
Landfill Project Verification Report

Verification under the Climate Action Reserve (CAR)

Reporter/Member: Veolia ES Maple Hill Landfill, Inc

Project: Maple Hill Landfill (CAR#521)

Emissions Period Verified: December 13, 2008 to October 30, 2010

Scientific Certification Systems

Lead Verifier: Tina Sentner

Technical Reviewer: Mark Lutz

Site Visit Date: November 17, 2010

Report Date: 12-29-2010

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1 Summary

This report presents the findings of the verification assessment of the Maple Hill Landfill Project (CAR#521) developed by Veolia ES Maple Hill Landfill, Inc. This assessment covers the Maple Hill Landfill's greenhouse gas emission reductions reported to the Climate Action Reserve (the Reserve) for the verification period December 13, 2008 to October 30, 2010. The verification was undertaken to evaluate the Project for eligibility and assess whether the compiled data conforms to the Climate Action Reserve Landfill Project Protocol, Version 2.1 (October 2009).

The evaluation was undertaken using the following Climate Action Reserve criteria as well in accordance with the requirements of ISO 14064:2006, Part 3, *Greenhouse gases – Specification with guidance for the validation and verification of greenhouse gas assertions*

- Landfill Project Protocol, Version 2.1 (October 2009),
- Landfill Project Verification Protocol, Version 2.0 (November 2008)
- Landfill Project Protocol Version 2.1, ERRATA AND CLARIFICATIONS,
- Verification Program Manual (June 17, 2009),
- Program Manual (March 2010),

In the course of the verification assessment, the Scientific Certification Systems (SCS) verifiers developed findings which included New Information Requests (NIRs), Non-Conformity Reports (NCRs) and Opportunities for Improvement (OFIs). The findings All New Information Requests and Non-Conformity Reports have been adequately responded to, resulting in their closure.

On the basis of the information provided and the analyses completed, SCS was able to reach a decision on the emission reductions reported by Veolia ES Maple Hill Landfill, Inc. to the Climate Action Reserve. SCS verified the adequacy of the information provided in the Project Description and monitoring plan, confirming that this document meets the requirements of the Climate Action Reserve standards. Further, SCS was able to reach a positive opinion on the claimed emission reductions and removals presented in the Project Description Document and on the Reserve website by Veolia ES Maple Hill Landfill, Inc. Thus, SCS has verified 52,496 metric tonnes of CO₂e reductions and removals from the Maple Hill Landfill project for the verification period of December 13, 2008 to October 30, 2010.

2 Introduction

Scientific Certification Systems (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. SCS is currently accredited to ISO 14065 for GHG Validation and Verification by the American National Standards Institute (ANSI) and offers verification under the Voluntary Carbon Standard (VCS), the Climate Action Reserve (CAR), and The Climate Registry (TCR). SCS also offers verification services for the Chicago Climate Exchange (CCX) and the Climate, Community and Biodiversity (CCB) standards.

SCS was commissioned by Veolia ES Maple Hill Landfill, Inc. to undertake the periodic project verification of the Maple Hill Landfill. The project consists of the collection of landfill gas (LFG) from the Maple Hill Landfill located in Macon Missouri, and subsequent destruction through combustion in an open candlestick flare. This report covers the verification period of December 13, 2008 to October 30, 2010 as a project deliverable into the Climate Action Reserve.

2.1 Verification Objectives

The objective of the verification is:

- Evaluate conformance with the Landfill project as defined in the criteria stated below.
- Determine with a reasonable level of assurance whether the GHG 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.

2.2 Verification Scope and Criteria

The scope of the verification is defined as an independent and objective review of the project description document, the project's baseline study, monitoring plan and emissions reductions calculations. The information in these documents is reviewed against the following criteria:

- Landfill Project Protocol, Version 2.1 (October 2009),
- Landfill Project Verification Protocol, Version 2.0 (November 2008)
- Landfill Project Protocol Version 2.1, ERRATA AND CLARIFICATIONS,
- Verification Program Manual (June 17, 2009),
- Program Manual (March 2010),

2.3 Level of Assurance

The level of assurance applied to this verification assessment is Reasonable Assurance as required by the Climate Action Reserve.

2.4 Treatment of Materiality

In consideration of the required level of assurance, the needs of the intended user and the requirements of the Climate Action Reserve Program, SCS applied a materiality threshold of **5%**. The data reviewed was considered to meet the principles of accuracy, completeness, transparency and is free of material error or omission.

