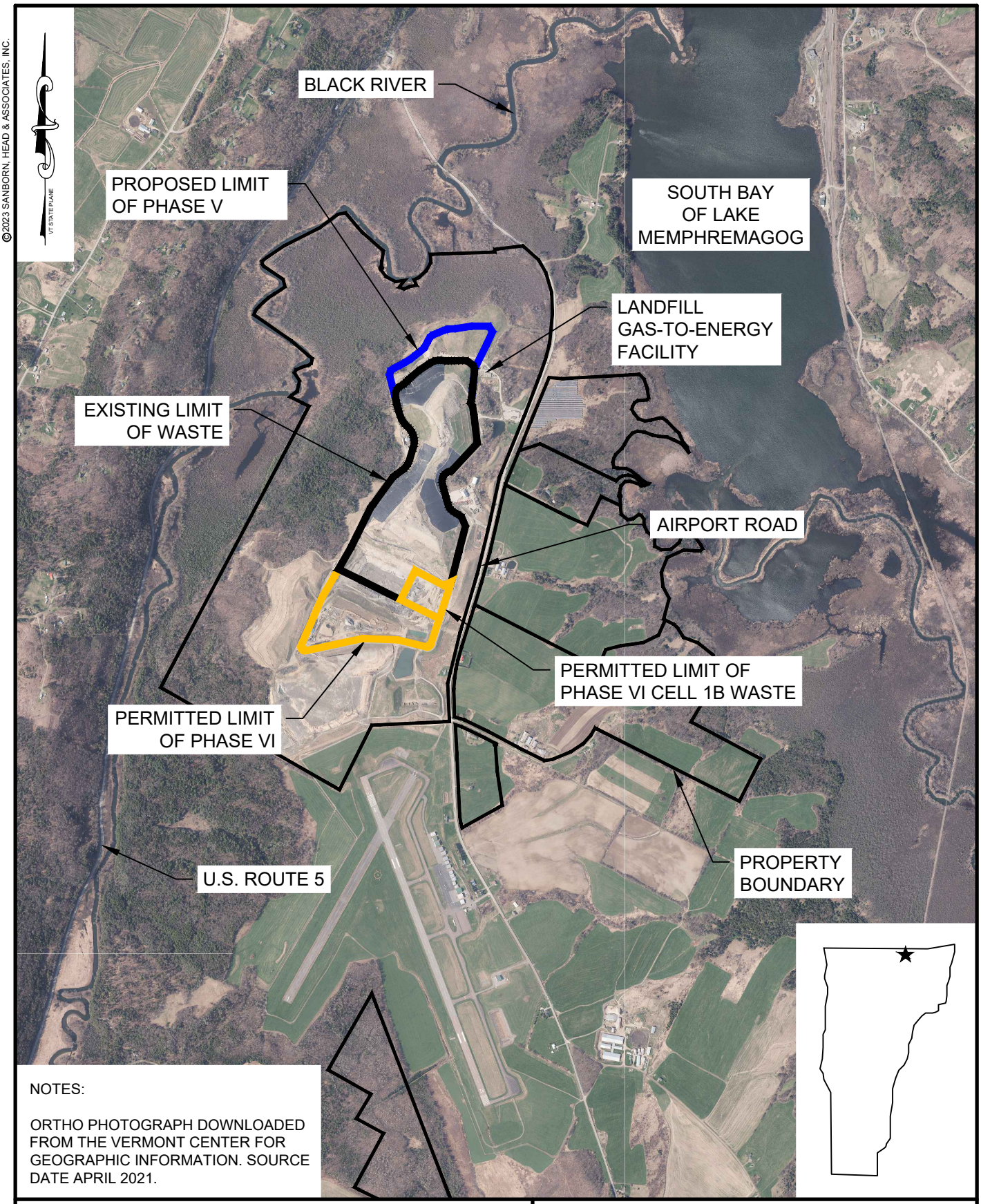
Figures



NOTES:

ORTHO PHOTOGRAPH DOWNLOADED FROM THE VERMONT CENTER FOR GEOGRAPHIC INFORMATION. SOURCE DATE APRIL 2021.

NEW ENGLAND WASTE SERVICES OF VERMONT, INC.
COVENTRY, VERMONT

AIR PERMITTING
LOCUS PLAN

SANBORN HEAD

SCALE: 1" = 2000'	DRAWN BY: JCS	FILE NO. 3829.06
DATE: JAN. 2023	CHECKED BY: JJD	FIGURE NO. 1

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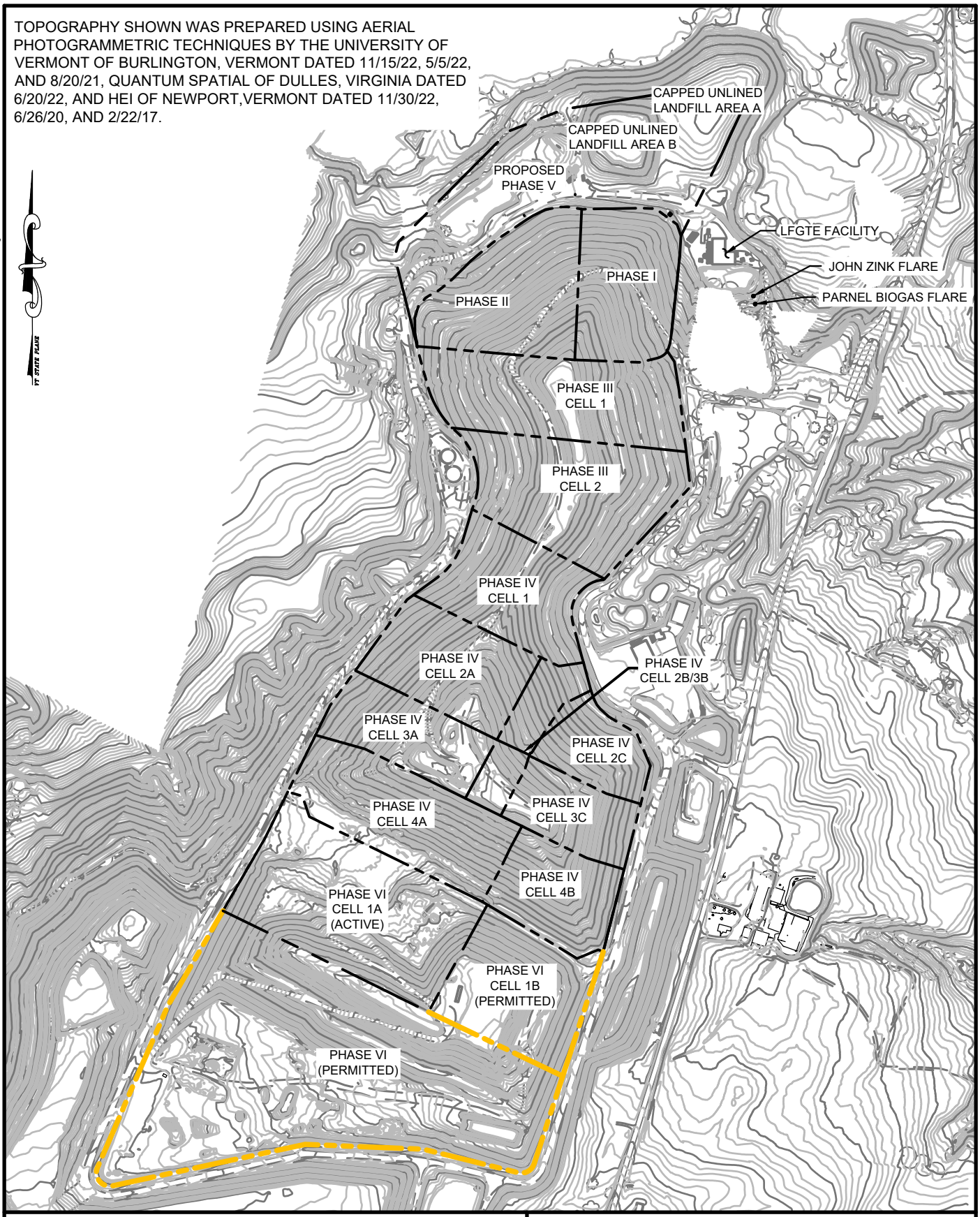
CTB FILE: SHA Standard.ctb
PLOT DATE: 1-10-23

TOPOGRAPHY SHOWN WAS PREPARED USING AERIAL PHOTOGRAMMETRIC TECHNIQUES BY THE UNIVERSITY OF VERMONT OF BURLINGTON, VERMONT DATED 11/15/22, 5/5/22, AND 8/20/21, QUANTUM SPATIAL OF DULLES, VIRGINIA DATED 6/20/22, AND HEI OF NEWPORT,VERMONT DATED 11/30/22, 6/26/20, AND 2/22/17.



