

# Verification Report for Sioux Falls Regional Sanitary Landfill (CAR 462)

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Project Owner: Sioux Falls Regional Sanitary Landfill

Project Developer: TerraPass, Inc.

Registry: Climate Action Reserve

Protocol: Landfill Gas Project (Version 3.0)

Reporting Period: January 1, 2011 through December 31, 2011

Report Date: December 10, 2012

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## **1. Introduction/Summary**

### **1.1 Objective and Introduction**

The purpose of the verification report is to provide a third-party evaluation of the greenhouse gas offset credits that were asserted by TerraPass, Inc. (TerraPass) for a landfill gas project located near Sioux Falls, SD. The reporting period for this verification is January 1, 2011 through December 31, 2011.

The project collects and destroys methane gas produced at a landfill. For this project, the gas is destroyed either at an onsite open flare or it is transported offsite to a 3<sup>rd</sup> party end user (ethanol plant).

### **1.2 Verification Scope**

The verification scope is an up-front specification that indicates the type of verification to be undertaken. Items covered include types of Greenhouse Gases (GHGs) and crediting years, GHG project and baseline scenarios, physical infrastructure, activities, technologies and processes of the GHG project, and GHG sources, sinks and reservoirs.

#### **1.2.1 Baseline Scenario**

The baseline scenario for this project is the venting of methane to the atmosphere as the waste material that was deposited in the landfill breaks down. Prior to the project activity, there were no gas collection or destruction devices utilized at this site.

#### **1.2.2 Physical Infrastructure**

Based on the documentation provided as well as the information obtained from the site audit, the following items make up the physical infrastructure of the system:

- Landfill gas collection system including gas collection wells. These well are also used for leachate collection.
- A gas upgrade system is used to clean and compress the landfill gas so that it can be delivered via pipeline to an ethanol plant where it is destroyed by a thermal oxidizer (enclosed flare).
- Open flare used to destroy the landfill gas and methane collected at the facility (backup flare).
- Monitoring equipment including methane gas concentration equipment, flow meters and temperature meters/thermocouples.
- Computers/data logging equipment (SCADA system) for collecting and storing monitoring data.

#### **1.2.3 Types of Greenhouse Gases**

Methane (CH<sub>4</sub>), and Carbon Dioxide (CO<sub>2</sub>) are the only greenhouse gases considered.

### **1.2.4 Reporting and Crediting Period**

The reporting period for this verification is January 1, 2011 through December 31, 2011. This reporting period falls entirely within the first 10-year crediting period in which the project is eligible to receive credits (CRTs).

### **1.2.5 Project Boundaries and GHG Sources, Sinks and Reservoirs**

Upon review of the documentation provided by the project developer and through the site audit conducted, the project encompasses the following project boundaries:

- a) Source (baseline and project) – waste breakdown in landfill.
- b) Source (project) – gas collection and destruction.
- c) Source (project) – Supplemental fuel and electricity use (mainly propane used to start flare and grid power utilized.)
- d) Sinks – none claimed.
- e) Reservoirs – none claimed.

These sources and sinks are appropriately included in this verification as compared to the requirements of the Protocol.

## **1.3 Verification Criteria**

The verification report follows the guidelines and protocols set forth by the Climate Action Reserve (CAR) Verification Program Manual (December 20, 2010) and CAR Program Manual (October 26, 2011) as well as the ISO 14064-3 Standard. The specific protocol used to verify this project is Version 3.0 of the U.S. Landfill Project Protocol (including the Errata and Clarifications dated August 16, 2012). An email dated March 4, 2010 from Climate Action Reserve staff was reviewed that defines the parties that can perform the 3<sup>rd</sup> party field check. This clarifying email was also used as part of the verification criteria for this project.

Due to the asserted number of CRTs generated from this project (greater than 100,000 tCO<sub>2</sub>e/year), the materiality threshold is set at 1%. This is in agreement with the guidelines established by the Climate Action Reserve.