3 Verification Process

3.1 Verification Summary

The verification process consisted of the following:

1. **Project listed with the Climate Action Reserve:**

The Maple Hill Landfill project was listed on the California Climate Action Reserve (CAR) website. Veolia ES Maple Hill Landfill, Inc. selected SCS as their verification body.

2. **Conflict of Interest Review.**

A conflict of interest and notification of verification activities was submitted to CAR. The COI assessment was conducted to identify any potential conflict of 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 on November 2, 2010, prior to the commencement of verification activities.

3. **Introductory Meeting:**

A kick off meeting was conducted between the verification team and Element Markets, LLC. on November 8, 2010. Element Markets LLC is a designated agent/representative to the Maple Hill Landfill project on behalf of Veolia ES Maple Hill Landfill, Inc as confirmed in the Designated Authority Agreement dated October 22, 2009. 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 Project Description, monitoring plan, CAR submittals, and supporting documentation to assess initial conformance with the data requirements of the CAR Landfill Project Protocol. 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. The verification plan with an audit agenda was submitted prior to the site visit.

5. Site Visit

Following the desk review, the auditors conducted an on-site audit of the project area on November 17, 2010. The purpose of the site visit is 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.

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 and the Project Proponent to gather additional information for review and examination. This exchange includes Findings—New Information Requests (NIR), Non-Conformity Reports (NCR) and Opportunities for Improvement (OFI)—that were issued by SCS to the Project Proponent. The Project Proponent responded to all NIRs and NCRs and subsequently all issues were closed by SCS.

8. Final Report and Opinion

The last step in the verification process includes a final review of the submitted data, completion of the Verification Report, and drafting of the Verification Opinion. The draft report is presented to an internal SCS Technical Reviewer who determines the Verification Opinion to be justified given the evidence presented. Once completed, the Verification Report and Verification Opinion are presented to Veolia ES Maple Hill Landfill, Inc for approval and subsequent submittal to the Climate Action Reserve.

9. Exit meeting with client:

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

3.2 Verification Team

The verification was undertaken by Tina Sentner, Lead verifier and Todd Frank, verifier-in training of SCS. The Technical Review was performed by Mark Lutz of SCS.

4 CAR Landfill Project Requirements

SCS verified the Maple Hill Landfill against the requirements of the Climate Action Reserve Landfill Project Protocols. The following sections detail the most essential aspects of the verification of the Maple Hill Landfill project.

4.1 Project Description

The Maple Hill Landfill (herein referred to as the “Project”) collects landfill gas (LFG) from the Maple Hill Landfill and destroys it via combustion through an open candlestick flare. The Project is located

at the Maple Hill Landfill approximately 5 miles west of the city of Macon, Missouri. The landfill is an active solid waste sanitary landfill owned and operated by Veolia ES Maple Hill Landfill, Inc. a subsidiary of Veolia Environmental Services (ES) Solid Waste, Inc. (Veolia). The landfill began accepting wastes in 1976 and consists of approximately 130 acres. Final closure of the landfill is estimated to take place in 2080.

The Gas Collection and Conveyance System consist of wellheads that pull gas from twenty one (21) vertical wells, three (3) horizontal wells and four (4) leachate extraction points. The gas from the wellheads is routed via a main header line into the flare skid. The landfill gas is pulled by a blower and passes through various knockout vessels to remove moisture prior to passing through the flow meter in route to the candlestick flare.

4.2 Project Eligibility

There are three eligibility rules the project must meet in order to register reductions with the Climate Action Reserve.

Eligibility Rule 1: Location:

The Project is a US based landfill located five miles west of the town of Macon, Missouri, USA and therefore meets this eligibility requirement.

Eligibility Rule 2: Project Start Date:

As stated in the Landfill Gas Reporting Protocol, pre-existing projects must have a start date on or after January 1, 2001 and must be listed with the Reserve twelve months from the effective date of the protocol (LFG Reporting Protocol V. 2.1). The start date is defined as the date at which a qualifying destruction device becomes operational.

