Exhibit SAD1-MTN-4

Memorandum

To: Goodrich Farm - Salisbury Anaerobic Digester 1 Project File

Date: July 6, 2020

Project #: 58073.00

From: Lydia Lee, PG

Re: Section 248 Environmental Criteria Assessment

INTRODUCTION

Salisbury AD 1, LLC ("SAD1") received an Amended Certificate of Public Good ("Amended CPG") for the Salisbury Renewable Natural Gas Facility (the "Project" or "Facility") in Case No. 18-3449-PET, on March 14, 2019. SAD1 has begun construction of the Project, which is located at the Goodrich Farm in Salisbury, VT. In the course of finalizing construction plans and equipment orders, SAD1 has recognized the need to make certain limited changes to the Project design for work yet to be completed, largely relating to equipment specifications and site layout. While these changes are relatively minor, some changes have potential for additional impacts under certain Section 248 criteria or require language changes to the current CPG conditions. For these reasons, VHB has prepared this memorandum to provide our assessment of the potential impacts of SAD1's proposed Project changes to the environmental criteria of 30 V.S.A. Section 248(B)(5) that VHB previously evaluated in support of the Amended CPG petition.

Proposed changes to the Project are summarized in the Table provided as Exhibit SAD1-MTN-1 and described in more detail in the Affidavit of Maria Sol Ucciani. A comparison Project layout plan provided as Exhibit SAD1-MTN-2 depicts proposed minor changes to the layout of the Project compared to what was approved in Case No. 18-3449-PET. A revised site plan reflecting the proposed changes is also included in Exhibit SAD1-MTN-2.

Based on the evaluations presented herein, VHB concludes that the proposed Project changes (whether characterized as material/substantial or minor) do not result in any change to our prior conclusions with respect to the conformance of the Project with the Section 248(b)(5) environmental criteria (incorporating certain Act 250 criteria) to which the Vermont Public Utility Commission ("PUC" or "Commission") must give due consideration, in the context of past filings, findings and issued Vermont state permits.

BACKGROUND

In support of the first Amended CPG petition (Case No. 18-3449-PET), VHB provided an evaluation of the proposed Project changes with consideration to the following Act 250 criteria, which are incorporated into the PUC review, in our *Section 248 Natural Resources Assessment Memorandum* (Exhibit SAD1-6, dated September 28, 2018) and *Section 248 Water Pollution Criteria Assessment Memorandum* (Exhibit SAD1-7, dated September 28, 2018; Affidavit of Lydia Lee, dated December 12, 2018 and supporting Exhibits SAD1-20, -21, and -22):

- Outstanding Resource Waters (10 V.S.A. § 1424a(d))
- Water Pollution (§ 6086(a)(1)), including:
    - Headwaters (§ 6086(a)(1)(A))
    - Floodways (§ 6086(a)(1)(D))
    - Streams (§ 6086(a)(1)(E))

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  - Shorelines (§ 6086(a)(1)(F))
  - Wetlands (§ 6086(a)(1)(G))
- Rare and Irreplaceable Natural Areas ("RINA")(§ 6086(a)(8))
- Necessary Wildlife Habitat and Endangered Species (§ 6086 (a)(8)(A))
- Impacts to Primary Agricultural Soils (§ 6086(a)(9)(B)) (although not an incorporated criterion, Exhibit SAD1-6 evaluated impacts in support of the petition)

VHB's *Water Supply & Conservation, Waste Disposal, and Soil Erosion Assessment Memorandum* (Exhibit SAD1-8, dated September 28, 2018), provided an evaluation of the Project with consideration to the following Act 250 criteria:

- Waste Disposal (§ 6086(a)(1)(B))
- Water Conservation (§ 6086(a)(1)(C))
- Water Supply (10 V.S.A § 6086(a)(2) and (3))
- Soil Erosion (10 V.S.A. § 6086(a)(4))

VHB's Section 248 Sound Assessment Memorandum (Exhibit SAD1-10, dated September 28, 2018) and John Hinckley's (formerly of GeoInsight, Inc.) *Air Quality Evaluation of the Salisbury AD1 Project* memorandum (Exhibit SAD1-5, dated October 2, 2018) provided an evaluation of sound and air pollution/greenhouse gas emissions, respectively, of the Project with consideration to 10 V.S.A. § 6086(a)(1) and 30 V.S.A. § 248(b)(5).

