

LANDFILL GAS PROJECT VERIFICATION REPORT

Verification under the Climate Action Reserve (CAR)

Project CAR560:
*New River Landfill Gas Methane Destruction
Project*

Reporting Period:
01 January 2019 to 31 December 2019

Prepared for:
New River Resource Authority

24 February 2021



CLIMATE ACTION RESERVE



#0821
ISO 14065
Greenhouse Gas Validation
and Verification Body

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Summary

This report presents the findings of the verification assessment of the New River Landfill Gas Methane Destruction Project (“the Project”) developed by New River Resource Authority (“the Project Proponent”). This assessment covers the New River Landfill Gas Methane Destruction Project’s greenhouse gas emission reductions reported to the Climate Action Reserve (the Reserve or CAR) for the verification period 1 January 2019 to 31 December 2019.

The evaluation was undertaken using the Climate Action Reserve Landfill Project Protocol, version 5.0 as well as the verification methodology developed by SCS Global Services (SCS) for carbon offset projects submitted to the Reserve.

In the course of the verification assessment, the SCS Global Services verification team developed findings which may include New Information Requests (NIRs), Non-Conformity Reports (NCRs) and/or Observations. The findings have been adequately responded to, resulting in their closure.

On the basis of the information provided and the analyses completed, SCS Global Services was able to reach a decision on the emissions reduction reported by the Project Proponent to the Climate Action Reserve. SCS verified the adequacy of the information provided in the Project Monitoring Plan, confirming that this document meets the requirements of the Climate Action Reserve standards. Furthermore, SCS was able to reach a positive opinion on the Project claimed emission reductions presented in the Project Documentation and on the Reserve website by New River Resource Authority. Thus, SCS has verified 62,594 metric tonnes of CO_{2e} reductions and removals from the New River Landfill Gas Methane Destruction Project for the reporting period 1 January 2019 to 31 December 2019.

Introduction

SCS Global Services (SCS) is a global leader in third-party certification, auditing, testing services, and standards. Established as an independent third-party certification firm in 1984, our goal is to recognize the highest levels of performance in environmental protection and social responsibility in the private and public sectors, and to stimulate continuous improvement in sustainable development. In 2012, Scientific Certification Systems, Inc. began doing business as SCS Global Services, communicating its global position with offices and representatives in over 20 countries. SCS is currently accredited to ISO 14065 for GHG Validation and Verification by the American National Accreditation Board (ANAB) and offers carbon offset validation and verification under the Verified Carbon Standard (VCS) and the American Carbon Registry (ACR). SCS also offers carbon offset verification under the Climate Action Reserve (CAR) and the Climate, Community and Biodiversity (CCB) standards.

SCS was commissioned by New River Resource Authority to undertake the annual project verification of the New River Landfill Gas Methane Destruction Project. The project consists of the collection of landfill gas (LFG) from the New River Resource Landfill and subsequent destruction in an open flare and a landfill gas-to-energy (LFGE) project, which commenced commercial operations in January 2015. This report covers the verification period of 1 January 2019 to 31 December 2019 as a project deliverable to the Climate Action Reserve.

Project Description

New River Resource Authority, the project developer, is a municipal landfill as described by NAICS code 562212. The New River Resource Authority Regional Solid Waste Management Facility is owned and operated by the New River Resource Authority (“NRRA”) and is located approximately 6 miles north of the Town of Dublin, off of U.S. Route 100 along the southern slopes of Cloyd’s Mountain. The Facility consists of approximately 552 acres of which 350 acres have been designated for landfilling purposes.

During the project reporting period covered by this report, landfill gas was collected and routed to an electric generation station or to a single open flare (in the event that the electric generation plant is not in operation) – both located at the landfill. In addition, the Project entered its second crediting period and upgraded to Landfill Project Protocol 5.0 from version 2.1.