Veolia ES Maple Hill Landfill, Inc. listed the project on the Climate Action Reserve website on October 23, 2009. The project listing indicated the project proponent began installation of the landfill gas collection and conveyance system (GCCS) in mid 2002 and began flaring gas on September 16, 2002. Veolia ES Maple Hill Landfill, Inc. provided various documents to support the evidence of construction of the landfill gas project such as the Solid Waste Permit with the Gas Collection and Conveyance System installation application to Missouri Department of Natural Resources, the revised Title V Permit for the flare addition, the GCCS design drawings for the well construction, well field drilling logs for the first phase of well installation, initial chart recorder logs and a start up confirmation letter from Environmental Sampling Corporation for the installation of the flare skid. These documents confirmed the project start date of September 16, 2002. The Project further added additional wells in 2006 in Phase 4 of the landfill (REF. 11 Permits and REF. 09 LFGCCS and Flare).

Project Transfer to the Climate Action Reserve:

The Maple Hill Landfill was previously registered as a project with the Chicago Climate Exchange (CCX), but is now seeking registration under the Climate Action Reserve (CAR) for the verification period stated. The project was verified and issued emission reductions with CCX for vintage years

2003, 2004, 2005, 2006, and 2007. No further emission reductions credits will be claimed for the Maple Hill Landfill through CCX. SCS has verified no credits have been issued in CCX for the reporting period currently under verification for CAR. A Registry Project Transfer Attestation Form has been signed by Veolia ES Maple Hill Landfill, Inc. dated November 3, 2009 and submitted to the Climate Action Reserve. The project is claiming the remaining crediting period of years of 2008-2012 under the Climate Action Reserve (REF. 06 CAR Attestations and REF. 15 CCX Public Reports).

Eligibility 3: 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 three possible performance threshold scenarios. The Project was not previously collecting and destroying any landfill gas in a qualifying destruction device prior to the project start date. According to the site manager, there were no solar flares devices connected to the leachate riser system or previous qualifying destruction devices installed onsite. During the site visit, we did not observe evidence of a solar flare or pre-existing destruction devices or identify pre-existing destruction devices on historical project drawings. In addition, we reviewed the MSW Permit and subsequent modifications for the landfill Gas Conveyance and Collection Systems along with the Title V Permit application for Maple Hill Landfill and no evidence of a pre-existing destruction device was observed or required of the site (REF. 11 Permits). Therefore, the project proponent meets the performance standard threshold under option 1. "Installation of a landfill gas collection system and a new qualifying destruction device at an eligible landfill where landfill gas has never been collected and destroyed prior to the project start date."

Legal Requirements:

For the Legal Requirements 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.

A regulatory review of the Maple Hill Landfill was conducted by the project proponent. 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. SCS reviewed internal records generated by Veolia ES Maple Hill Landfill, Inc. as part of its project monitoring and interviewed the Senior Project Manager and Regional Engineer to determine, for the reporting period, whether the MDNR or any local government had recently modified their regulations to require LFG destruction. In particular, an inspection report from MDNR dated June 21, 2002 stating that the landfill is in compliance and that the GCCS system was under construction voluntarily was reviewed by the verification team. Veolia ES Maple Hill Landfill, Inc. has also developed a procedure

in the monitoring plan to ascertain and demonstrate that the project passes the legal requirements test at all times (REF. 12 Project Design Document).

In addition, Veolia ES Maple Hill Landfill, Inc. has conducted an NMOC Threshold review. Maple Hill Landfill is subject to NSPS regulation requiring the facility to conduct Non-Methane Organic Compound (NMOC) emission rate testing. The most recent Tier II NMOC Emission Rate Report for Maple Hill Landfill was conducted on April 13, 2009 with a result of 27.08 Mg/yr NMOC. The test results indicate that the Maple Hill Landfill is not expected to reach an NMOC level of 50 MG/year until 2030 (REF. 13 MHL Tier II - 2009 04 13).

4.3 CAR Attestation Forms

As the landfill owner and project developer, Veolia ES Maple Hill Landfill, Inc. signed the Climate Action Reserve's Attestation of Title form affirming that Veolia ES Maple Hill Landfill, Inc. has an exclusive ownership claim to the GHG reductions and removals achieved by the Maple Hill Landfill project. The Attestation was signed on November 1, 2010 by an eligible signatory to attest for the project. Ownership was further confirmed through review of various regulatory permits issued from Missouri Department of Natural Resources such as the Solid Waste and Title V Operating permits. Veolia ES Maple Hill Landfill, Inc. entered into an agreement with Element Markets, LLC to act as the sole agent for the registration, verification and administrative processing of the project's emission reductions. A Designation of Authority (DOA) form authorizing Element Markets as an Account Holder Agent for the Maple Hill project was verified on file with the Climate Action Reserve.