NEW ENGLAND WASTE SERVICES OF VERMONT, INC.
COVENTRY, VERMONT

AIR PERMITTING
SITE PLAN

SANBORN HEAD

SCALE: 1"=600'	DRAWN BY: JCS	FILE NO. 3829.06
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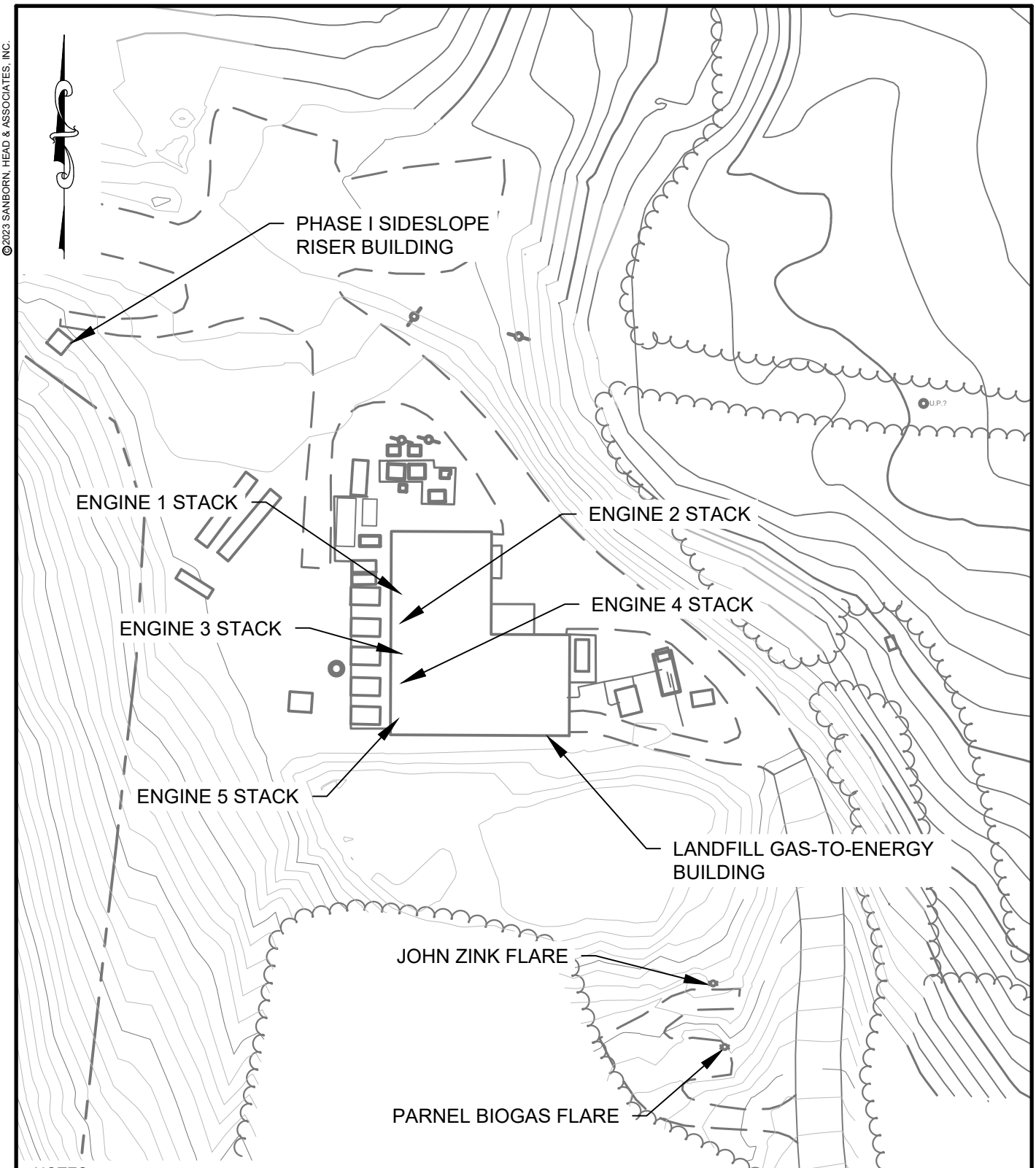
FILE: P:\2000s\2061.22\Graphics Files\CAD\Air Permitting\Figure 2 - Site Plan.dwg
LAYOUT: FIG 1 (NEWSVT)
CTB FILE: SHA Standard.ctb
PLOT DATE: 1-10-23



NOTES:

1. TOPOGRAPHY SHOWN WAS PREPARED USING AERIAL PHOTOGRAMMETRIC TECHNIQUES FOR NEW ENGLAND WASTE SERVICES OF VERMONT, INC. BY QUANTUM SPATIAL OF DULLES, VIRGINIA DATED 6/20/2022.

NEW ENGLAND WASTE SERVICES OF VERMONT, INC. COVENTRY, VERMONT	AIR PERMITTING LANDFILL GAS CONTROL SYSTEM PLAN		
SANBORN HEAD	SCALE: 1" = 80'	DRAWN BY: LET	FILE NO. 3829.06
	DATE: JAN. 2023	CHECKED BY: JJD	FIGURE NO. 3

IMAGES:

FILE: P:\2000s\2061.22\Graphics Files\CAD\Air Permitting\FIGURE 3 - LFGTE Control.dwg
LAYOUT: CONTROL
CTB FILE: SHA Standard.ctb
PLOT DATE: 1-10-23

Appendix A

Landfill Gas Generation Modeling

Appendix A
Landfill Gas Collection Rate Projections

Sanborn Head estimated the potential maximum landfill gas (LFG) generation rate for the NEWSVT landfill (Phases I through VI) using a model developed by the United States Environmental Protection Agency (USEPA) entitled Landfill Gas Emissions Model, Version 3.03 (LandGEM). LandGEM uses a first order decay equation identified in 40 Code of Federal Regulations (CFR) Part 60.754. Either default or user-defined LFG concentrations (i.e., percent methane [CH4], etc.) are input to the model which, when combined with site-specific waste acceptance rates or in-place waste mass, are used to estimate uncontrolled emissions from a landfill.

LandGEM allows the user to select default parameters published in the New Source Performance Standards (NSPS) for MSW landfills (Title 40 of the Code of Federal Regulations [CFR] Part 60, Subpart XXX) or in the USEPA's Compilation of Air Pollutant Factors, AP-42, or to enter user-specified values. Based on our experience, NSPS default values typically overestimate LFG generation and AP-42 default values generally match LFG generation more closely. Sanborn Head developed site-specific modeling parameters for methane generation potential of the waste (L_0) and methane generation rate constant (k) to represent LFG generation at the NEWSVT landfill for the years prior to the full implementation of Vermont's Universal Recycling Law (Act no. 148), 2020 and prior:

- L_0 = 120 cubic meters per megagram (m^3/Mg); and
- k = 0.06 $year^{-1}$ (yr^{-1}).