Verification Team

The SCS verification team consisted of the following individuals:

Lead Verifier: Mark Lutz

Technical Reviewer: Tina Sentner

Verification Details

Verification Objectives

The objective of the verification is to:

- Evaluate conformance with the Landfill project as defined in the criteria stated below.
- Determine with a reasonable level of assurance whether the Project has resulted in the GHG emissions reductions and/or removals as stated in the project documents.
- Evaluate the project planning information and documentation including the determination of project eligibility, project design, baseline and project emissions determination, management systems supporting the project, and methodologies employed for the calculation of GHG emission reductions.

Verification Criteria

SCS Global Services conducted the verification assessment of the project and project documentation against the following criteria:

- CAR US Landfill Project Protocol, Version 5.0 (April 24, 2019)
- Reserve Offset Program Manual (October 23, 2020)

As an ANSI-accredited verification body, SCS conducted the verification to the requirements of:

- CAR Verification Program Manual (February 8, 2017)
- ISO 14064-3: 2006, Greenhouse Gases – Part 3: Specification with guidance for the validation and verification of GHG assertions

Level of Assurance

SCS performed the core verification activities to a reasonable level of assurance as required by Climate Action Reserve guidelines.

Treatment of Materiality

In consideration of the required level of assurance, the needs of the intended user, and the requirements of the CAR Program, SCS applied a materiality threshold of 3 % because the total annual emissions are greater than 25,000 tCO₂e but less than 100,000 tCO₂e per Climate Action Reserve Guidelines. The data reviewed was considered to meet the principles of accuracy, completeness, transparency, and is free of material error or omission.

Verification Process

Verification Summary

The verification process consisted of the following:

1. Project listed with the Climate Action Reserve:

The New River Landfill Gas Methane Destruction Project was listed on the Climate Action Reserve (CAR) website and New River Resource Authority selected SCS Global Services as their verification body.

2. Conflict of Interest Review.

A Notification of Verification Activities/Conflict of Interest (NOVA/COI) form was submitted to CAR. The COI assessment was conducted to identify any potential conflicts interests with the verification/project. No conflicts were identified and a determination of low potential for conflict of interest was received from the Climate Action Reserve prior to the commencement of verification activities in a determination letter dated 20 October 2020.

3. Introductory Meeting:

A kick-off meeting was conducted between the verification team and New River Resource Authority on 3 November 2020. The purpose of the kick-off meeting was to review the timeline of audit; confirm verification criteria; determine any changes in the site, sources, GHG management systems or personnel, and to begin gathering information.

4. Desk Review

SCS received and reviewed the Monitoring Plan, CAR submittals, and supporting documentation to assess initial conformance with the data requirements of the CAR Landfill Project Protocol, Version 5.0 (April 2019.) A risk assessment was conducted to identify key factors that impact the reported emission reductions and removals. A Verification Plan was created to focus on the critical elements presenting potential risk for errors with the project.

5. Site Visit

A remote site visits was conducted by the lead verifier completed on 18 November 2020. The purpose of the site visit was to verify the project equipment, location and eligibility, to review and evaluate the project GHG management systems, data collection and handling, and emission reduction calculations and procedures in place, and to finalize the risk assessment and sampling plan. During both the site visit and the kick-off call, the Project Proponent confirmed that there were no changes to the GHG Management system, data collection and handling or procedures since the previous site visit.

6. Quantitative Review

An assessment of the emission reduction calculation inputs and procedures was performed to review the quantitative analyses undertaken by the Project Proponent to convert the raw inventory data into emission reduction estimates.

7. Findings

Throughout the verification, there is an iterative exchange between SCS Global Services and the Project Proponent to gather additional information for review and examination.

This exchange can include Findings – New Information Requests (NIR), Non-Conformity Reports (NCR), and Observations – that are issued by SCS to the Project Proponent. The Project Proponent must respond to NIRs and NCRs in order for SCS to render a verification opinion. At this time all Findings have been appropriately addressed by New River Resource Authority and subsequently closed by SCS.

8. Draft Report and Statement

This step in the verification process includes a final review of the submitted data, completion of the Verification Report, and drafting of the Verification Statement. A draft Verification Report and Statement are completed based on the results of the verification assessment.

