



Verification Report for

EcoSecurities International Limited
Development Authority of the North Country
(DANC) Landfill Gas Destruction Project
Rodman, New York USA

CAR 398, Third Reporting Period
Climate Action Reserve

U.S. Landfill Project Protocol, Version 3.0

July 28, 2010

Report Prepared for

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Report Prepared by

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Summary

EcoSecurities International Limited (EcoSecurities) engaged NSF-International Strategic Registrations Ltd. (NSF-ISR or NSF) to verify its destruction of landfill gas (LFG) from a project defined in accordance with the requirements of the Climate Action Reserve U.S. Landfill Project Protocol, Version 3.0, December 2009. The project is comprised of a landfill gas collection and combustion system composed of three electric generators and two flares installed in March 2001 at the Development Authority of the North Country (DANC) Landfill Gas Destruction Project (herein referred to as the “Project”) in Rodman, New York. This is the third CAR verification report submitted for the project and covers the period of October 1, 2009 through April 30, 2010.

The project reduced emissions into the atmosphere by 91,209 metric tons CO₂-e.

Introduction

1.1 Objective

The objective of this verification audit was to determine, with reasonable assurance, that EcoSecurities had quantified, monitored, and fairly reported to the Climate Action Reserve its emission reductions from the destruction of landfill gas at DANC and determine that the Project conforms to the requirements of the verification criteria set in Section 1.3. of this report. This project is listed as CAR 398.

1.2 Scope

The scope of the engagement included verification of the quantification, monitoring and reporting of greenhouse gas emission reductions from the project at DANC landfill for the partial-year period October 1, 2009 through April 30, 2010. It also included verification of the calculated project emissions associated with combustion of fossil fuel in electric generating equipment and flares, and indirect emissions attributed to electricity consumption from project-related activities.

1.3 Criteria

NSF verified the reported project emission reductions against criteria in the Climate Action Reserve U.S. Landfill Project Protocol, Version 3.0 (The LF Protocol), including the Errata and Clarification to the Landfill Project Protocol, Version 3.0 (June 25, 2010), such errata not affecting the verification outcome. The verification methodology conformed to requirements in Climate Action Reserve Project Verification Manual (June 17, 2009), the Program Manual (March 16, 2010) and ISO 14064:2006 Part 3, *Greenhouse gases – Specification with guidance for the validation and verification of greenhouse gas assertions*.

1.4 Materiality

In accordance with the LF Protocol, emission reduction reports are considered fairly stated if they vary by no more than 5% from a complete statement of the project’s emission reductions.

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Thresholds of materiality defined by the LF Protocol allowed verifiers of emission reduction reports to consider as immaterial discrepancies of 5% or less. In addition, deviations from the LF Protocol procedures and use of specified equations and emission factors are considered material.

1.5 Level of Assurance

This verification engagement was performed at the reasonable level of assurance as required by the LF Protocol.

2.1 Team Appointment and COI Review

This verification was performed by John Shideler, NSF Lead Verifier, Mike DeBusschere, NSF Team Verifier, and reviewed by Janette Lutz, NSF Senior Internal Reviewer. Conflict of Interest inquiries were completed for NSF and for the verification team and a finding of low COI risk was confirmed by the Climate Action Reserve. Approval was received on April 21 (automatic e-mail notification from the Climate Action Reserve).

2.2 Document Review

The verification team conducted a document review to inform the planning process in advance of performing on-site verification activities. Documents reviewed included EcoSecurities' project documentation submitted to the Climate Action Reserve, such as the basis for emission reduction calculations, project design documentation, procedures, and reports, and regulatory information provided by EcoSecurities.

2.3 Planning

NSF's verification approach is risk-based. It draws upon our understanding of risks to fair statement of reported emissions and the operation of controls to reduce such risks. As a result of the document review and preliminary conversations with project management personnel at EcoSecurities and representatives of the DANC facility, a verification plan and a sampling plan were developed for this engagement.

2.4 Verification Activities

As a result of its planning process, NSF conducted two days of site visits at the DANC facility in Rodman, New York. These visits were conducted from April 27 through April 28, 2010.