## **1.4 Project Description**

The Sioux Falls Regional Sanitary County Landfill project is a gas collection and destruction project. Landfill gas is collected from gas extraction wells and is either destroyed at an onsite open flare or it is conditioned so that it can be transmitted via a pipeline to an offsite end-user. The project is monitored such that the gas flow rate is measured at both the flare skid and at the compressor equipment that is used to export the gas to the end user. The concentration of methane in the landfill gas is also measured continuously prior to being destroyed at the flare or exported to the offsite user. This data is collected and stored in a SCADA data logging system.

## 1.5 Level of Assurance

Based on the process and procedures conducted, this verification provides a reasonable but not absolute level of assurance that the GHG offset assertion is materially correct, is a proper representation of the GHG offset data and information, and is prepared in accordance with the Climate Action Reserve U.S. Landfill Protocol (Version 3.0).

## 2. Verification Methodology

### 2.1 Approach

Agri-Waste Technology, Inc. (AWT) follows a consistent methodology for all Climate Action Reserve's Landfill Project Protocol assignments.

- 1) Participant selects a verifier. V/V Director performs financial risk assessment and assigns Team Leader based on sector.
- 2) Team leader reviews preliminary documentation and any results of previous assessments (if applicable) from aggregator or project owner and discuss goals and constraints. As part of the initial review of the project documentation, the Team Leader completes the Initial Review Form that is reviewed by the internal peer reviewer.  
  
Team Leader assesses the controls for sources of potential errors, omissions and misrepresentations. As part of the assessment of controls, the Team Leader completes the Risk Assessment Form that is reviewed by the internal peer reviewer.
- 3) Team Leader prepares NOVA/COI form and submits to the COI Auditor for completion. COI Auditor determines if there are issues with COI and completes NOVA/COI form along with internal COI and impartiality documents. Team leader reviews these documents, obtains needed signatures and submits case-specific notification of verification activities and request for evaluation of Conflict of Interest (NOVA/COI Form) form to CAR at a minimum of 10 business days prior to beginning any verification services. Conflict of Interest documents are handled by the COI Auditor.
- 4) Team leader forms verification team as well as negotiates and executes subcontractor agreements (if applicable).
- 5) Team leader prepares sampling plan. Internal peer reviewer reviews sampling plan.
- 6) Team leader prepares the verification plan and submits to the client for signature upon review by internal peer reviewer.

- 7) Team leader negotiates and prepares the contract. Internal Peer Reviewer reviews contract. Team leader sends contract to client for signature.
- 8) Team leader completes project overview and submits to client for signature.
- 9) Team leader holds a kick-off meeting with participants.
- 10) Conduct verification activities in accordance with the AWT Management System Policy.
  - Identify emissions sources
  - Review methodologies and management systems
  - Review project documentation for completeness
  - Schedule and perform site visit/field audit (if required)
  - Complete desk audit and compile site visit information
  - Verify emission estimates
  - Amend Sampling Plan if any new risks or material concerns that could potentially lead to errors, omissions and misrepresentations are identified.
- 11) Team leader prepares list of findings, internal peer reviewer reviews list and team leader submits to client.
- 12) Team leader prepares the verification statement and verification report.
- 13) Internal Peer Reviewer reviews the verification statement and verification report and signs the verification statement.
- 14) Exit meeting is scheduled, so that the Team leader and participant can discuss the verification report and statement.
- 15) Team leader completes the verification activity log and uploads to CAR (if applicable).
- 16) Upon approval, team leader uploads the list of findings, verification report and verification statement to CAR.
- 17) CAR then completes the reporting process.
- 18) Recordkeeping--AWT will keep participants hard and electronic copies for a minimum of seven years as per AWT's MSP.

## 2.2 Potential Errors, Omissions and Misrepresentations

AWT assesses risks of potential errors, omissions or misrepresentations and reports relative magnitudes in this section. The risks are utilized to develop the sampling plan. The following Table shows the identified risk categories and the methods used to mitigate these risks.