9. Technical Review

The draft report was presented to an SCS lead verifier, independent of the verification, who determined the Verification Statement to be justified given the evidence presented. The Verification Report and Verification Statement were then presented to New River Resource Authority for review and comment.

10. Final Report and Statement

Once New River Resource Authority approved these documents, SCS uploaded them to the Reserve website for administrative review by CAR. Given a positive review, CAR will register the emissions reductions for the landfill gas project and issue carbon tonnes for a reporting period of 1 January 2019 to 31 December 2019.

11. Exit meeting with New River Resource Authority

The exit meeting entails a review of the verification process, summary of the verification findings and to initiate scheduling for the next verification period if applicable.

Verification Findings

SCS verified the NRRRA Landfill against the requirements of the LPP. The following sections detail the most essential aspects of the verification of the Project.

Project Eligibility

The LPP specifies eligibility rules that the Project must meet in order to register reductions with the Reserve. Below is a summary of the eligibility requirements and the Project's compliance to each requirement.

Location

The project is a U.S. based landfill located near the town of Dublin, Virginia, USA and therefore meets this eligibility requirement. SCS Global Services confirmed the location through the remote site visits.

Project Start Date

As stated in the Landfill Gas Protocol, projects with start dates as early as 1 January 2001 must be listed with the Reserve twelve months from the effective date of the protocol. The start date is defined as the date at which a qualifying destruction device becomes operational.

The Project was originally listed with the Climate Action Reserve on 30 November 2009, which was within 12 months after the publication of version 2.1 of the Landfill Project Protocol. The project start date occurred on 14 January 2008, the day the open flare became operational on a continuous basis. SCS Global Services reviewed flare data monitoring forms that show the first time (14 January 2008) flow and methane content were recorded and a letter from the SCS Engineers that mentioned a 14 January 2008 startup date.

Based on this review, SCS Global Services had confirmed the start date of the Project and that the Project was listed with the Climate Action Reserve within 12 months of the effective date of the adaption of Version 2.1 of the protocol on 14 October 2009 per Reserve guidelines.

SCS concluded that these documents supported the project start date listed on the Reserve Website and the Project therefore meets the start date eligibility criteria of the LPP.

Crediting Period

The 1st crediting period for landfill projects is 10 years from the project start date. The first crediting period for this project extended to 13 January 2018. The 2nd crediting period began 14 January 2018 and extends to 13 January 2028. NRRA met the eligibility requirements for the 2nd crediting period and re-registration of the project was confirmed in the CAR online portal on October 19, 2020. Based on this review, SCS confirms that this reporting period is within the second crediting period of the Project.

Additionality

Project Proponents must indicate that reductions are above and beyond business as usual. In order to do so, the Project must pass a Performance Standard test and the Legal Requirement test.

Performance Standard

For the Performance Standard test, a project developer may meet eligibility under four possible performance threshold scenarios. The following scenario applies to the New River Resource Authority Landfill:

“Installation of a new qualifying destruction device at an eligible landfill where landfill gas was collected and destroyed at any time prior to the project start date using:

a. A non-qualifying destruction device (e.g. passive flares.)

The landfill had originally installed two passive vent wellhead flares on leachate cleanout riser

pipes for the purposes of odor control. Only one of those passive flares ever operated and destructed landfill gas. The second passive flare was never in operation and did not combust LFG while attached to the leachate pipe. These units were decommissioned during November 2007 to accommodate the connection to the active LFG collection system.

With the removal of the passive flares and the installation of the present project system, the Project clearly meets the performance standard test criteria of the Reserve's U.S. Landfill Project Protocol, v5.0. As required by this protocol, baseline landfill gas emissions have been calculated to include a deduction for the pre-project destruction of LFG by the formerly operating non-qualifying device.

Legal Requirements

For the Legal Requirement Test, Project Proponents must ensure that emission reductions achieved by the Project would not have occurred in the baseline case due to federal, state, or local regulations.