Verification activities included:

- Confirmation of the project start date, eligibility, ownership of LFG reductions, and quantification of project emission reductions at the DANC landfill site with EcoSecurities and DANC personnel;
- Review of the control environment, information management systems and monitoring plans at offices and facilities operated by DANC and EcoSecurities;

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- Verification of the controls on the sourcing and traceability of LFG at the sampled collection point and the combustion facilities;
- Review of compliance to relevant environmental regulatory requirements at the DANC landfill facility. The primary focus of inquiry at the landfill facility was compliance with Clean Air Act requirements and solid waste handling and water discharge facility requirements of the New York Department of Environmental Compliance (NYDEC).
- Review of the system for monitoring flow and methane concentration of collected LFG and monitoring equipment calibration and operating performance at the DANC landfill.
- Verification that the Project's monitoring program and data management system addressed and recorded the LF Protocol required monitoring parameters for the reporting period to produce accurate, reliable and reproducible data and information. Recalculation was conducted for samples of each calculated variable or intermediary as presented in the Reporter's calculation spreadsheet.
- Verification that the Project's records management system contains procedures for acquisition and retention of all Protocol required information, including data substitution periods, and that such procedures have been implemented.
- Determination of EcoSecurities' conformity in all material respects with the requirements of the LF Protocol.

3. Verification Findings

3.1 Project Description

EcoSecurities has twice previously reported its emission reductions from the DANC Landfill Gas Destruction Project to the Climate Action Reserve (CAR). This verification report covers the third reporting period. The Project is listed in the Climate Action Reserve database as Project ID CAR 398. The project consists of destruction of LFG by collection using a well field system and subsequent combustion primarily in electric generators with excess LFG combusted in flares. The landfill began accepting waste in 1992 and the collection and combustion system began in late March 2001.

3.2 Eligibility and Title

Project Definition. The Project includes continuous destruction of eligible LFG at an on-site destruction facility composed of three electric generators and two flares. A fourth generator is planned. The project start date was March 28, 2001 as previously verified and reconfirmed by NSF in this verification, and the ten year crediting period extends to March 27, 2011. The landfill is located in Rodman, New York within the United States, and there was no previous LFG collection and destruction system in place prior to the project start date. The landfill is approximately 75 acres with 62 acres active.

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Project Developer and Ownership. EcoSecurities International Limited of Dublin, Ireland, is the Project Developer. NSF confirmed EcoSecurities' ownership of the Project's generated emission reduction credits by reviewing the emission reduction purchase agreement between DANC and EcoSecurities. This agreement demonstrates that EcoSecurities holds the legal title and exclusive ownership rights of the emission reductions associated with the project during the current verification period. Furthermore, the Attestation of Title signed and dated by EcoSecurities on June 18, 2010 appears free from defect and is on file with the Climate Action Reserve.

Qualifying Landfill Facility. The LFG in this reporting period was destroyed at a landfill which is exempt from 40 CFR 60. DANC's annual NMOC emissions for 2010 are projected to be 4.66 Mg/yr based on Tier 2 testing performed in 2006, and there are no requirements in its Title V Operating Permit which require the destruction of methane. NSF verified no LFG collection and combustion system was at the site prior to the project from historic aerial photography and review of flare and generator start up documentation by the manufacturers.

Single Application of Climate Reserve Tons. The Attestation of Title obligates EcoSecurities to report emission reductions from this reporting period, which is the subject of this verification report, to the Climate Action Reserve and to no other registry, and not to sell or transfer the project reductions other than by permitted transfers under the terms of its agreement with the Climate Action Reserve. NSF interviewed the project manager and coordinating officer for EcoSecurities. NSF believes on the basis of their statements that EcoSecurities has not sought to report their LFG emission reductions to any other registry.

3.3 Additionality

Legal Requirement Test. NSF reviewed the Attestation of Voluntary Implementation submitted by EcoSecurities. In addition, NSF reviewed internal records generated by EcoSecurities as part of its project monitoring and interviewed the General Manager of DANC (who sits in the New York Solid Waste Management Association Board of Directors) to determine, for the reporting period, whether the State of New York or any local government had recently modified their regulations to require LFG destruction. NSF found no evidence of modified regulations or requirements to collect and destroy LFG methane at DANC. Through review of regulatory information, along with the completed Attestation of Voluntary Implementation, NSF can confirm that the Project passes the Legal Requirement Test during this verification period.