In making assessments of the proposed changes to the Project's impacts to the above criteria, VHB relied on prior assessments and findings for the Project's first Amended CPG, updated equipment specifications provided by SAD1, revised site plans prepared by VHB on behalf of SAD1 (Exhibit SAD1-MTN-2, an updated *Section 248 Sound Assessment* memorandum prepared by VHB ("Sound Memo"; Attachment 1), and an updated *Air Quality Changes from Salisbury AD1, LLC* memorandum ("Air Quality Memo"; Attachment 2) provided by John Hinckley (now of All4, Inc).

VHB's assessment presented herein also relies on the following Vermont state permits which have been issued to the Project:

- Vermont DEC Solid Waste Certification ("SWC"), Facility AD583. Issued May 29, 2019.
- Vermont DEC Individual Wetland Permit #2017-552 ("VWP"). Issued March 27, 2019.
- Vermont DEC Individual Construction Stormwater Discharge Permit #7482-INDC ("INDC"). Issued March 26, 2019.
- Vermont DEC Operational Phase Stormwater Discharge Permit Authorization #7482-9015 ("GP-3-9015"). Issued March 29, 2019.
- Vermont DEC Multi Sector General Permit Authorization #7842-9003 ("MSGP"). Issued October 2, 2019.

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- Vermont DEC Wastewater System and Potable Water Supply Permit #WW-9-0781-1 ("WW/WS"). Issued April 22, 2019.
- Vermont DEC Air Pollution Control Permit to Construct and Operate #AOP-18-051 ("AOP"). Issued March 18, 2019.

These permits remain applicable, although an amendment will be needed to the Stormwater Operational Permit (GP-3-9015) to simply document the updated site layout changes in the DEC's project files. In addition, an amendment to the AOP is required for the equipment changes summarized below. An AOP amendment application has been filed with DEC and a draft permit (#AOP-20-024) was issued by DEC for public comment on May 19, 2020. The public comment period has ended, and the final permit is awaiting signature by the Director of the Vermont Air Quality and Climate Division.

SAD1's PROPOSED CHANGES SEEKING PUC APPROVAL

Changes proposed to the Project for which SAD1 seeks PUC approval, as described in Section I. of Exhibit SAD-1 (Table of Proposed Project Changes), include the equipment specification changes to the following:

1. **Biogas Upgrader**

   SAD1 has selected a different Biogas Upgrader vendor, Quadrogen versus DMT, resulting in different equipment specifications, which are described in the affidavit of Maria Sol Ucciani and summarized in the Table provided in Exhibit SAD1-MTN-1. The proposed upgrader does not require water usage, compared to the previously-approved upgrader which required an estimated usage of 400 gallons per day. This change reduces overall water usage of the Project, and is therefore consistent with VHB's previous conclusions regarding the Water Supply and Water Conservation criteria, and does not require an amendment to the WW/WS Permit. As presented in the Sound Memo (Attachment 1), the Project's normal operating sound levels with the proposed upgrader will remain in the same range as the approved Project. Air emissions from the proposed upgrader are addressed through the AOP amendment and the Air Quality Memo (Attachment 2). In summary, this proposed equipment change results in no change from earlier assessments of the remaining Section 248/Act 250 Criteria listed above.

2. **Gas Flare Equipment**

   This Project change is to request a correction to the language of a CPG condition to reflect the actual gas flare equipment that SAD1 had intended to use (i.e., no proposed change to the equipment), and thus results in no change from earlier assessments of the Section 248/Act 250 Criteria listed above.