The verification team conducted a regulatory review of the Project and the landfill. The results of the regulatory review indicated the landfill is in compliance with Federal, State and Local regulations. There are no laws, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions, or other legally binding mandates requiring the destruction of landfill gas at the New River Resource Landfill. The Project Developer has also developed a procedure in the monitoring plan to ascertain and demonstrate that the project at all times passes the legal requirements test. The verification team reviewed the monitoring plan, the Virginia Department of Environmental Quality (VDEQ) Air Permit, the Title V Permit, and the Municipal Solid Waste Permit and found no requirements to install a gas collection system.

In addition, the New River Resource Authority Landfill has conducted a non-methane organic compound (NMOC) Threshold review. The most recent Tier 2 NMOC Emission Rate Report for NRRA Landfill was conducted in March 2016 with a result of 24.10 Mg/yr NMOC for 2019. This is below the 34 Mg/yr threshold and therefore the landfill is not required to install a gas collection and conveyance system during the reporting period. The landfill has not undergone an expansion and is not anticipated to reach or exceed the NMOC threshold limit of 34 Mg/yr by 2021. At that time, the NMOC threshold will be reviewed to determine if a gas collection and conveyance system is required.

Lastly, SCS reviewed the Attestation of Voluntary Implementation, signed on 4 November 2020 by an eligible signatory to attest for the Project. NRRA management has affirmed that the Project was established and implemented voluntarily and continues to operate as such. Based on this evidence, SCS concludes the Project passes the legal requirements test.

Regulatory Compliance

SCS reviewed the Attestation of Regulatory Compliance submitted by NRRA dated 4 November 2020 affirming the Project's compliance status throughout the project reporting period. During the site visit and desk review activities, SCS was able to confirm to a reasonable level of assurance that the Project is in compliance with local, state, and Federal regulations and had no material regulatory non-conformance events. SCS reviewed the EPA Enforcement & Compliance History Online database (ECHO) and the solid waste inspection reports from the VDEQ to confirm that there were no outstanding regulatory penalties or notices of non-compliance against the Landfill during the reporting period. There was no evidence of non-compliance. SCS also confirmed the Project's monitoring plan contained procedures for maintaining and monitoring regulatory compliance and that the procedures were being properly followed. The results of the regulatory review indicated that the Project was in compliance with Federal, state and local regulations. Lastly, SCS confirmed the Attestation of Regulatory Compliance was signed by an eligible signatory to attest for the Project. Based on this review, SCS concludes the Project met the Regulatory Compliance requirements of this landfill methane gas destruction project.

Ownership

New River Resource Authority is the sole owner of the New River Resource Authority Landfill and is the Project Proponent. Ownership was confirmed through review of various regulatory permits issued from VDEQ, as an interview with NRRA management and invoices for the purchase of electricity for the flare. SCS also reviewed the Landfill gas purchase agreement between NRRA and Ingenco entered into on 4 May 2011. This agreement confirms NRRA retains all rights to any GHG credits, benefits and offsets generated from the sale of the landfill gas. In addition, the verification team verified the contractual scope of work statement that NRRA executed with SCS Engineers. This agreement was executed on 2 September 2020 and provided for SCS Engineers to provide consulting services to NRRA to assist it with the monetization of emission credits.

Lastly, SCS reviewed the Attestation of Title signed by an eligible signatory of NRRA dated 4 November 2020 concerning ownership of landfill gas emission reduction credits for the reporting period. This document asserts that the project applicant has legal rights to any emission reduction credits to be issued by the Reserve. From this evidence, SCS has concluded that the project developer, NRRA, is entitled to receive the emission reduction credits that may be issued by the Reserve for methane destroyed during this reporting period.

The GHG Assessment Boundary

The Project includes all emission sources from the operation of the landfill gas collection system to the ultimate destruction of the landfill gas. The sources of GHG emissions reviewed include:

The GHG sources, sinks, and reservoirs associated with the baseline scenario are:

- CH₄ vented to the atmosphere and un-combusted CH₄ from landfill gas in a pre-project flare.
- CO₂ from the oxidation of CH₄ by soil bacteria. As the landfill is not covered with a synthetic liner, the CAR Landfill Project Protocol, version 5.0 assumption that 10 percent of the methane produced would be naturally oxidized by soil bacteria has been applied.