Veolia ES Maple Hill Landfill, Inc has also signed the Attestation of Regulatory Compliance, thereby affirming the project's compliance status throughout the project reporting period. During the site reconnaissance and desk review activities, SCS was able to confirm to a reasonable level of assurance that the Maple Hill Landfill project is in compliance with local, state and Federal regulations and had no material regulatory non-conformance events. SCS reviewed the regulatory review of the Maple Hill Landfill conducted by the project proponent, interviewed the Veolia Senior Project Manager, Veolia Regional Engineer and the Solid Waste section of MDNR regarding compliance issues and recent inspections for the landfill. The Attestation of Compliance was signed on November 1, 2010 by an eligible signatory to attest for the project. SCS concludes that there is no basis to question Veolia ES Maple Hill Landfill, Inc. attestation of regulatory compliance for the Maple Hill Landfill.

Finally, SCS has reviewed the Attestation of Voluntary Implementation, signed on November 1, 2010 by an eligible signatory to attest for the project. Veolia ES Maple Hill Landfill, Inc. has affirmed that the Maple Hill Landfill project was established and implemented voluntarily and continues to operate as such. SCS verification under section 4.2: Legal Requirements of this report provides further confirmation of Voluntary Implementation. All attestations can be found in REF. 06 CAR Attestations.

4.4 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.
- CO₂ from the oxidation of CH₄ by soil bacteria. As the landfill is not covered with a synthetic liner, the CAR Landfill Project Reporting Protocol 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:

- CH₄ from the combustion of Landfill gas in the flare.
- CO₂ from the combustion of fossil fuels used during operation and maintenance activities for the project activity.
- CO₂ resulting from the consumption of imported electricity.

The gases reviewed include [CO₂, CH₄]. All gases are converted to CO₂ equivalents.

4.5 Review of Project GHG Management Systems

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

The primary data gathered for the project is landfill gas flow, pressure, temperature and methane content of the landfill gas. A Thermal Instruments Model 62-9/9500 flow meter continuously monitors flow after the blower and a knockout prior to combustion in to the destruction device. The Thermal Instrument measurement device automatically adjusts to compensate for the temperature and pressure of the gas stream and is configured to measure “standard cubic feet” (scf) of flow at 60 deg F and 1 ATM, in-line with Protocol requirements. The position of the flow meter is adequate to ensure laminar flow. This meter was factory calibrated prior to installation on October 30, 2008 and again in January 21, 2010. The instrument was field checked by a third party for calibration accuracy on April 14, 2010, and September 30, 2010 to confirm that the flow meter is reading within a ± 5% margin of error. The instrument was quarterly cleaned and inspected in the field with the activities performed and as found/as left condition of the equipment documented. For the January, 2010 factory calibration event, a loaner Thermal Instrument flow meter was installed. The loaner flow meter was factory calibrated prior to installation on-site in December 2009. The calibration, inspection and cleaning results for this verification period indicate both instruments were reporting accurate data (REF. 05 Calibrations – Inspections).

Methane content is measured by multiple portable GEM 2000 Gas Analyzers during the verification period. Methane concentration measurements were recorded monthly starting at the beginning of 2008 and continued through the end of September 2009. Beginning in October 2009, methane concentration measurements were recorded weekly and continued to be recorded every week through the end of the verification period. Calibration is conducted weekly using a known set of calibration gases. The process for calibration of the gas analyzer meter was observed during the site visit. The calibration gas was visually verified to be current through December 2012. Data from the gas analyzer device is taken from the GEM internal memory and electronically downloaded into CSV files for recordkeeping. Review of Calibration procedures, calibration report logs and calibration certificates demonstrate consistency with the requirements of the Protocol and that the various methane analyzers were within the deviation tolerances of the Protocol and the manufacturer specifications (REF. 05 Calibrations – Inspections).

Temperature and hours of operation are continuously monitored via two thermocouples mounted within the shroud of the candlestick flare; one for the pilot and one for the flare temperature. The flare operations are monitored by an electronic system which will automatically alert three separate individuals via phone if the flare system goes down. It will automatically initiate a re-start of the system three times and if unsuccessful, the system will shutdown automatically eliminating flow to the flare if the flame is extinguished. A Sensophone SCADA 3000 data acquisition device continuously records gas flow and flare temperature every 15 minutes. There is a backup Partlow MC 5000 circle chart recorder should the SCADA 3000 malfunction. The flare system has shutdown and start-up procedures in the event that the flame temperature of the flare drops below 500° F. Maple Hill Landfill uses a third party to manage and aggregate received data from the SCADA into excel files.