These site-specific modeling parameters are based on historical waste acceptance and gas collection rate data. When combined with the site's estimated current gas collection efficiency of 85 percent, these LandGEM modeling parameters produce a "best-fit" curve for the site's observed gas collection rates. The curve is provided as Figure A-1.

For the years 2021 and beyond, after full implementation of Act no. 148, Sanborn Head used the following site-specific modeling parameters:

- L_0 = 100 m^3/Mg; and
- k = 0.05 yr^{-1}.

Waste acceptance records for the site through 2021, presented in Table A-1, were provided by NEWSVT. The waste projections used for 2022 and beyond are based on the site's maximum permitted waste acceptance rate of 600,000 tons per year.

To account for Vermont's Universal Recycling Law (Act 148) that went into effect on July 1, 2020, we will assume the law is approximately 50 percent effective at reducing organics such as food waste in the landfill, and that the resulting mix of MSW will have a lower methane generation capacity, L_0 and a lower k-value related to the rate of degradation. A report from 2018 for the State of Vermont Department of Environmental Conservation prepared by DSM

Environmental Services, Inc. estimated that 29.2 percent of the MSW accepted at NEWSVT is organic waste. The percentage of waste accepted at NEWSVT that is MSW, based on waste acceptance records from 2010 to 2021, is 84 percent.

By removing approximately half of the organics content from the projected waste acceptance, we assumed the MSW accepted at the site will have reduced values for L_0 and k. Based on discussions with NEWSVT representatives, we understand that the diverted organics will be replaced in the waste stream by inert waste types.

To account for the proposed Phase V waste relocation project, we modeled the waste from the unlined landfill as if it had been received in the lined landfill during the same years it was actually received in the unlined landfill (i.e., 1970 through 1992).

Based on the historical and projected waste acceptance rates and the site specific estimates for L_0 and k, the LandGEM estimate for maximum LFG generation rate is 5,411 standard cubic feet per minute (scfm) occurring in 2038, the year the landfill is projected to be filled to permitted capacity. LandGEM model results are included in this appendix.

Based on the maximum modeled LFG generation rate of 5,411 scfm and an assumed collection efficiency of 85 percent over the life of the landfill, the maximum LFG collection rate is estimated to be approximately 4,599 scfm. Therefore, the air emissions estimates previously provided in the September 2014 Title V Air Pollution Control Permit Application and the related air dispersion modeling which were based on a total LFG collection rate of 5,000 scfm remain a conservative (high) estimate of the impacts to ambient air. Estimated annual LFG collection rates are provided in Table A-2.

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Table A-1
Waste Acceptance Rates (Pre & Post Organics Ban): 600,000 TPY Projection (As Permitted)
Phases I through VI

New England Waste Services of Vermont, Inc. Landfill
Coventry, Vermont

	Pre-Organics Ban		Post-Organics Ban			
	k=0.06, Lo=120		k=0.05, Lo=100		Inert, No LFG Generation	
	Waste Acceptance Rate (Mg/yr)	Waste Acceptance Rate (Ton/yr)	Degradable Waste Acceptance Rate (Mg/yr)	Degradable Waste Acceptance Rate (Ton/yr)	Inert Waste Acceptance Rate (Mg/yr)	Inert Waste Acceptance Rate (Ton/yr)
1970	6,350	7,001	0	0	0	0
1971	6,350	7,001	0	0	0	0
1972	6,350	7,001	0	0	0	0
1973	6,350	7,001	0	0	0	0
1974	6,350	7,001	0	0	0	0
1975	6,350	7,001	0	0	0	0
1976	6,350	7,001	0	0	0	0
1977	6,350	7,001	0	0	0	0
1978	6,350	7,001	0	0	0	0
1979	6,350	7,001	0	0	0	0
1980	6,350	7,001	0	0	0	0
1981	6,350	7,001	0	0	0	0
1982	6,350	7,001	0	0	0	0
1983	6,350	7,001	0	0	0	0
1984	6,350	7,001	0	0	0	0
1985	6,350	7,001	0	0	0	0
1986	6,350	7,001	0	0	0	0
1987	6,350	7,001	0	0	0	0
1988	6,350	7,001	0	0	0	0
1989	6,350	7,001	0	0	0	0
1990	6,350	7,001	0	0	0	0
1991	6,350	7,001	0	0	0	0
1992	6,350	7,001	0	0	0	0
1993	90,700	100,000	0	0	0	0
1994	75,923	83,708	0	0	0	0
1995	79,190	87,310	0	0	0	0
1996	123,648	136,326	0	0	0	0
1997	119,686	131,958	0	0	0	0
1998	178,448	196,745	0	0	0	0
1999	189,231	208,634	0	0	0	0
2000	232,404	256,234	0	0	0	0
2001	236,546	260,800	0	0	0	0
2002	217,680	240,000	0	0	0	0
2003	217,680	240,000	0	0	0	0
2004	217,680	240,000	0	0	0	0
2005	307,075	338,561	0	0	0	0
2006	326,749	360,252	0	0	0	0
2007	320,732	353,619	0	0	0	0
2008	304,680	335,921	0	0	0	0
2009	307,678	339,226	0	0	0	0
2010	352,082	388,183	0	0	0	0
2011	363,537	400,813	0	0	0	0
2012	341,675	376,709	0	0	0	0
2013	412,162	454,423	0	0	0	0
2014	403,392	444,755	0	0	0	0
2015	410,227	452,290	0	0	0	0
2016	391,062	431,160	0	0	0	0
2017	494,882	545,625	0	0	0	0
2018	495,172	545,945	0	0	0	0
2019	520,989	574,409	0	0	0	0
2020	462,975	510,447	0	0	0	0
2021	0	0	415,413	458,007	58,068	64,022
2022	0	0	486,132	535,978	58,068	64,022
2023	0	0	486,132	535,978	58,068	64,022
2024	0	0	486,132	535,978	58,068	64,022
2025	0	0	486,132	535,978	58,068	64,022
2026	0	0	486,132	535,978	58,068	64,022
2027	0	0	486,132	535,978	58,068	64,022
2028	0	0	486,132	535,978	58,068	64,022
2029	0	0	486,132	535,978	58,068	64,022
2030	0	0	486,132	535,978	58,068	64,022
2031	0	0	486,132	535,978	58,068	64,022
2032	0	0	486,132	535,978	58,068	64,022
2033	0	0	486,132	535,978	58,068	64,022
2034	0	0	486,132	535,978	58,068	64,022
2035	0	0	486,132	535,978	58,068	64,022
2036	0	0	486,132	535,978	58,068	64,022
2037	0	0	486,132	535,978	58,068	64,022
2038	0	0	381,515	420,634	58,068	64,022
Total Phases I through VI	**8,339,935**	**9,195,078**	**8,575,046**	**9,454,295**	**1,045,217**	**1,152,389**
Total Phases I through VI	**19,801,762 tons**					

Notes:

1. Megagrams = 0.907 x Tons.
2. The 1970 through 2021 waste acceptance rates were provided by NEWSVT. The projected waste acceptance rate for 2022 and beyond (600,000 tpy) is based on the permitted maximum waste acceptance rate at the NEWSVT Landfill.
3. Vermont's Universal Recycling Law (Act 148) went into full effect on July 1, 2020. Therefore, starting in the year 2021, we conservatively assumed that the Law is 50% effective, thereby reducing the estimated 29.2% of organics in MSW (based on DSM Environmental Services, Inc.'s 2018 Report for the State of Vermont, DEC) by 50%. Based on waste records from 2010 through 2021, approximately 84% of the waste accepted at NEWSVT is MSW.
4. The total waste capacity of 19,801,762 tons was estimated based on the following:
   - The estimated waste placed in the unlined landfill from 1970 through 1992 is 161,025 tons. This waste will be relocated to the lined landfill as part of the Phase V landfill expansion. The waste was entered into LandGEM for the year it was placed in the unlined landfill.
   - From 1993 through 2021, Phases I through IV of the landfill were filled to capacity with approximately 9,427,592 tons of waste.
   - The capacity of Phase VI is approximately 13,694,000 cubic yards. It is estimated that cover will consume approximately 20 percent of Phase VI capacity. Therefore, the volume of waste to be accepted in the Phase VI expansion is estimated to be 10,955,200 cubic yards or 8,490,280 tons based on an assumed compaction density of 1,550 lb/cubic yard.
   - The Phase V expansion volume is estimated to be 3,340,000 cubic yards based on the FAS 143/FY17 Final Grading plan (September 2016). It is estimated that cover will consume approximately 21 percent (provided by NEWSVT) of the total Phase V expansion volume. Therefore, the volume of waste to be accepted in the Phase V expansion is estimated to be approximately 2,638,600 cubic yards. The compaction density of waste to be placed in the Phase V expansion is estimated to be approximately 1,550 lb/cubic yard (provided by NEWSVT). Therefore, the mass of waste to be accepted in the Phase V expansion is estimated to be 2,044,915 tons. After relocation of the 161,025 tons of waste from the unlined landfill, the net additional waste capacity provided by Phase V is 1,883,890 tons.

Table A-2
Phases I through VI
Landfill Gas Collection Rate Estimates (at 50% Methane)

New England Waste Services of Vermont, Inc. Landfill
Coventry, Vermont

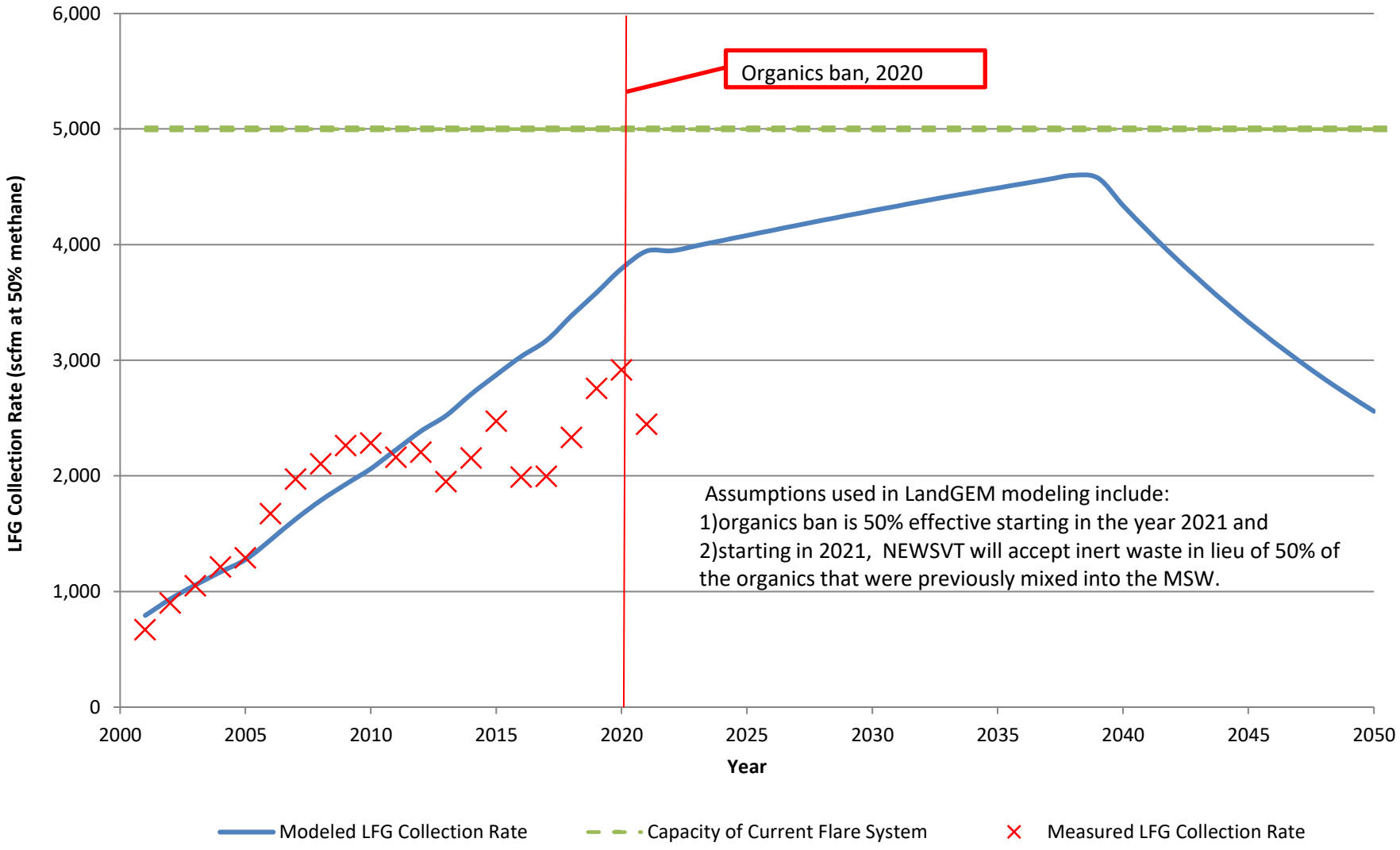
Year	Pre-Organics Ban: LFG Generation Rate Estimates from Modeling with L_o=120 m^3/Mg, k=0.06/yr (scfm at 50% CH4)	Post-Organics Ban: LFG Generation Rate Estimates from Modeling with L_o=100 m^3/Mg, k=0.05/yr (scfm at 50% CH4)	Total LFG Generation (scfm at 50% CH4)	Assumed LFG Collection Efficiency (LFG Collected/ LFG Generated)	LFG Collection Rate Estimates (scfm at 50% CH4)	Measured LFG Collection Rate (scfm at 50% CH4)
2001	933	0	933	0.85	793	670
2002	1,102	0	1,102	0.85	936	900
2003	1,243	0	1,243	0.85	1,057	1,050
2004	1,376	0	1,376	0.85	1,170	1,211
2005	1,501	0	1,501	0.85	1,276	1,291
2006	1,704	0	1,704	0.85	1,448	1,673
2007	1,913	0	1,913	0.85	1,626	1,972
2008	2,105	0	2,105	0.85	1,789	2,103
2009	2,270	0	2,270	0.85	1,929	2,263
2010	2,428	0	2,428	0.85	2,064	2,283
2011	2,619	0	2,619	0.85	2,226	2,160
2012	2,810	0	2,810	0.85	2,388	2,206
2013	2,969	0	2,969	0.85	2,523	1,951
2014	3,185	0	3,185	0.85	2,707	2,154
2015	3,380	0	3,380	0.85	2,873	2,472
2016	3,571	0	3,571	0.85	3,035	1,990
2017	3,732	0	3,732	0.85	3,172	1,996
2018	3,982	0	3,982	0.85	3,384	2,333
2019	4,217	0	4,217	0.85	3,585	2,756
2020	4,464	0	4,464	0.85	3,794	2,917
2021	4,641	0	4,641	0.85	3,945	2,447
2022	4,370	274	4,644	0.85	3,947	
2023	4,116	580	4,696	0.85	3,992	
2024	3,876	872	4,748	0.85	4,036	
2025	3,651	1,150	4,800	0.85	4,080	
2026	3,438	1,414	4,852	0.85	4,124	
2027	3,238	1,665	4,903	0.85	4,167	
2028	3,049	1,904	4,953	0.85	4,210	
2029	2,872	2,131	5,003	0.85	4,252	
2030	2,704	2,347	5,052	0.85	4,294	
2031	2,547	2,553	5,100	0.85	4,335	
2032	2,399	2,749	5,147	0.85	4,375	
2033	2,259	2,935	5,194	0.85	4,415	
2034	2,127	3,112	5,239	0.85	4,453	
2035	2,003	3,280	5,284	0.85	4,491	
2036	1,887	3,440	5,327	0.85	4,528	
2037	1,777	3,593	5,370	0.85	4,564	
2038	1,673	3,738	**5,411**	0.85	**4,599**	
2039	1,576	3,807	5,382	0.85	4,575	
2040	1,484	3,621	5,105	0.85	4,339	
2041	1,398	3,444	4,842	0.85	4,116	
2042	1,316	3,276	4,593	0.85	3,904	
2043	1,240	3,117	4,356	0.85	3,703	
2044	1,168	2,965	4,132	0.85	3,512	
2045	1,100	2,820	3,919	0.85	3,332	
2046	1,035	2,682	3,718	0.85	3,160	
2047	975	2,552	3,527	0.85	2,998	
2048	918	2,427	3,346	0.85	2,844	
2049	865	2,309	3,174	0.85	2,698	
2050	815	2,196	3,011	0.85	2,559	