The GHG sources, sinks, and reservoirs associated with the project are:

- Un-combusted CH₄ from Landfill gas in an open flare and in the internal combustion engines of the power plant.
- CO₂ from the combustion of fossil fuels (diesel for the power plant and propane for the flare) used during operation and maintenance activities for the project activity.
- CO₂ resulting from the consumption of imported electricity.

The gases reviewed include CO₂ and CH₄. All gases are converted to CO₂ equivalents.

Review of Project GHG Management Systems

During the virtual site visit, a review of the Project's greenhouse gas management systems was detailed with the Project Proponent. This review included a detailed look at the Project's data handling and processing procedures, recordkeeping and data storage, and the quality control and assurance procedures. The following is the result of this review:

Project Monitoring

The primary data gathered for the Project is landfill gas flow, pressure, temperature, and methane content of the landfill gas.

Flare Flow meter:

The flare was equipped with a Veris Verabar fixed element (V100-10-H-M) annubar flow meter coupled with a Rosemont Differential Pressure transmitter. Manufacturer calibration was not required for the Verabar fixed element, but bi-annual inspection for any clogging was recommended by the manufacturer. For the Rosemont differential pressure transmitter: the manufacturer suggested calibration once every three years. The Rosemount Transmitter was originally factory calibrated on December, 2007, with a calibration done 14 November 2017 and last calibrated 14 May, 2019 – all done by a certified calibration service. The position of the flow meter was adequate to ensure laminar flow. The meter calibration frequency met the calibration requirements of the manufacturer.

SCS also confirmed that the flow meter was inspected and cleaned by NRRRA personnel on a quarterly basis within the reporting period with the activities and results documented by project personnel. See table below:

Cleaning and Inspection Date	Service Provider
2/5/2019	NRRA personnel
5/15/2019	NRRA personnel
8/07/2019	NRRA personnel
11/13/2019	NRRA personnel
12/13/2019	NRRA personnel

Table 11. Flow Meter Field Cleaning and Inspection Records – Flare

Per the Landfill Project Protocol v.5.0, the protocol requires that all gas flow meters are: *"Field checked for calibration accuracy by a third-party technician with the percent drift documented ...at the end of – but no more than two months prior to or after – the end date of the reporting period."*

The SCS team noted that there was no evidence of this requirement being met for the 2019 reporting period. A variance was request and granted to the project proponent for this issue. (See “Variances” later in this report for further details.)

Ingenco (Engines) Flow meter:

The power plant facility was equipped with a Rosemont Flow meter coupled with an orifice plate. The factory-recommended calibration is once every three years. The Rosemount Transmitter component of the flow meter (which, per the manufacturer, is the only element that needs to be calibrated) was originally factory calibrated December 2015 and again calibrated by a qualified third-party 2 October 2019.

SCS also confirmed that the flow meter was also inspected, cleaned and field checked for calibration accuracy on a yearly basis with the as found/as left conditions of the flow meter documented. Noted that this frequency follows the minimum requirements in the monitoring plan and is in line with the manufacturers’ recommendations. The inspection shows that the flow meter read within a +/- 5% margin of error during the reporting period and the calibration was within 2 months prior to or after the end of the reporting period. The calibration results for the flow meter were reviewed for this verification period and indicate the instrument is reporting accurate data.

Methane Concentration

NRRA owns and maintains one portable gas analyzer used to collect weekly LFG quality data - an Elkins Earthworks 1104 Envision meter. NRRA also has access to an additional portable gas analyzer - a Landtec GEM-5000 (Serial No. G501772.) This GEM-5000 meter serves as an emergency back-up meter to the primary Elkins meter and was not used during this reporting period.

The Landtec and Elkins instruments are both infrared gas analyzers which measure the concentrations of methane, oxygen, carbon dioxide and balance gas (assumed to be nitrogen) in samples taken directly from the LFG header piping.