Raw data from the Thermal Mass flow meter instrument and temperature thermocouples is continuously collected every 15 minutes automatically onsite by a data acquisition device called the Sensophone SCADA 3000. The Sensophone SCADA 3000 is accessed via a phone line by a third party consultant on behalf of the project proponent. The Sensophone SCADA 3000 records consist of landfill gas flow, corrected to standard temperature and pressure, temperature every 15 minutes. Monthly reports are generated from the third party consultant by exporting the data directly from the Sensophone SCADA 3000 and converting the data into Excel files. The raw data is sent to the project proponent, Veolia ES Maple Hill Landfill, Inc. and Element Markets, LLC for recordkeeping retention and emission reduction calculations. Data is generally stored indefinitely by both companies; 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 (REF. 10 Monitoring).

A project design document and monitoring plan have been created for the project. The contents of monitoring plan was thoroughly reviewed and observed to meet the requirements of the Landfill Gas 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 (REF. 12 Project Design Document).

5 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 Veolia ES Maple Hill Landfill, Inc quantified their net GHG reductions and removals. This assessment included a review of the baseline determination, review of 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 Project Design Document and the calculation spreadsheets were first reviewed for compliance with the Landfill Project Reporting Protocol. The main parameters of formula 5.2 were verified as follows

Total annual methane emissions destroyed by the project landfill gas collection and destruction system ($CH_4 Dest_{PR}$)

The amount of methane destroyed is calculated from the continuously metered landfill gas flow data. For the verification period, all data was electronically aggregated on intervals of 15 minutes and totaled on a daily basis for the purpose of the calculations of emissions reductions. 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
$PR_{CH_4 i,t}$	= the average methane fraction of the landfill gas in time interval t as measured

For the period of December 13 through 31, 2008, methane data was collected on a monthly basis and data was calculated on time interval t =monthly. For the verification period of October 4, 2009 to October 30, 2010, methane data was collected and aggregated on a weekly basis and therefore destruction data was calculated on time interval t =weekly. In general, incremental flare flow is first adjusted for low temperature flow by voiding the flow for any given 15 minute period when the flare temperature is below the threshold temperature of 500 deg F. The data is then aggregated into daily totals and forwarded to the VMHLF Emissions Reduction Spreadsheet. Daily flow is then calculated by summing the flare flow for each time interval (weekly or monthly). The incremental methane destroyed flow is then calculated based on average methane concentration (weekly or monthly) by the total of landfill gas with temperature and pressure taken into consideration. Total destroyed methane is carried forward into further calculations for the flare to determine emission reductions for the project (REF. 08 Emission Reduction Calculations).

Adjustment for landfill gas flow metering equipment for temperature and pressure

The project flow meters are not required to correct for the temperature and pressure of the landfill gas.

Default methane destruction efficiency for device (DE_i)

The value applied was 0.960 for Open flares, as prescribed by the protocol. The project developer has taken an approach of applying a 500 deg F temperature minimum to emission reduction calculations to ensure 96% destruction efficiency of the flare.

Factor for the oxidation of methane by soil bacteria (OX)

The project does not incorporate a synthetic liner in its cover system; therefore a 10% methane soil oxidation factor was applied to the baseline scenario.

Discount factor to account for uncertainties associated with the project monitoring equipment (DF)

As per the Landfill Protocol, a discount factor of 20% was applied to the quantity of methane collected and destroyed for the period December 13 through 31, 2008 and a discount factor of 10% was applied to the total quantity of methane collected and destroyed for the period of October 4, 2009 through October 30, 2010.

Adjustment to account for pre-project LFG destruction device ($PRE_{discount}$)

An adjustment to the project baseline was not necessary due to the installation of a pre-project destruction device.

Total annual indirect carbon dioxide emissions from the consumption of electricity from the grid (EL_{CO_2}) and total annual carbon dioxide emissions from the destruction of fossil fuel (FF_{CO_2})

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 result from propane used to assist the ignition of the flare. This activity data is taken from purchase invoices and estimates from propane used. The Emission Factors for electricity, propane and gasoline were verified and no material errors were found.