Table 1: Risk Assessment Matrix

| <b>Risk Category</b> | <b>Identified Risk</b>                                                                             | <b>Verifier's Actions</b>                                                                                                                                |
|----------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Risk (>5%)      | Inaccurate representation of project components                                                    | Review documentation related to the equipment at the facility. Review the monitoring plan and the field audit of the facility.                           |
| High Risk (>5%)      | Site is not in material compliance with applicable laws, permits or regulations.                   | Review permit, compliance documentation and conduct interviews with key personnel.                                                                       |
| Medium Risk (1%-5%)  | Inappropriate use of default values                                                                | Review asserted calculations and compare them with protocol defined factors                                                                              |
| Medium Risk (1%-5%)  | Inappropriate aggregation of methane flow and/or concentration data.                               | Review asserted calculations versus raw data.                                                                                                            |
| Medium Risk (1%-5%)  | Incomplete or inappropriate data showing methane destruction.                                      | Review temperature data from the flare to ensure only time periods where appropriate temperatures are reached are counted toward the emission reduction. |
| Low Risk (<1%)       | Improper aggregation of project emissions based on fossil fuels consumed and electricity utilized. | Crosscheck and review actual records related to project emissions.                                                                                       |

A sampling plan was developed in order to ensure that all data used in the verification was appropriately checked for potential errors, omissions or misrepresentations. The following provides a summary of the pertinent items of the sampling plan as well as a description of how the plan was implemented during this verification.

1. Check of the Regulatory Compliance issues related to the facility. A complete check (100% of the data available) was made regarding the regulatory status of the facility. This review included the regulatory inspection reports, the facility's permits and other supporting documentation.
2. Check that the methane concentration data was appropriately applied to the calculation spreadsheets. This data is automatically collected from the meters and recorded in the data

- logging system. The data was reviewed for consistency and reasonableness. Data substitution techniques were checked to ensure they were appropriately applied.
3. Check that the flow data was appropriately applied to the calculation spreadsheets. This data is collected automatically from the meters and recorded in a data logger. The data was reviewed for consistency and reasonableness.
  4. Check that the data related to the temperature of the flare is appropriately used to show actual methane destruction. A complete check (100% of the data) was used to ensure only data that showed actual methane destruction was used to calculate the emission reductions.
  5. Check of the data related to the sale of the landfill gas to the offsite user. A complete check of this data was made to determine if the amounts used matched the records provided.
  6. Check that the project emission documentation matches values used in the calculation spreadsheet. A complete check (100% of the data) was used to verify the project emissions were appropriately calculated.

## **3 Verification Findings**

### **3.1 Project Description and Findings**

The Sioux Falls Regional Sanitary Landfill project is a gas collection and destruction project that collects methane gas produced by the landfill and either utilizes it as a fuel source for an offsite user or it is destroyed through the use of an onsite open flare.

The well field consists of gas extraction wells that are constructed both vertically and horizontally, a flare skid, a compressor system used to transmit the landfill gas to an offsite user and monitoring equipment. The monitoring equipment includes flow meters, methane analysis equipment, and temperature data from the flare that shows methane destruction.

Other than a two day initial operational testing period, there was no gas collection or destruction at this landfill prior to the project start date (April 7<sup>th</sup>, 2006).

The facility is managed by appropriately trained staff members. There are several training sessions required for the employees to ensure they are aware of the process management protocols as well as the data management protocols.

The landfill is operated so that no liquids are added, in a controlled manner, to the landfill other than the possibility of recirculated leachate. Therefore, the landfill is not operated as a bioreactor as defined by the U.S. Environmental Protection Agency.

The meters and data logging equipment were well maintained and had documentation available outlining the required calibrations, field checks, maintenance and cleanings.