NRRA personnel performed weekly methane quality monitoring (for landfill gas going to either the flare or the engines) using the Elkins Envision 1104 instrument. The Elkins was factory calibrated annually (most recently on 22 October 2019 and previously October 2017. There was no 2018 reporting period (the project proponent filed for a zero credit reporting period during this time) and no calibration took place during that time. The analyzer continued to conform to the manufacturer-recommended factory calibration intervals. The analyzer was field calibrated by NRRA personnel before each weekly monitoring event using a gas of known specifications (50% CH₄ and 50% balance gas). All calibration events were documented according to the Protocol requirements.

Hours of operation are continuously monitored by Kw hour produced by the engine via a PLC and recorded on a SCADA system every one minute.

Raw data from the flow meters were continuously collected every minute automatically onsite by a Yokogawa data acquisition device. Data was also recorded on a SCADA system as backup should the Yokogawa malfunction. Monthly reports are generated by exporting the data directly from the Yokogawa and converting the data into Excel files. The raw data is generally stored indefinitely by NRRA in two locations; however, at a minimum the data is stored for a period of 10 years after the information is generated or 7 years after the last verification.

A Project Monitoring Plan has been created for the Project. The contents of the monitoring plan were thoroughly reviewed and observed to meet the requirements of the Landfill Project Protocol. The monitoring plan records are kept for a minimum of ten years when the information is first generated or seven years after the last verification, per the project developer's Monitoring Plan.

Based on this review, SCS confirmed the Project was implemented in accordance with the Project monitoring plan.

Quantitative Review of Carbon Reductions and Removals

SCS devoted a portion of the verification assessment to the review of the manner and propriety by which NRRA quantified their net GHG reductions and removals. This assessment included a review of the baseline determination, project assumptions, raw data inputs, and accuracy of calculations. The formulas and raw data inputs used to determine emission reduction calculations as described in the PDD and the calculation spreadsheets were first reviewed for compliance with the LPP. The main parameters of Equation 5.1 were verified as follows:

Total Annual Methane Emissions Destroyed By The Project Landfill Gas Collection And Destruction System (CH₄ Dest_{PR})

The amount of methane destroyed is calculated from the continuously metered landfill gas flow data to both the flare and to the Ingenco engine gensets. For the verification period, data was

electronically aggregated into one-minute intervals for both the flare and the Ingenco plant. The main monitored parameters needed to calculate the amount of methane destroyed are:

LFG_{i,t} = total quantity of landfill gas fed to the destruction device and
 PR_{CH₄}_{i,t} = the average methane fraction of the landfill gas in time interval t as measured

The flare flow is first adjusted for low temperature (flare) by voiding the flow for any period when the flare temperature is below the threshold of 500 degrees F. The engine flow is adjusted by voiding the flow for any period when there was no evidence of diesel fuel usage. In addition, kW output was also monitored as a check to the above.

Daily flow is then calculated by summing the flare and engine flows for each interval period to produce a daily total. The incremental methane destroyed flow is calculated based on weekly methane concentrations by the daily total of landfill gas with temperature and pressure taken into consideration. Total daily destroyed methane is carried forward into further calculations for the flare and engines to determine emission reductions for the project.

Adjustment For Landfill Gas Flow Metering Equipment For Temperature And Pressure

The flare flow meter is set for 59 degrees F and 1 atm and is corrected to 60 degrees F in internal flow calculations. For the Ingenco flow meter, temperature and pressure of the landfill gas is set at 60 degrees F and 1 atm and no additional calculations were necessary.

Default Methane Destruction Efficiency For Device (Dei)

The value applied was 0.960 for an open flare as prescribed by the Protocol. The Project Developer has taken an approach of applying a 200 degrees F temperature minimum to emission reduction calculations to ensure 96% destruction efficiency of the flare. For the Ingenco engine gensets, a 0.936 efficiency factor was applied as prescribed by the Protocol.

Factor For The Oxidation Of Methane By Soil Bacteria (OX)

The Project uses a synthetic liner cover system over only a portion of the landfill; therefore a 10% methane soil oxidation factor was applied to the baseline including the Project and Pre-Project scenarios.