Missing Data Procedures

Missing Data calculation procedures were reviewed for consistency with the Landfill Gas Protocol requirements as part of this verification. Missing Data procedures were applied in one instance in this verification period.

6 Verification Results

The verification of Maple Hill Landfill focused on the accurate collection of data and quantification of emission reductions as implemented by Veolia ES Maple Hill Landfill, Inc. in accordance with the Landfill Project Protocol version 2.1. The raw data consisted of 39,264 data sets. A sample set of approximately 41% 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 (REF. 16 SCS work copies MHL Emission Reductions). The following provides a summary of the Emission Reduction results:

Emissions Verified	December 13 -31, 2008	January 1 to October 3, 2009	October 4 to December 31, 2009	January 1 to October 30, 2010
Baseline Emissions	2,336.45	0	12,846.53	37,477.47
Project Emissions	0.007	0	0.138	0.103
Project electricity	4.67	0	82.62	74.67
Total Emission Reductions	2,331	0	12,763	37,402

Note: there are no emission reduction credits claimed for the period of January 1, 2009 to October 3, 2009 as sufficient project monitoring records were not available to support emission reduction credits under the Climate Action Reserve.

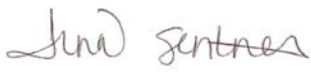
Throughout the verification process, SCS made several supplemental documentation requests in the form of New Information requests, Non Conformances and Opportunities for Improvements. These requests provided clarification regarding the project. The Findings from the verification of the Maple Hill Landfill are compiled in a “List of Findings” and available under separate cover. The List of Findings is only shared between the Project Proponent and verifier and is not publicly available.

7 Verification Opinion

Veolia ES Maple Hill Landfill, Inc has supplied a Project Design Document and all the evidence requested during the verification process to enable SCS to arrive at an opinion on the Maple Hill Landfill. The emission reductions generated from the capture and destruction of landfill gas methane has been compiled in a transparent manner, the data were found to be accurate within the uncertainty limits of the measurement equipment and emission reduction calculations were found to include all the required sources. SCS has determined that the Maple Hill Landfill, developed by Veolia ES Maple Hill Landfill, Inc, is in conformance with the CAR landfill Project Protocols. Furthermore, all issues identified during the verification were resolved in conformance with CAR standards. The Project Design Document and data are considered accurate, complete, transparent, and free of material misstatements. The Emission reduction CRT(s) are considered verified to a reasonable level of assurance.

8 Recommendation

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

Name and address	Veolia ES Maple Hill Landfill, Inc.
Scope of verification	Emission reductions arising from the capture and destruction of Landfill Gas Methane from : Maple Hill Landfill
Total GHG emissions verified	Dec. 13 to Dec. 31, 2008= 2,331 metric tonnes [CO₂e] Jan. 1 to October 3, 2009= 0 metric tonnes [CO₂e] Oct 4 to Dec. 31, 2009= 12,763 metric tonnes [CO₂e] Jan. 1 to Oct. 30, 2010= 37,402 metric tonnes [CO₂e]
GHG protocol(s) used for Verification	California Climate Action Registry Landfill Project and Verification Protocols v2.1 , Verification Program Manual (June 17, 2009)
Verification opinion with regard to data quality and materiality	The data are considered to be complete, transparent and free of material error or omission.
Applicable year	The emissions have been calculated from data collected during the period Dec 13, 2008 to October 30, 2010.
Date of verification	The Verification Statement is to be dated when the technical reviewer accepts the recommendation to issue the statement.
Dated and signed on behalf of the verification body by authorized signatory	 Tina Sentner; December 29, 2010
Dated and signed on behalf of the verification body Technical Reviewer	 Mark Lutz, January 10, 2011

References

NO	Type	Description	Notes
1		CAR_LFG_ElementMarkets_MapleHill_NOVA-COI_102810	
2		2009-COI-Determination-CAR521	
3		Kick off meeting Notes_Maple Hill Landfill Project 11-08-2010	
4		Maple Hill_CAR_LFG_Audit Plan-Verification_Ver.1_11-08-2010	
5		Calibrations - Inspections	
6		CAR Documents	
7		EM - Veolia Contract	
8		Emission Reductions Calculations	
9		LFGCCS and Flare	
10		Monitoring	
11		Permits	
12		Project Design Document	
13		Tier II Repor	
14		Response to Findings t	
15		CCX Public Reports	
16		SCS WorkCopies	
17			
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