3. **Combined Heat and Power ("CHP") and Boilers Building**

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The Project change is to utilize an 800 kW natural gas fired CHP and 1.8 million British thermal units of heat input per hour (MMBtu/hour) boiler, versus the previously proposed 600 kW natural gas fired CHP and 0.99 (MMBtu/hour) boiler, as described in the affidavit of Maria Sol Ucciani and summarized in the Table provided in Exhibit SAD1-MTN-1. The engine oil volume (150 gallons) is the same as the previously proposed CHP (see Facility oil volume discussion below), and will be contained in the engine within the CHP container. As presented in the Sound Memo (Attachment 1), the Project's normal operating sound levels with the proposed CHP and boilers will remain in the same range as the approved Project. Air emissions from the proposed CHP and boiler are addressed through the AOP amendment and the Air Quality Memo (Attachment 2). In summary, these modifications result in no change from earlier assessments of the Section 248 Criteria listed above.

4. Back Up Generator

The Project change is to utilize a 760-kW diesel fired backup generator versus the previously proposed 500-kW diesel fired backup generator, as described in the affidavit of Maria Sol Ucciani and summarized in the Table provided in Exhibit SAD1-MTN-1. As presented in VHB's prior *Water Supply & Conservation, Waste Disposal, and Soil Erosion Assessment Memorandum* (Exhibit SAD1-8), VHB previously determined that the Project would not be subject to Spill Prevention Control and Countermeasure ("SPCC") planning regulations under 40 CFR 112 ("SPCC Regulations"), because the total volume of oil storage at the Project would not have exceeded 1,320 gallons. According to the manufacturer's specifications, the proposed larger 760-kW generator will contain a larger fuel tank with a fuel storage volume of 1,791 gallons (versus 900 gallons for the 500-kW generator). Therefore, SAD1 will need to prepare and implement an SPCC Plan following construction but prior to operation of the Facility. The SPCC Plan would require secondary containment for the storage of all oil in containers greater than 55 gallons. The manufacturer's specifications indicate that the generator fuel tank will consist of a primary tank sealed inside of an outer secondary tank that provides secondary containment in the event of a rupture of the primary tank. SAD1 has previously committed to storing drums in secondary containment pallets capable of capturing the entire storage volume of the drum (Exhibit SAD1-8).

The preparation and implementation of an SPCC Plan in addition to passive secondary containment around the diesel fuel tank, CHP engine, and drums would prevent the release of oil to waters of the U.S. or other sensitive receptors in accordance with the SPCC Regulations. Accordingly, VHB believes that the proposed 760 kW generator and other smaller volumes of oil storage at the facility do not pose a potential for undue adverse impacts to sensitive receptors. As VHB previously concluded, the Project will meet the applicable

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health and DEC regulations regarding the disposal of waste that have been considered and does not involve the injection of waste materials into groundwater or wells, therefore VHB concludes that the proposed Project changes will also comply with this criterion.

As presented in the Sound Memo (Attachment 1) sound levels from operation of the proposed emergency generator (for periodic testing or CHP outages) will be higher than the as-approved generator, but will be temporary, infrequent, and similar in intensity and type to existing on-farm diesel equipment. Air emissions from the proposed Back Up generator are addressed through the AOP amendment and the Air Quality Memo (Attachment 2). In summary, this proposed equipment change results in no change from earlier assessments of the remaining Section 248/Act 250 Criteria listed above.