Performance Standard Test. The Project passes the Performance Standard Test by destroying LFG originating from an eligible landfill, where LFG was not previously destroyed prior to the project start date, using new qualifying combustion devices. NSF verified this by reviewing combustion equipment design specifications and inspecting the combustion facilities during its site visit of April 27-28, 2010.

Regulatory Compliance. NSF reviewed the Attestation of Regulatory Compliance completed by EcoSecurities. In addition, NSF conducted a review of the regulatory compliance of the landfill facilities operated by DANC. NSF reviewed the DANC Title V Operating Permit and

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inspection reports of the New York Department of Environmental Compliance (NYDEC). The Project's monitoring manual contains procedures for maintaining and monitoring regulatory compliance. NSF confirmed that the procedures are being properly followed. DANC conducts regulatory compliance audits using a matrix by facility program area, which was reviewed by NSF for the reporting period. An inspection by NYDEC's regional office in November 2009 noted two non-material NOVs relating to litter and operation of oil storage tanks. Through its review, NSF confirmed that the Project was in material compliance with all applicable laws during the verification period.

3.4 Project Boundaries and Emission Sources

Sources, Sinks and Reservoirs. Methane produced by decaying organic waste in the DANC landfill is the only source of GHG emissions in the baseline. Project emissions include those from combustion of fossil fuels (diesel and propane) by flares and back-up electricity generator combustion, and indirect emissions from electricity consumption conservatively estimated as all landfill site electrical usage other than the truck scale house. LF Protocol destruction efficiencies were correctly applied to account for incomplete combustion of methane by flares and generators. Specific sources included the following:

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

- CH₄ vented to the atmosphere.

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

- CH₄ from the incomplete combustion of CH₄ in the flares calculated in reference to the flares' destruction efficiency.
- CH₄ from the incomplete combustion of CH₄ in the electrical generators calculated in reference to the generators' destruction efficiency.
- CO₂ from the combustion of fossil fuels used during operation and maintenance activities for collection and processing of landfill gas for the project activity.
- CO₂ resulting from the consumption of imported electricity used for collection and processing of landfill gas.
- The gases reviewed include CO₂ and CH₄. All gases have been converted to CO₂ equivalents.

3.5 Performance Against Project Protocol/Methodology

Monitoring and Operations Plan. In accordance with the LF Protocol requirements, EcoSecurities has established a monitoring and operations plan entitled "Monitoring Manual for the DANC Landfill Gas Destruction Project" dated April 2010. This document addresses flow and methane concentration monitoring, facility and data management system operations and reporting describes how relevant parameters required by the LF Protocol Figure 6.1 are to be collected and reported.

NSF also reviewed the capability of DANC to conduct their operations under a system of management controls and found the controls exhibited the appropriate amount of redundancy and

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conservativeness. Monitoring equipment calibrations, for instance, occur more frequently than LF Protocol requirements, and continuous QA/QC data checks for flow and methane concentration are conducted through a manufacturer-installed automated process control system.

Reserve LFG Tracking System. NSF verified that EcoSecurities had made entries in the Reserve LFG Tracking System as part of its verification, including appropriate Attestations of Title, Regulatory Compliance and Voluntary Implementation. A Corrective Action Request was raised regarding the forms not being filed in the Tracking System at the time of the on-site verification and was subsequently addressed by submittal of all required forms by EcoSecurities to the CAR.

LFG Composition and Quantity Analysis Requirements.

The generator equipment layout and related monitoring equipment were reviewed for compliance with the LF Protocol requirements. DANC operates three Veris Verabar V100 flow meters which characterize LFG flow from the well field and to the electric generators and flares. All three flow meters were verified by NSF as in-place according to the Project Monitoring Manual during the site visit of April 27-28, 2010. Prior to January 25, 2010, LFG could flow to the 6" flare, the 12" flare, the generator plant, or the 6" flare and generator plant simultaneously. However, simultaneous flaring and plant operation was problematic due to competing blower systems at the flare and the plant. On January 25, 2010, the 6" flare was relocated to a point downstream of the flow meter measuring flow to the generator plant. In the new configuration, LFG not required by the plant generators is allowed to flow from the power plant line (after the blowers) to the 6" flare. The location of all flow meters is sufficient to determine flow to each individual destruction device: 1) the gas analyzer is located upstream of the bifurcation of flows to individual devices; 2) the main flow meter is upstream of the generator plant; 3) the second and third flow meters are located prior to each of the two flares. All flow meters automatically standardize flow for temperature and pressure, and it was confirmed that no emission reductions resulting from the flare were reported in the event the flare sensors did not indicate flame presence (a temperature of at least 500F).