The field check that is required within 2 months of the end of the verification period was performed by the landfill staff. An email from Climate Action Reserve staff was provided by TerraPass for review. This

emailed suggests that the landfill staff can perform the 3<sup>rd</sup> party field check in the last two months of the reporting period since TerraPass, and not the landfill, is the project developer. Based on this clarification, the project meets this field check requirement.

### 3.2 Site Audit

The site audit for this project occurred on June 21, 2012. The following individuals participated in the site audit:

|                                        |                                      |
|----------------------------------------|--------------------------------------|
| Hal Langenbach, Lead Verifier          | AWT, Inc.                            |
| Dustin Hansen, Landfill Gas Supervisor | City of Sioux Falls, SD Public Works |
| Dave McElroy, Landfill Superintendent  | City of Sioux Falls, SD Public Works |

After an opening introductory meeting, a short interview occurred that allowed the landfill management staff to describe their operations and procedures. This interview allowed for discussion regarding the specifics regarding the ownership of the GHG credits, eligibility of the project, the project start date, issues related to the Legal Requirement Test and the Regulatory Compliance Test, Project Monitoring, Data Management, Project Emissions and other related topics.

A complete tour of the facility occurred after the initial meeting. During this tour, the specific equipment and processes in operation were reviewed. This tour included an in depth review of the processes, staff, monitoring equipment and data management systems related to the emission reduction calculations.

During the interviews, it was disclosed that there were a few regulatory issues related to the project. Copies of letters and reports from the South Dakota Department of Environmental and Natural Resources were provided during the site audit and later reviewed during the desk audit. The conclusions drawn from the review of the documentation were that the violations were minor, non-recurrent and did not result from negligence or intent. Due to these reasons, it was verified that the issues were not material to the project.

Another issue that was also discussed in depth was the fact that the flare that was utilized in the reporting year of 2011 was no longer on site and was removed and replaced with a new model. The new project flare was installed on March 1, 2012. Specifics regarding the differences between the old flare and the newer one were discussed. Additional documentation, including photographs, of the flare and associated monitoring equipment were requested and provided during the site audit.

During the site audit, it was verified that flow rate and methane concentration data is automatically measured and recorded and there is no manual transcription of data. The evidence of methane destruction at the flare is also automatically recorded. Further information related to the monitoring equipment is included in Section 3.3.6 of this report.

After the site audit was complete, a closing meeting was held. This meeting allowed for a discussion that outlined the additional information that was needed to complete the verification.

### **3.3 Desk Audit**

A desk audit was performed to determine if the asserted emission reductions meet all eligibility requirements, contained no existing material non-conformances or misstatements in the reported data and that the project was conducted in accordance with all monitoring and record-keeping requirements.

Portions of the desk audit were performed both prior to, and after, the site audit. The desk audit focused on the 2011 Monitoring Plan and the associated data and documentation provided. Data used in the calculations for this project were sampled according to AWT's Sampling Plan developed for this project. The Sampling Plan was developed using a risk-based analysis of the project data systems and crosschecks.

#### **3.3.1 Eligibility**

This project is eligible under the Protocol because it meets all of the criteria for a project to be deemed eligible. The following points should be noted with respect to the project's eligibility:

- 1) The project is located near Sioux Falls, SD which is located within the United States.
- 2) The project start date is April 7, 2006. (See Section 3.3.2)
- 3) The project is additional (See Section 3.3.3)
- 4) The Project is materially compliant with all applicable laws and regulations (See Section 3.3.5).
- 5) The project is within its first 10-year crediting period since the start date for the project is April 7, 2006. (See Section 3.3.2)

#### **3.3.2 Start Date and Crediting Period**

The start date for the project is April 7, 2006. This date was documented in the 2011 Monitoring Plan and was verified during interviews during the site audit. Therefore, this project meets the start date and crediting period requirements of the Protocol.

#### **3.3.3 Additionality Assessment**

This project is additional according to the standards of the protocol because it meets or exceeds the Performance Standard Test and the Legal Requirement Test.