Discount Factor To Account For Uncertainties Associated With The Project Monitoring Equipment (DF)

It was verified that measurement readings are measured weekly using a calibrated portable gas analyzer. As per the methodology, DF equals to 10% if using a portable methane analyzer where methane content was measured once per week.

Adjustment To Account For Pre-Project LFG Destruction Device (PREdiscount)

An adjustment to the project baseline was necessary due to the installation of a pre-project destruction device (an open utility flare). For the purposes of quantifying the deductions against

the baseline for the operation of this non-qualifying destruction device, NRRA has used the maximum rated capacity of the utility flare, the maximum operation period (i.e., 24 hours/365 days), and the average annual methane concentration monitored during the first reporting year, 2008.

Total Annual Indirect Carbon Dioxide Emissions From The Consumption Of Electricity From The Grid (EL_{CO2}) and Total Annual Carbon Dioxide Emissions From The Destruction Of Fossil Fuel (FF_{CO2})

CO₂ emissions result from consumption of electricity to power project equipment and activity data for this source was tracked by reviewing utility invoices from the power supplier. Direct CO₂ emissions resulted from propane used to assist the ignition of the flare and from the use of diesel fuel used as part of the fuel mix for the engines in the power plant. This activity data is taken from purchase invoices (diesel) and from estimates for propane used. The emission factors for electricity, propane and diesel were verified and no material errors were found.

Project emissions consisting of indirect emissions from electricity and direct emissions from propane and diesel use are subtracted from the total amount of methane destroyed. The values are presented in the final calculation spreadsheets for the verification period.

Missing Data Procedures

There were no Missing Data procedures applied to the data in this report period.

Zero Credit Reporting Periods

Emission reduction credits were last issued through December 11, 2017. NRRA became ineligible to participate with the Climate Action Reserve under its Landfill Reporting Protocol version 4.0, but was able to re-register with CAR for a second crediting period under version 5.0. As a result, a zero-credit reporting period (“ZCRP”) was applied for and issued by the Reserve on 15 October 2020 for the December 12, 2017 through December 31, 2018 period. Re-registration of the project was confirmed in the Reserve online portal on October 19, 2020.

Per the Reserve’s requirements: *The verification body must be able to confirm with reasonable assurance that project emissions were less than baseline emissions during the zero-credit reporting period. Project developers shall provide project documentation and calculations for zero-credit reporting period emissions to the verifiers.* The SCS verification team can confirm with a reasonable level of assurance, based on our review of the data supplied, that the project emissions were less than the baseline emissions during the zero-credit reporting period.

Variances

- 1) For this reporting period, an “Extraordinary Circumstances Request Determination” was granted to the project to conduct a virtual site visit in place of an in-person site visit. SCS conducted a virtual site visit on November 16, 2020 using information and communications technology (ICT) per the following CAR requirements:

- SCS Global Services was able to conduct a full assessment of the implementation and operation of the project activity through the virtual site visit.
 - SCS Global Services was able to request a full virtual walk through of the facility and was able to verify all Landfill Verification Items as they are presented in Section 8.5 of the Protocol.
 - SCS adhered to all the requirements for virtual site visit as they were described in the email connected to the determination.
- 2) The protocol requires that all gas flow meters must be field checked for calibration accuracy at the end of – but no more than two months prior to or after – the end date of the reporting period. New River Resource Authority had requested a variance for the Reserve to accept the field check for calibration accuracy that was performed for the flow meter on May 15, 2019, which is seven months before the end of the reporting period. This was granted and subject to additional verification body confirmations:
- The SCS Verification Team reviewed the calibration certificates from May 15, 2019 and confirmed that the flow meter was within the 5% accuracy threshold.
 - The SCS Verification Team reviewed a revised Monitoring Plan and confirmed that it now specifies an appropriate flow meter calibration schedule to ensure that future reporting periods will meet protocol monitoring requirements.
 - The SCS Verification Team confirmed that an additional 10% discount was taken from 7/15/19 - 12/31/19.
- 3) And finally, New River Resource Authority had requested a time extension for the New River Landfill project submission due to extraordinary circumstances. This was granted subject to the following and verified by the SCS Verification Team:
- The project was submitted for registration prior to 6/30/2021.
 - The project had commenced verification and conducted a virtual site visit for the current reporting period “by the date of this determination, 12/21/2020”
The SCS Verification Team verified that a site visit occurred prior to this date on 18 November 2020.