Total landfill gas flow sent to each flare and the three electric generators is monitored continuously by the three flow meters. Flow meters automatically report flow at a standard to 59 degrees Fahrenheit and 1 atmosphere. A System Control & Data Acquisition system (SCADA) compiles two-second data into a database for gas flow, methane fraction and flare temperature. DANC's site Environmental Coordinator exports data in approximately 11- minute intervals from the SCADA system to a data file on a monthly basis and sends the data to EcoSecurities via e-mail after quality checks have been performed. EcoSecurities aggregates received data into monthly flow totals, and methane fraction. All flow meters were inspected and calibrated on a quarterly basis by a third party during the reporting period and found to be operating properly. The last calibration for the reporting period was performed in March 2010, well within the required two-month window prior to the end of the reporting period. Methane content has been measured continuously using a Siemens Ultramat 23 in-line monitor since October 29, 2009. Prior to that, gas analyzers (Landtec GEM 500/2000) were used. During the verification process, NSF reviewed evidence to confirm that the methane measurement procedure includes daily zeroing event through auto calibration of the Siemens Ultramat 23, and a monthly internal calibration of the same gas analyzer against a reference gas of known concentration. The calibration gas was visually verified on-site by NSF to have been current.

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The Siemens Ultramat 23 was also calibrated by a third party on a quarterly basis, and the handheld gas analyzers (Landtec GEM500/2000) were factory calibrated on a semi-annual basis. Calibration procedures for the gas analyzers and review of the calibration reports demonstrate conservative consistency with the requirements of the CAR protocol and that all flow meters and the methane analyzer were well within the deviation tolerances of the protocol and the manufacturer.

Performance Standard Requirements.

The project was reviewed against the LF Protocol Section 3.4.1 and satisfies Case 1, installation of new landfill collection system and new qualifying destruction devices at a landfill where landfill gas had never been collected and destroyed prior to the project start date. Destruction devices used for this project are listed in the LF Protocol Appendix C as qualifying devices (lean-burn internal combustion engines and open flares), and the default destruction efficiencies have been correctly applied (a 96 percent destruction efficiency is assigned to the project's two open flares; a 93.6 percent destruction efficiency is assigned to the project's three generation engines) to calculate methane destruction for this reporting period. The Performance Standard Test has been passed.

Monitoring Parameters. NSF verified that the Project had carried out the monitoring required by the LF Protocol Version 3.0. The requirements were summarized in the "Monitoring Manual for the DANC Landfill Gas Destruction Project," as described above in an earlier paragraph.

3.6 Project Management System

Management System.

NSF verified the Project's management system during document review and during the on-site visit at DANC. NSF also interviewed DANC executive management in addition to the personnel with specific responsibility for implementing the emission reduction project during this reporting period. NSF found a strong control environment for the project, including information management, authorizations for key activities, management reviews, and recordkeeping. In particular, NSF reviewed for adequacy the following elements:

- Definition and maintenance of an appropriate control environment by the Development Authority of the North County (DANC) landfill management and personnel;
- Training and competence of landfill project managers and operating personnel, including contractors;
- Identification and management of legal requirements related to landfill operations;
- Identification and maintenance of records required by the landfill project;
- Landfill site and gas collection and combustion equipment specifications;
- Quantification methods and calculations of project emissions;
- Checking and corrective action mechanisms.

Project Documentation. NSF verified that the required documents for the project's third reporting period had been completed and submitted to the Reserve. These included the Project

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Submittal form, the signed Attestation of Title form, the signed Attestation of Regulatory Compliance form, and the signed Attestation of Voluntary Implementation form.