The Performance Standard Test is met because landfill gas is destroyed by an eligible destruction device where no previous gas collection or destruction occurred. Since the Performance Standard Test was evaluated and passed at the time the project was registered with the Reserve, further evaluation of this issue is not needed.

An evaluation of the facility was made in terms of federal (US EPA) regulations that could affect the eligibility of the project. The New Source Performance Standards (NSPS), the Emission Guidelines (EG) and the National Emission Standard for Hazardous Air Pollutants (NESHAP) were all considered in this evaluation.

The Sioux Falls landfill has a design capacity greater than the 2.5 million megagram threshold that triggers many of these federal regulations. However, Tier II testing reported by AquaTerra

Environmental Solutions, Inc. on September 4, 2008 showed a NMOC emission rate of 21.1 Mg/year. The report further provides a maximum 5-year (2008-2013) NMOC emission rate of 24.2Mg/year. This emission rate is well below the threshold (50.0 Mg/year) that requires gas collection and destruction by federal law. The next Tier II testing is required in 2013.

The Legal Requirement test is met because there are no laws, regulations or other requirements that require this facility to collect and destroy landfill gas. After a review of the project documentation provided by the Project Developer and a review of documentation that is publicly available (regulatory websites, etc.), there is a reasonable assurance that there are no laws, regulations or other stipulations that require this project activity.

### **3.3.4 Ownership of GHG Offset Credits**

Based on the documentation provided, the emission reduction credits and attributes are fully owned by TerraPass, Inc. The Attestation of Title and an Environmental Attestation and Bill of Sale between the City of Sioux Falls and TerraPass (November 26, 2012) was reviewed to verify the ownership of the emission reduction credits. This documentation showed that TerraPass owns all emission reductions associated with this project for this reporting period.

The agreement regarding the sale of the landfill gas to the offsite user was also reviewed. This agreement states that the carbon offset attributes are not owned by the buyer of the landfill gas (POET Ethanol Plant) but by the seller (The City of Sioux Falls, SD).

### **3.3.5 Regulatory Compliance**

The facility was maintained in regulatory compliance for the reporting period of January 1, 2011 through December 31, 2011. There were a few regulatory events that were closely reviewed as part of this verification. The verification team determined that these events were not material to the project since the issues were non-recurrent and were not the result of negligence or intent.

### **3.3.6 Monitoring**

There are several key parameters that are monitored for this project to ensure compliance with the Protocol. The following parameters were monitored during the verification period:

- 1) Continuous methane concentration data
- 2) Continuous gas flow measurement for flare
- 3) Continuous gas flow measurement for gas exported to an offsite user
- 4) Temperature of flare (proof of actual destruction)
- 5) Project emission data (electrical and fuel use)
- 6) Regulatory compliance information

The monitoring equipment that is used to quantify the emission reductions is as follows:

Veris Verabar V-100 – This equipment is used to monitor the gas flow rate to the offsite end-user.

FCI ST-98 – This equipment is used to monitor the gas flow to the onsite backup flare.

CAI 600 Series NDIR Gas Analyzer – This equipment is used for the continuous monitoring of the methane concentrations in the landfill gas prior to it being sent to the offsite user.

Pitot Tube – This equipment is used for performing field checks for the gas flow meters.

Landtec GEM 2000 Portable Gas Analyzer – This equipment is a portable gas analyzer that is used to perform quarterly checks of the CAI Analyzer’s calibration and in conjunction with a pitot tube to perform quarterly field checks of the flow meters. This equipment is also used for well field balancing purposes.

Elkins Earthworks ENV-100 Portable Gas Analyzer – This equipment is a portable gas analyzer that is used to perform quarterly checks of the CAI Analyzer’s calibration and in conjunction with a pitot tube to perform quarterly field checks of the flow meters. This equipment is also used for well field balancing purposes.

The meters and equipment used for monitoring the data needed for the emission reductions calculation received proper inspections, cleaning, field checks and calibrations. The following table displays the quality control schedule performed on these meters during the reporting period.