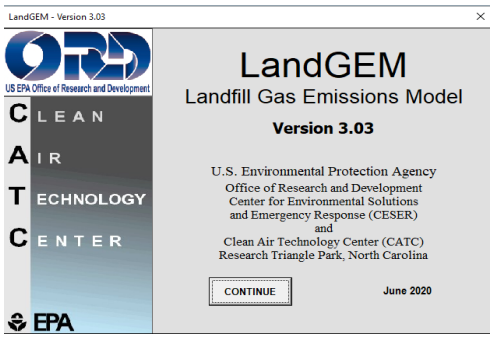
Notes:

1. Vermont's Universal Recycling Law (Act 148) went into full effect on July 1, 2020. Therefore, starting in the year 2021, we conservatively assumed that the Law is 50% effective, thereby reducing the estimated 29.2% of organics in MSW (based on DSM Environmental Services, Inc.'s 2018 Report for the State of Vermont, DEC) by 50%. Based on waste records from 2010 through 2021, approximately 84% of the waste accepted at NEWSVT is MSW.
2. Prior to the full effect of the Universal Waste Recycling Law (pre-2021), landfill gas (LFG) generation rates were estimated with the USEPA's "Landfill Gas Emissions Model (LandGEM), Version 3.03," using historical and projected waste acceptance, the site-specific methane generation potential of the waste estimated by Sanborn Head: L_o=120 m^3/Mg, and the site-specific value for the methane generation rate constant estimated by Sanborn Head: k=0.06 yr^{-1}.
3. After the Universal Waste Recycling Law is implemented in 2020 (for waste accepted in 2021 and onward), LFG generation rates were estimated with LandGEM using projected waste acceptance, an estimate of the site-specific methane generation potential of the waste: Lo=100 m^3/Mg, and an estimated site-specific value for the methane generation rate constant: k=0.05 yr^{-1}.
4. We assumed that with a properly designed and operated LFG extraction system and adequate intermediate and/or final cover, 85 percent of the LFG generated at the NEWSVT Landfill is collected.

Figure A-1. Phases I through VI: Landfill Gas Collection Rate Modeling (at 50% Methane)
Assumed Collection Efficiency of 85%

New England Waste Services of Vermont, Inc. Landfill





Summary Report

Landfill Name or Identifier: NEWSVT: Pre-Organics Ban

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH4} = annual methane generation in the year of the calculation *(m^3/year)*

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate *($year^{-1}$)*

L_o = potential methane generation capacity *(m^3/Mg)*

M_i = mass of waste accepted in the i^{th} year *(Mg)*

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year *(decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

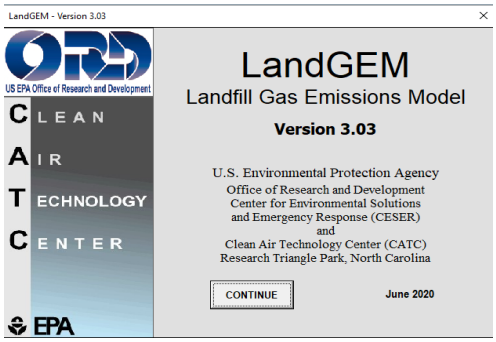
LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS		
Landfill Open Year	**1970**	
Landfill Closure Year (with 80-year limit)	**2020**	
Actual Closure Year (without limit)	***2020***	
Have Model Calculate Closure Year?	**Yes**	
Waste Design Capacity	**9,195,078**	*short tons*
MODEL PARAMETERS		
Methane Generation Rate, k	**0.060**	*$year^{-1}$*
Potential Methane Generation Capacity, L_o	**120**	*m^3/Mg*
Methane Content	**50**	*% by volume*

Results

Year	Total landfill gas			Year	Total landfill gas		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*		*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
1970	0	0	0	2020	82,962	66,432,303	4,464
1971	111	89,223	6	2021	86,255	69,068,756	4,641
1972	216	173,249	12	2022	81,232	65,046,505	4,370
1973	315	252,383	17	2023	76,501	61,258,491	4,116
1974	408	326,908	22	2024	72,046	57,691,074	3,876
1975	496	397,093	27	2025	67,850	54,331,408	3,651
1976	578	463,190	31	2026	63,899	51,167,393	3,438
1977	656	525,439	35	2027	60,178	48,187,636	3,238
1978	729	584,062	39	2028	56,673	45,381,406	3,049
1979	798	639,272	43	2029	53,373	42,738,599	2,872
1980	863	691,266	46	2030	50,265	40,249,697	2,704
1981	924	740,232	50	2031	47,338	37,905,737	2,547
1982	982	786,347	53	2032	44,581	35,698,279	2,399
1983	1,036	829,776	56	2033	41,985	33,619,373	2,259
1984	1,087	870,677	59	2034	39,540	31,661,533	2,127
1985	1,135	909,195	61	2035	37,237	29,817,709	2,003
1986	1,181	945,470	64	2036	35,069	28,081,261	1,887
1987	1,223	979,633	66	2037	33,026	26,445,935	1,777
1988	1,264	1,011,806	68	2038	31,103	24,905,844	1,673
1989	1,301	1,042,106	70	2039	29,292	23,455,440	1,576
1990	1,337	1,070,641	72	2040	27,586	22,089,502	1,484
1991	1,371	1,097,514	74	2041	25,979	20,803,109	1,398
1992	1,402	1,122,822	75	2042	24,466	19,591,631	1,316
1993	1,432	1,146,657	77	2043	23,042	18,450,703	1,240
1994	2,940	2,354,288	158	2044	21,700	17,376,218	1,168
1995	4,101	3,283,964	221	2045	20,436	16,364,305	1,100
1996	5,252	4,205,404	283	2046	19,246	15,411,323	1,035
1997	7,116	5,697,854	383	2047	18,125	14,513,837	975
1998	8,801	7,047,720	474	2048	17,070	13,668,617	918
1999	11,420	9,144,630	614	2049	16,076	12,872,619	865
2000	14,075	11,270,936	757	2050	15,139	12,122,976	815
2001	17,334	13,880,030	933	2051	14,258	11,416,989	767
2002	20,475	16,395,380	1,102	2052	13,427	10,752,115	722
2003	23,102	18,499,166	1,243	2053	12,646	10,125,960	680
2004	25,576	20,480,436	1,376	2054	11,909	9,536,270	641
2005	27,907	22,346,327	1,501	2055	11,216	8,980,921	603
2006	31,670	25,359,628	1,704	2056	10,562	8,457,913	568
2007	35,559	28,473,883	1,913	2057	9,947	7,965,363	535
2008	39,116	31,322,234	2,105	2058	9,368	7,501,496	504
2009	42,184	33,779,167	2,270	2059	8,822	7,064,643	475
2010	45,126	36,135,144	2,428	2060	8,309	6,653,230	447
2011	48,676	38,977,831	2,619	2061	7,825	6,265,776	421
2012	52,221	41,815,924	2,810	2062	7,369	5,900,886	396
2013	55,175	44,181,561	2,969	2063	6,940	5,557,245	373
2014	59,194	47,399,834	3,185	2064	6,536	5,233,616	352
2015	62,825	50,307,468	3,380	2065	6,155	4,928,834	331
2016	66,365	53,141,807	3,571	2066	5,797	4,641,801	312
2017	69,362	55,541,803	3,732	2067	5,459	4,371,484	294
2018	74,006	59,260,788	3,982	2068	5,141	4,116,908	277
2019	78,385	62,767,272	4,217	2069	4,842	3,877,158	261