OTHER CHANGES

Minor changes proposed to the Project, as described in Section II. of Exhibit SAD-1 (Table of Proposed Project Changes), include the following:

- RNG Output of Upgrader (Nameplate Capacity);
- Nutrient Management Equipment Vendor;
- Manure Tank – use of existing farm tank with upgraded pump and addition of a mixer; and
- Site Layout Changes within existing Limits of Disturbance (refer to Exhibit SAD1-MTN-2) – includes the general reconfiguration of the Nutrient Cake Storage Area, digesters, hydrolyzer, buildings, and the truck turnaround to address the subsurface ledge conditions that were found during construction. In addition, the proposed non-potable water supply well has been relocated to be closer to the utility buildings. The non-potable well is being constructed by a licensed well driller. VHB understands that the covered wellhead casing will extend more than 18 inches above the surrounding ground to prevent surface flow from entering the wellhead. VHB concludes the well's construction would prevent the injection of waste materials into groundwater or wells.

Based upon VHB's review of the changes summarized in Table II of Exhibit SAD1-MTN-1, we conclude that they do not have the potential for significant impacts under the Section 248(b)(5) Criteria previously evaluated by VHB for the Project. All site layout changes will occur within the same Limit of Disturbance previously permitted in the Project's INDC and do not change the permitted wetland/buffer impacts as authorized through the issued VWP. As required by the Project's SWC, SAD1 will file as-built construction plans with the DEC Solid Waste Program to document the final site layout and components. As stated above, SAD1 will file an amendment to the GP-3-9015, solely to document the updated site layout changes in the DEC's project files.

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CONCLUSION

VHB concludes that the proposed Project changes do not result in any change to our conclusions with respect to the conformance with the Section 248(b)(5) criteria referenced herein.

ATTACHMENTS

1 – Section 248 Sound Memorandum, VHB, July 2, 2020
2 – Air Quality Changes from Salisbury AD1, LLC Memorandum, All4 Inc., July 2, 2020

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Attachment 1

Memorandum

To: Salisbury AD 1 Project File
Date: July 2, 2020
Project #: 58073.00
From: Jason Ross, Director of Noise and Vibration
Re: Section 248 Sound Assessment

SUMMARY

Salisbury AD 1, LLC ("SAD 1") has asked VHB to review the estimated sound levels of the Project due to proposed changes in certain equipment. Based upon our revised analysis, our conclusion remains the same as previously reached, that the Project will not result in undue adverse impacts due to noise.

EQUIPMENT

Operational Equipment: The following list of equipment was used in this analysis and it is assumed that all are simultaneously and continuously operating:[1]

- A TEDOM Quanto 800 kW natural gas-fired CHP (revised from as-approved project). 86 dBA at 3 feet.
- Small utility flare (no change to equipment selected). 64 dBA at 3 feet.
- A biogas upgrader including compressors (revised from as-approved project). 85 dBA at 3 feet.
- A long arm vertical mixer (no change to equipment selected). 66 dBA at 3 feet.

Emergency Equipment: The following equipment will only operate on a temporary and infrequent basis:

- A Kohler KD800 (Tier 2) 720-800kW diesel-engine emergency generator with a sound enclosure (Level 1). 108 dBA at 3 feet.

The emergency generator is tested weekly during daytime weekday hours for between 15 minutes and one-hour to maintain its operational readiness. Otherwise, it will only be utilized during temporary and infrequent periods due to an outage of the CHP unit. The emergency generator would produce a sound of similar intensity and noise of typical diesel equipment already operating on the farm.

SOUND LEVEL PREDICTIONS

Sound levels have been recalculated at four residences on Shard Villa Road (i.e., not including on-farm trailers or homes). The maximum sound levels from the Project from the operational equipment would remain in the same range as the as-approved Project -- 32 to 35 dBA (1 hr Leq) at these residences. Sound levels during use of the emergency generator would increase to 50-52 dBA at the residences, during temporary and infrequent periods. The sound from the emergency generator would be similar in intensity and type to the ongoing noise generated on the farm by its diesel equipment. It is our conclusion that the proposed changes to the Project equipment would not result in an undue adverse impact due to noise.

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[1] SAD1 has also proposed increasing the size of one of the two boilers in the CHP building. The sound generated by each boiler (both sizes) is in the range of 40 dBA, which is substantially less than the other equipment listed herein and thus does not affect the overall sound levels at the residences.