SCS confirmed the Project and verification met the requirements of the above.

Verification Results

The verification of the New River Landfill Gas Methane Destruction Project focused on the accurate collection of data and quantification of emission reductions as implemented by NRRA in accordance with the verification criteria. A sample set of raw flow data (consisting of landfill gas flow and temperature) and methane concentration was randomly selected and reviewed in order to

identify material misstatements due to transcription mistakes, mathematical errors or malfunction of instruments. The emission reduction calculations were recalculated by the verification team and found to be in conformance with the landfill project protocol.

Based upon the verification process and the evidence collected, SCS concludes that the GHG assertion is a fair representation of the Project emission reductions resulting from the capture and destruction of landfill gas during the reporting period 01 January 2019 to 31 December 2019 and can be considered:

- In conformance with the Landfill Project Protocol, Version 5.0 (April 24, 2019)
- Without material discrepancy, and
- Verified to a reasonable level of assurance

The following provides a summary of the verification results:

Emissions Verified	Baseline Emissions CO₂e (metric tons)	Project Emissions CO₂e (metric tons)	Pre- Project Emissions	Emission Reductions CO₂e (metric tons)
2019	75,724	750.1	12,380	62,594

Note: Final emission reduction number is rounded down for simplicity.

Throughout the verification process, SCS made several supplemental documentation requests in the form of Findings – NIRs, NCRs, and OBSs. These requests provided clarification regarding the Project. The Findings from the verification of the Project are compiled in a separate “List of Findings” document and are available under separate cover. The List of Findings is only shared between the Project Proponent and verifier and is not publicly available.

Recommendation

The Lead Verifier recommends that SCS Global Services issue a positive verification opinion for the following:

<i>Project Developer Name & Address</i>	New River Resource Authority 7100 Cloyds Mountain Rd, Dublin, VA 24084 USA
<i>Scope of Verification</i>	Emission reductions arising from the capture and destruction of Landfill Gas Methane from: New River Resource Solid Waste Landfill
<i>Reporting Period</i>	01 January 2019 to 31 December 2019
<i>Total GHG Emission Reductions Verified</i>	Vintage 2019: 62,594 metric tonnes CO ₂ e
<i>GHG Protocol(s) Used for Verification</i>	■ CAR US Landfill Project Protocol, Version 5.0 (April 24, 2019) ■ Reserve Offset Program Manual (October 23, 2020) ■ CAR Verification Program Manual (February 8, 2017) ■ ISO 14064-3: 2006, Greenhouse Gases – Part 3: Specification with guidance for the validation and verification of GHG assertions
<i>Lead Verifier's Approval</i>	 Mark Lutz, 24 February 2021
<i>Technical Reviewer's Approval</i>	 Tina Sentner, 24 February 2021
<i>Date of Verification</i>	The Verification Statement is to be dated when the technical reviewer accepts the recommendation to issue the statement.

Appendix A: SCS Certification Mark

Congratulations on receiving a positive verification for New River Resource Landfill. Your project is now eligible to use the SCS Kingfisher Certification Mark B for Carbon Offset Project Verification, as represented on the cover page of this verification report. The SCS Kingfisher Certification Mark increases the recognition of your achievements with your verification carbon offset project.

Please refer to the *SCS Kingfisher Certification Mark Labeling and Language Guide: Mark B* provided to you by the GHG Verification Program staff for more information about your Mark and usage. Should you have any additional questions regarding your Mark, use, messaging, or other marketing opportunities, please contact the GHG Verification Team or SCS Marketing Staff at NRmarcom@scsglobalservices.com.