3.7 Calculation of GHG Emission Reductions

NSF independently calculated project emission reductions from information on the DANC LFG Workbook developed by EcoSecurities, including periods for data substitution using the EcoSecurities method. Project emission reductions were calculated per the formula defined in the Climate Action Reserve LF Protocol. The basic formula was

Landfill gas destroyed

- the portion of methane oxidized by soil bacteria. As the landfill is not covered with a synthetic liner, the LF Protocol assumption that 10% of the methane produced would be naturally oxidized by soil bacteria has been applied
 - carbon dioxide emissions from fossil fuel consumption
 - indirect carbon dioxide emissions from the use of electricity from the grid
 - discount factor to account for uncertainties associated with the project monitoring equipment. (a 10% monitoring discount factor was applied for the month of October 2009, accounting for discontinuous methane readings during that period)
- = Project Emission Reductions.

Gas flow was adjusted to standard temperature and pressure of 520R (60F) and 1atm as required by the LF Protocol. For data control and quality purposes, any measurements when flare temperature recorded below 500°F were excluded from emission reduction calculations. Additional quality checks were conducted to ensure emission reductions were only claimed within the operational range of the monitoring and destruction devices. EcoSecurities received a clarification from CAR dated March 30, 2010 concerning the flow and methane reading and calculation according to LPP Version 3.0. Under this clarification, CAR allowed EcoSecurities to calculate flow weighted averages for methane content to combustion devices, instead of the daily aggregation method described in the LF Protocol.

NSF verified the correct calculation of project emissions based upon evidence of fossil fuel consumption (propane as supplemental fuel for the flare and back-up heating, and diesel for back-up generators), and indirect CO₂ emissions from the supplemental use of electricity in the grid. NSF determined project emissions account for 0.07% of project reductions.

NSF found EcoSecurities' equations match the LF Protocol Version 3.0 equations exactly for all sources and sinks, as did calculations of substituted data values per Appendix E of the LF Protocol. As a result of NSF's verification process we conclude EcoSecurities' LF emission reductions are fairly quantified and without material error.

3.8 Corrective Action Requests/Recommendations

NSF issued corrective actions and requested clarifications during the verification process. All material and immaterial issues were resolved. Details on the corrective actions and

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clarifications requested are provided to the Project Developer and to CAR in the List of Findings, a private document.

3.9 Approved Variances or Deviations

EcoSecurities has not requested variance from the LF Protocol. A clarification was requested and received as discussed above in Section 3.7.

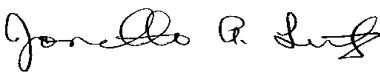
4. Verification Results

4.1 Verification Team Recommendation

Based on the verification activities described above, the verification team has concluded that the Development Authority of the North Country (DANC) Landfill Gas Destruction Project, in its third reporting period, has achieved the following emission reductions:

Reductions/Removals from October 1, 2009 – April 30 2010	Metric tons CO ₂ -e
Project baseline	91,274
- Project emissions	65
- Project adjustments (explain)	N/A
= Net project emission reductions/removals	91,209

4.2 Verification Audit Summary

Project Developer	EcoSecurities International Limited 40 Dawson St Dublin 2 Ireland
Project Location	Development Authority of the North Country 23400 NYS Route 177 Rodman, New York 13682
Project Type	Destruction of Landfill gas
Project Period	October 1, 2009 – April 30, 2010
Protocol/Methodology	Climate Action Reserve, US Landfill Project Protocol, v. 3.0
Emissions/Removals Verified	Vintage 2009: 38,718 metric tons CO ₂ -e Vintage 2010: 52,491 metric tons CO ₂ -e
Verification Conclusion	Based upon the verification activities described above, NSF has concluded with reasonable level of assurance that EcoSecurities' reported 2009 and 2010 vintage emission reductions of 91,209 metric tons CO ₂ -e reported to the Climate Action Reserve for the period October 1, 2009 through April 30, 2010, are, in all material respects, fairly stated.
Lead Verifier	 John C. Shideler, 1 August 2010
Internal Reviewer	 Janette Lutz, 1 August 2010
<i>This verification statement is valid when signed and dated by an NSF internal reviewer.</i>	