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Attachment 2

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MEMORANDUM

To:	Lydia Lee - VHB	**Date:**	July 2, 2020
From:	John Hinckley, QEP		
Subject:	Air Quality Changes from Salisbury AD1, LLC		
cc:	Andrew Raubvogel - Dunkiel Saunders; Sol Ucciani - Vanguard Renewables		

Introduction

At your request, ALL4 LLC (ALL4) has performed an evaluation of the impact to ambient air quality resulting from design changes to the Salisbury AD1, LLC (SAD1) anaerobic digester.

SAD1 is located at 615 Shard Villa Road in Salisbury, Vermont, is currently being constructed, and is owned and operated by Vanguard Renewables (Vanguard). SAD1's air emissions are regulated by Construction and Operating Permit #AOP-18-051 (Permit) issued by the State of Vermont Air Quality and Climate Division (AQCD). The AQCD issues permits for projects that it has concluded through the engineering review and public comment processes will not cause or contribute to violations of the ambient air quality standards and/or significantly deteriorate existing air quality.

I prepared an application on behalf of SAD1 to amend the Permit (Amended Permit) to increase the size of the following equipment that is regulated under the Permit: [1]

(i) Combined Heat and Power (CHP) Building: CHP unit from 600 to 800 kilowatts (kW)
(ii) the emergency generator from 510[2] to 760 kW,
(iii) the Biogas Upgrader from 520 to 650 standard cubic feet per minute (scfm), and
(iv) a natural gas-fired boiler from 0.99 to 1.8 million British thermal units of heat input per hour (MMBtu/hour),

The change in these equipment items is necessary to provide increased heat and power generating capacity during short-term operations such as start-up. The increased capacity of each equipment item will not be necessary during normal operations, which will occur most of the year; this is due to less heat and power being required because the anaerobic digester will have reached equilibrium conditions.

The AQCD reviewed and approved the application and issued a draft Amended Permit. The 30-day public comment period has ended and the Amended Permit (#AOP-20-024) is awaiting signature by the Director of the AQCD. Refer to Permit #AOP-20-024 for a description of the equipment design changes.

[1] I also previously observed operations at a similar Vanguard biodigester facility in Deerfield, MA

[2] I note that while the prior PUC filings listed the Emergency Generator as being 500 kW, the Air Permit lists it at 510 kW. This may have been an inadvertent error in the PUC materials, but in any event this difference not affect my prior analysis of air impacts, or my new analysis of the larger 760 kW unit.

Key Permit Change Findings

Below are key findings developed from preparing both Permit applications and reviewing the original Permit and Amended draft Permit, which demonstrate that the equipment changes will not negatively impact ambient air quality:

1. Overall permitted air emissions will decrease by approximately seven tons per year. Specifically, the sum of the Allowable Air Contaminant Emissions values listed in both Permits (i.e., page 5 of #AOP-18-051 and page 5 of #AOP-20-024) decreases by 7.3 tons per year. The emissions reduction is mostly due to changes in the CHP design which reflect lower manufacturer guaranteed not-to-exceed carbon monoxide (CO) and nitrogen dioxide (NO_2) emission rates.
2. Both Permits include similar monitoring, recordkeeping, reporting, and testing requirements that must be performed to demonstrate ongoing compliance with State and Federal air pollution control regulations.
3. Both Permits require the same level of air emissions control from pollution control equipment.
4. Exhaust stacks venting air emissions will meet the AQCD design recommendations in Permit Condition (4) of both permits for proper air dispersion of emissions.

Conclusion

Air emissions allowed under the Amended Permit due to the equipment changes will decrease. Further, compliance with the Amended Permit's conditions will enable SAD1 to comply with the state and federal air pollution control regulations that were promulgated to protect human health and welfare. As a result, the equipment changes do not have the potential for significant air quality impacts and will not cause undue adverse impacts to ambient air quality.

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