Summary Report

Landfill Name or Identifier: NEWSVT: Post-Organics Ban

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} kL_o \left(\frac{M_i}{10}\right) e^{-kt_{ij}}$$

Where,

Q_{CH4} = annual methane generation in the year of the calculation ($m^3/year$)

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate ($year^{-1}$)

L_o = potential methane generation capacity (m^3/Mg)

M_i = mass of waste accepted in the i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS		
Landfill Open Year	**1970**	
Landfill Closure Year (with 80-year limit)	**2039**	
Actual Closure Year (without limit)	***2039***	
Have Model Calculate Closure Year?	**Yes**	
Waste Design Capacity	**9,454,295**	*short tons*
MODEL PARAMETERS		
Methane Generation Rate, k	**0.050**	$year^{-1}$
Potential Methane Generation Capacity, L_o	**100**	m^3/Mg
Methane Content	**50**	*% by volume*

Results

Year	Total landfill gas			Year	Total landfill gas		
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*		*(Mg/year)*	*(m^3/year)*	*(av ft^3/min)*
1970	0	0	0	2020	0	0	0
1971	0	0	0	2021	0	0	0
1972	0	0	0	2022	5,085	4,071,486	274
1973	0	0	0	2023	10,787	8,637,531	580
1974	0	0	0	2024	16,211	12,980,888	872
1975	0	0	0	2025	21,370	17,112,417	1,150
1976	0	0	0	2026	26,278	21,042,448	1,414
1977	0	0	0	2027	30,947	24,780,810	1,665
1978	0	0	0	2028	35,388	28,336,850	1,904
1979	0	0	0	2029	39,612	31,719,460	2,131
1980	0	0	0	2030	43,630	34,937,097	2,347
1981	0	0	0	2031	47,453	37,997,809	2,553
1982	0	0	0	2032	51,088	40,909,248	2,749
1983	0	0	0	2033	54,547	43,678,695	2,935
1984	0	0	0	2034	57,837	46,313,074	3,112
1985	0	0	0	2035	60,966	48,818,973	3,280
1986	0	0	0	2036	63,943	51,202,657	3,440
1987	0	0	0	2037	66,775	53,470,088	3,593
1988	0	0	0	2038	69,468	55,626,936	3,738
1989	0	0	0	2039	70,750	56,653,230	3,807
1990	0	0	0	2040	67,299	53,890,219	3,621
1991	0	0	0	2041	64,017	51,261,962	3,444
1992	0	0	0	2042	60,895	48,761,887	3,276
1993	0	0	0	2043	57,925	46,383,741	3,117
1994	0	0	0	2044	55,100	44,121,580	2,965
1995	0	0	0	2045	52,413	41,969,745	2,820
1996	0	0	0	2046	49,857	39,922,856	2,682
1997	0	0	0	2047	47,425	37,975,795	2,552
1998	0	0	0	2048	45,112	36,123,694	2,427
1999	0	0	0	2049	42,912	34,361,921	2,309
2000	0	0	0	2050	40,819	32,686,070	2,196
2001	0	0	0	2051	38,828	31,091,952	2,089
2002	0	0	0	2052	36,935	29,575,579	1,987
2003	0	0	0	2053	35,133	28,133,161	1,890
2004	0	0	0	2054	33,420	26,761,091	1,798
2005	0	0	0	2055	31,790	25,455,937	1,710
2006	0	0	0	2056	30,240	24,214,436	1,627
2007	0	0	0	2057	28,765	23,033,484	1,548
2008	0	0	0	2058	27,362	21,910,128	1,472
2009	0	0	0	2059	26,027	20,841,558	1,400
2010	0	0	0	2060	24,758	19,825,104	1,332
2011	0	0	0	2061	23,551	18,858,222	1,267
2012	0	0	0	2062	22,402	17,938,496	1,205
2013	0	0	0	2063	21,309	17,063,625	1,147
2014	0	0	0	2064	20,270	16,231,422	1,091
2015	0	0	0	2065	19,282	15,439,806	1,037
2016	0	0	0	2066	18,341	14,686,798	987
2017	0	0	0	2067	17,447	13,970,514	939
2018	0	0	0	2068	16,596	13,289,164	893
2019	0	0	0	2069	15,786	12,641,044	849

Appendix B

Requirements Identification and Compliance Certification

COVENTRY CLEAN ENERGY CORPORATION (CCEC) LANDFILL GAS-TO-ENERGY OPERATION
IDENTIFICATION OF APPLICABLE REQUIREMENTS AND CERTIFICATION OF COMPLIANCE

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
§5-201:	Prohibition Open Burning	In compliance.	CCEC will continue to comply with this requirement.	Facility policy prohibits open burning on-Site.	Facility policy prohibits open burning on site.
§5-211(2): Prohibition of Visible Air Contaminants	For installations constructed subsequent to April 30, 1970, the opacity of visible air contaminant emissions may not exceed 20 percent opacity for a period or periods aggregating to 6 minutes or more in any hour.	In compliance.	CCEC will continue to comply with this requirement.	Compliance with opacity limitation subject to periodic observations as recorded by a certified visible emissions observer when the equipment is operational.	Annual submission with registration.
§5-221(1): Prohibition of Potentially Polluting Materials in Fuel, Sulfur Limitations in Fuel	The sulfur content of fuels used in stationary combustion installations for heat or power generation may not exceed 2 percent by weight (%), except No. 2 and lighter distillate oils and animal and vegetable oil fuel oils may not exceed a sulfur content of 0.0015%; No. 4 residual oil may not exceed a sulfur content of	In compliance.	CCEC will continue to comply with this requirement.	Emergency Generator-Fuel will be purchased from vendors complying with the applicable requirements (e.g., sulfur limitation).	Annual submission with registration.

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
	0.25%; and No. 5 and No. 6 residual oils and heavier residual oils and used oils may not exceed a sulfur content of 0.5%.				
§5-221(2): Prohibition of Potentially Polluting Materials in Fuel, Used Oil	Waste oil burners may only be operated if max. heat input ≤500,000 Btu/hr; waste oil meets §5-221(2), Table A specifications; and user complies with Subchapter 8 of VHWMR.	In compliance.	CCEC will continue to comply with this requirement.	CCEC does not use waste oil or used oil.	Annual submission with registration.
§5-231 (1): Prohibition of Particulate Matter Industrial Process Emissions	Particulate emissions from any stack may not exceed 0.14 grams per cubic meter of undiluted exhaust gas at standard conditions on a dry basis in any one hour period.	Not applicable. CCEC is currently shielded from this requirement. The Agency has determined that the combustion of LFG is not considered an industrial process since gaseous fuels are not considered part of the process weight input into a process.			

COVENTRY CLEAN ENERGY CORPORATION (CCEC) LANDFILL GAS-TO-ENERGY OPERATION
IDENTIFICATION OF APPLICABLE REQUIREMENTS AND CERTIFICATION OF COMPLIANCE

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
§5-231 (3)(a)(i): Prohibition of Particulate Matter, Combustion Contaminants	Prohibition of Particulate Matter resulting from combustion of fossil fuel in fuel burning equipment: limited to 0.5 lbs/hr/MMBtu heat input for installations less than 10 MMBtu/hr heat input. Compliance based on EPA Method 5 (40 CFR Part 60, Appendix A).	Not applicable. CCEC is currently shielded from requirement for the combustion of landfill gas. Engineering calculations based on AP-42 emission factors for residential furnaces: 0.4 lb/1000 gal (AP-42, Section 1.3, Table 1.3-1). Assume fuel oil heat content of 130,000 Btu/gal. Therefore, emission factor equates to 0.003 lb/MMBtu.			
§5-231 (3)(a)(ii): Prohibition of Particulate Matter, Combustion Contaminants	Prohibition of Particulate Matter resulting from combustion of fossil fuel in fuel burning equipment for installations greater than 10 MMBtu/hr heat input.	Not applicable. CCEC is currently shielded from requirement for the combustion of landfill gas.			
§5-231 (4): Prohibition of Particulate Matter, Fugitive Particulate Matter	Prohibition of particulate matter from fugitive sources including roads is prohibited without taking reasonable precautions to prevent particulate matter from becoming airborne.	In compliance.	This requirement is satisfied by NEWSVT.	NEWSVT uses water trucks to disperse water as a means to minimize particulate matter emissions.	Annual submission with registration.

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
§5-241 (1) and (2): Prohibition of Nuisance and Odor	Prohibits discharge of noxious or detrimental emissions and objectionable odors.	In compliance.	CCEC will continue to comply with this requirement.	Facility policy.	Annual submission with registration.
§5-241 (3): Prohibition of Nuisance and Odor	Control Odors from Industrial Processes	Not applicable. CCEC is currently shielded from requirement for the combustion of landfill gas. The Agency does not classify the landfills as industrial processes.			
§5-251 (1): Control of Nitrogen Oxide Emissions	Fuel-specific allowable NOx emissions for fuel burning equipment with a heat input capacity of 250 MMBtu/hr or more.	Not applicable. Fuel burning equipment at CCEC will operate at less than the heat input threshold defined in this section.			
§5-252: Control of Sulfur dioxide emissions	No person shall discharge emissions of sulfur dioxide from any fuel burning equipment with a heat input capacity of 250 MMBtu/hr or more in excess of 0.8 lbs/MMBtu when derived from liquid fossil fuel and 1.2 lbs/MMBtu when derived from solid fossil fuel.	Not applicable. All fuel burning equipment employed at CCEC will operate at less than the heat input threshold defined in this section.			

COVENTRY CLEAN ENERGY CORPORATION (CCEC) LANDFILL GAS-TO-ENERGY OPERATION
IDENTIFICATION OF APPLICABLE REQUIREMENTS AND CERTIFICATION OF COMPLIANCE

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
§5-253.20: Other Sources that Emit VOCs	A source is subject to this subsection if it has operations or processes not otherwise regulated under Section 5-253, that, as a group, have allowable emissions of 50 tons or more of VOCs per calendar year since January 1, 1990.	Not applicable. The engines at CCEC's LFGTE Operation which are the primary source of VOC emissions (formaldehyde) are fuel combustion sources; therefore, in accordance with §5-253.20(a)(3) this section does not apply.			
§5-261: Control of HAC's	For each hazardous air contaminant emitted by a source in excess of its action level, the source shall apply control technologies to achieve HMSER.	In compliance.	CCEC will continue to comply with this requirement.	CCEC operates the LFGTE facility and engine control devices to meet VAQCD HMSER requirements in accordance with AOP No. 18-019.	Annual Submission with registration.
§5-271: Control of Air Contaminants from Stationary Reciprocating Internal Combustion Engines	Performance standards for stationary reciprocating internal combustion engines that combust fossil fuels	Not applicable. CCEC is currently shielded from requirement for the combustion of landfill gas. Landfill gas is not a fossil fuel under the definition in the *Regulations.*			

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
§5-402: Written Reports when Requested	Requires a written report summarizing the information relevant to the air pollution potential of the source from the person operating, or responsible for, any proposed or existing air contaminant source, or indirect source, if requested.	In compliance.	CCEC will continue to comply with this requirement.	Submit reports as required.	Upon request
§5-403: Circumvention	No person shall build/erect/install/use any machine/equipment/other contrivance that conceals an emission that would otherwise be a violation.	In compliance.	CCEC will continue to comply with this requirement.	Accurate monitoring and reporting of estimated emissions	Routine monitoring and reporting
§5-404: Methods for Sampling and Testing of Sources	Requires the owner or operator to conduct test to determine the quantity of particulate and or gaseous matter being emitted, which tests shall include stack tests if circumstances so demand.	In compliance.	CCEC will continue to comply with this requirement.	Conduct stack testing and supply data in accordance to the method approved by Air Pollution Control Officer and EPA.	Upon request

COVENTRY CLEAN ENERGY CORPORATION (CCEC) LANDFILL GAS-TO-ENERGY OPERATION
IDENTIFICATION OF APPLICABLE REQUIREMENTS AND CERTIFICATION OF COMPLIANCE

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
§5-405: Required Air Monitoring	Install, use, and maintain such monitoring equipment and records and make such periodic emissions reports as prescribed by Air Pollution Control Officer.	In compliance.	CCEC will continue to comply with this requirement.	Install, use and maintain such monitoring equipment and records, establish and maintain such records, and make such periodic emission reports in accordance to the method approved by Air Pollution Control Officer and EPA, as prescribed.	Upon request
§5-502: Major Stationary Sources and Major Modifications	Most Stringent Emission Rate (MSER) determinations for engine emissions of CO and NO_x.	In compliance.	CCEC will continue to comply with this requirement.	Engine stack testing for CO and NO_x.	Annual stack testing for NSPS JJJJ engine and testing every other year for the other four engines.
Subchapter V: Review of New Air Contaminant Sources	Requires that air pollution source must notify Agency of any new construction, installation, or modification prior to the commencement of operation and receive authorization from the Secretary after review and analysis of submitted information.	In compliance.	CCEC will continue to comply with this requirement.	With this application, CCEC is notifying the Agency of its intent to renew the facility's August 2018 Title V Air Pollution Control Permit to Construction and Operate. No changes to emission limits are being proposed.	Annual submission with registration

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
Subchapter VIII: Registration of Air Contaminant Sources	Requires that the operator of any source emitting more than 5 tons of any and all air contaminants per year shall register the source with the Secretary and shall renew such registration annually. Establishes fee structure and determination of fees.	In compliance.	CCEC will continue to comply with this requirement.	Annual submission of registration information and payment of associated fees.	CCEC will continue to submit annual registration information.
Subchapter IX: Control of Ozone Depleting Chemicals	Regulates sale and repair of equipment and products containing ozone-depleting chemicals	Not applicable. Gas processing system required liquid chiller for process water, which contains HCFC-22. However, no ozone-depleting products shall be sold or offered for sale.			
Subchapter X: Air Pollution Operating Permit Requirements	Requires that the operator of any source with allowable emission in excess of 10 tpy make application to obtain Vermont air pollution operating permit and renew such application every 5 years.	In compliance.	CCEC will continue to comply with this requirement.	CCEC was issued a Title V construction and operating permit on March 6, 2016 for the LFGTE Facility, and a modified Title V Permit on August 1, 2018. With this application, CCEC is notifying the Agency of its intent to renew the facility's August 2018 Title V Permit No. 18-019.	CCEC will abide by terms and conditions specified in the operating permit and will renew application at the conclusion of the term of the applicable permit.

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
§5-1010: RACT	The owner/operator of a Subchapter X major source shall install and maintain RACT to limit discharge of contaminants as required by the operating permit.	Presently not applicable based on emission history.	CCEC will comply if Agency considers applicable.	RACT is determined by the Agency. Currently in compliance.	Annual submission with registration.
Section 111 - Clean Air Act: New Source Performance Standards (NSPSs), Subpart Kb	Performance standards for Volatile Organic Liquid storage vessels constructed or modified after 1984.	Not applicable. Leachate tanks' vapor pressures are estimated to be less than 3.5kPa, which is the applicability threshold for Subpart Kb ((40CFR60.110b(c)). Each VOL tank associated with LFGTE Operation has capacity <40m3 (approx. 10,500 gallons) which is applicability threshold for Subpart Kb (40CFR60.110b(a)).			
Section 111 - Clean Air Act: New Source Performance Standards (NSPSs), Subpart XXX	Performance standards for municipal solid waste landfills.	In compliance Design capacity of landfill >2.5 million Mg, estimated NMOC emission rate >50 Mg/yr with CAA defaults and Tier II concentration.	Design Capacity NMOC Emission Rate, and Collection and Control System Design Plan reports have been submitted by NEWSVT as required by Subpart XXX.	Report Submittals	As specified in NSPS for MSW Landfills

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Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
Section 111 - Clean Air Act: New Source Performance Standards (NSPSs), Subpart JJJJ	Performance standards for engines manufactured after July 1, 2007 that burn landfill/digester gas and are over 500 bhp. The units must comply with the following limits: NOx 3.0 g/bhphr, CO 5.0 g/bhphr, and NMOC 1.0 g/bhphr.	In compliance.	CCEC will continue to comply with this requirement.	Annual stack testing on applicable engine. Engine (serial no.) GZJ 00368 is subject to 40 CFR Part 60, Subpart JJJJ-NSPS	Annual submission of stack test results
Section 112 -Clean Air Act: National Emission Standards for Hazardous Air Pollutants (NESHAPs) Subpart M	NESHAP: Asbestos	In compliance. Applicable specifically to and only to disposal of regulated asbestos-containing material (RACM).	This requirement is satisfied by NEWSVT.	Recordkeeping and reporting.	Records available upon request
Section 112 - Clean Air Act: National Emission Standards for Hazardous Air Pollutants (NESHAPs) Subpart AAAA	NESHAP: Municipal Solid Waste Landfills	In compliance.	CCEC is subject to 40 CFR Part 63, Subpart AAAA – NESHAP for MSW Landfills.	Report submittals.	As required by NESHAP for MSW Landfills

COVENTRY CLEAN ENERGY CORPORATION (CCEC) LANDFILL GAS-TO-ENERGY OPERATION
IDENTIFICATION OF APPLICABLE REQUIREMENTS AND CERTIFICATION OF COMPLIANCE

Citation of Applicable State *Requirement*s of the VAPC Regulations and V.S.A. and Federal Regulations	Summary of Requirements and Description of Reference Test Method	Description of Compliance Status	Schedule of Compliance	Methods Used to Determine Compliance	Schedule for Submission of Compliance Certifications During the Operating Permit Term
Section 112 - Clean Air Act: National Emission Standards for Hazardous Air Pollutants (NESHAPs) Subpart ZZZZ	NESHAP for Stationary Reciprocating Internal Combustion Engines at major sources of HAP emissions	In compliance.	CCEC will continue to comply with this requirement.	According to 40CFR§63.6585 this Subpart is applicable if Stationary Reciprocating Internal Combustion Engines are located at a major source of HAP emissions where major is defined as any single HAP >10 tpy or any combination of HAPs >25 tpy. CCEC's LFGTE Operation complies with the requirements of this subpart, including §63.6645, §63.6625, §63.6650, and §63.6655.	
Clean Air Act §114(a)(3), 502(b), and 504(a)-(c); 40 CFR Part 70 §70.6(a)(3)(i)(8) and 70.6(c)(l); and 40 CFR Part 64 - Compliance Assurance Monitoring.	A new facility must comply with enhanced monitoring and compliance assurance monitoring requirements for any emission controlled unit subject to an emission standard with uncontrolled emissions from the unit in excess of the Title V major source thresholds.	The Landfill and LFGTE Operation (NEWSVT and CCEC) are in compliance.	NEWSVT will continue to comply with this requirement for the flares. CCEC complies with this requirement for the LFGTE Operation.	Continuous monitoring for the presence of a flame on the flares (NEWSVT) and recording of engine exhaust temperature (CCEC) and compliance testing at least once every two years for combustion efficiency of 98% or outlet NMOC concentration of 20 ppmvd and CO emission rate.	Annual submission with registration

COVENTRY CLEAN ENERGY CORPORATION (CCEC) LANDFILL GAS-TO-ENERGY OPERATION
IDENTIFICATION OF APPLICABLE REQUIREMENTS AND CERTIFICATION OF COMPLIANCE

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Title V of the Clean Air Act	Subject sources meeting one or more of the following criteria: allowable emissions of criteria pollutants > 100 tpy; VOC emissions > 50 tpy; subject to NSPS or NESHAPs.	In compliance.	CCEC will continue to comply with this requirement.	CCEC was issued a Title V construction and operating permit on March 6, 2016 for the LFGTE Facility, and a modified Title V Permit on August 1, 2018. With this application, CCEC is notifying the Agency of its intent to renew the facility's August 2018 Title V Permit No. 18-019.	As required by Title V permit
40 CFR Part 98, USEPA Mandatory Greenhouse Gas (GHG) Reporting Rule	Annual report of GHG emissions to the EPA.	Not applicable. NEWSVT submits annual GHG reports in compliance with 40 CFR Part 98 to USEPA. Based on 40 CFR 70.2 and 71.2, the USEPA's Mandatory GHG Reporting Rule [40 CFR Part 98] is not defined as an *applicable requirement*, and therefore does not need to be included in Title V Permits at this time.			

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Appendix C

Certification of Information Accuracy and Consent for Access to Property Form

VERMONT

Department of Environmental Conservation *Agency of Natural Resources*
Air Quality and Climate Division
One National Life Dr, Davis Building 4th floor [phone] 802-828-1288
Montpelier, VT 05620-3802
Dec.vermont.gov/air-quality

Air Quality & Climate Division

Certification of Information Accuracy

In accordance with §§5-409, 5-501(2) and 5-1006(f) of the Vermont Air Pollution Control Regulations this form must be signed by a responsible official of the facility and submitted with any Air Pollution Permit Application, Request for Transfer of Permit Ownership, Annual Emission Registration Submittal and Annual/Semi-Annual Compliance Reports as well as any other applications, records, reports, plans, designs, statements or documents required to be submitted to the AQCD. Note: all information submitted to the Agency is subject to 10 V.S.A. §563 regarding the confidentiality of records.

Facility Information:

Coventry Clean Energy Corporation
Facility Name (as registered with the Secretary of State)

40 Church Street
Facility Street Address

East Montpelier, Vermont 05651
Facility City/State/Zip

Dave Kresock	(802) 223-5245	dave.kresock@wec.coop
Facility Contact	Contact Phone	Contact E-mail

I certify that I have personally examined and am familiar with the information submitted herein. Based on information and belief formed after reasonable inquiry, the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Signature

1/27/23
Date

DAVID J. KRESOCK
Print Name

DIR. OF OPERATIONS
Title

To preserve, enhance, restore, and conserve Vermont's natural resources, and protect human health, for the benefit of this and future generations.