Table 2: Quality Control Measures for the Monitoring Equipment at the Sioux Falls Landfill

| <b>Equipment</b>                                           | <b>QA/QC – Cleaning &amp; Inspections – Field Checks</b>                                     | <b>Factory Calibrations</b>                                                             |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Veris Verabar (Flow) <sup>(1)</sup>                        | Cleaning and Inspection – Quarterly<br>Field Checks – Quarterly<br>Last field check 12/28/11 | Last calibrated on 2/12/10. No manufacturer requirement.                                |
| FCI ST-98 (Flow) <sup>(1)</sup>                            | Cleaning and Inspection – Quarterly<br>Field Checks – Quarterly<br>Last field check 12/13/11 | Last calibrated on 8/11/10.<br>Required every 18 months so reporting period is covered. |
| CAI Gas Analyzer <sup>(1)</sup><br>(Methane Concentration) | Cleaning and Inspection – Quarterly<br>Field Checks – Quarterly                              | Auto calibrates daily based. This is acceptable per manufacturer’s recommendations.     |
| GEM 2000 Portable Gas Analyzer <sup>(2)</sup>              | Data only used for field checks.                                                             | Last calibrated on 10/5/2011                                                            |
| Envision Portable Gas Analyzer <sup>(3)</sup>              | Data only used for field checks                                                              | Last calibrated on 7/7/11 and 10/20/11.                                                 |

(1) These flow meters and methane concentration meters were field checked within two months prior to the end of the reporting period per protocol requirements.

(2) The GEM 2000 portable gas analyzer requires a factory calibration/servicing every 12 months. However, this instrument is only used for field checks and no actual data collected from this unit is used in the emission reduction calculations. The latest calibration was prior to the field check and within 2 months of the end of the reporting period.

(3) The Envision portable gas analyzer recommends but does not require a factory calibration/servicing every 12 months. However, this instrument is only used for field checks and no actual data collected from this unit is used in the emission reduction calculations. The latest calibration was prior to the field check and within 2 months of the end of the reporting period.

### 3.3.7 Project Implementation and Management of Data

This system relies heavily on automation and automatic record keeping. The process data generated from this system can easily be exported to external computers via comma separated value (CSV) files. The monitored flow data and flare temperature data relies on automated data collection. The methane concentration data is collected on data sheets that were provided to the verification team for review.

All of the activities related to the data are handled by highly qualified individuals who have received both internal and external training on the requirements of managing the system. The project developer (TerraPass) is primarily responsible for the calculation of emission reduction credits. The individuals who have performed the calculations are also highly trained and qualified to perform these duties.

A Monitoring Plan was developed by TerraPass for this verification activity. This Monitoring Plan is sufficiently rigorous to ensure the proper data is maintained for the project to meet the requirements of the Protocol.

### 3.3.8 Calculations Review

A review of the asserted calculations was made to check for inconsistencies, errors or mistakes in the quantification of the emission reductions. The latest calculation asserted by the project developer was used in this evaluation ("A – Sioux Falls CRT Calculation 2011v2.xlsx"). The calculation reviews allowed for a reasonable level of assurance that there were no material errors in either the calculations or the data aggregations. Further discussion of this is included in Section 3.4 of this report.

### 3.3.9 Documentation Review

The following documents were reviewed during the verification process:

- A) Monitoring Report
- B) Attestation of Title
- C) Attestation of Voluntary Implementation
- D) Attestation of Regulatory Compliance
- E) System diagram/layout
- F) TerraPass Emission Reduction Calculation Tool (version 2)
- G) Raw data for 2011
- H) Weekly methane data sheets
- I) Electrical power use sheets and propane purchase documentation
- J) Inspection Logs
- K) Calibration certificates (flow meters and portable methane meter)
- L) Permits (operational and environmental)
- M) Environmental Agency Inspection Reports
- N) Agreement between Sioux Falls Regional Sanitary Landfill and the end user of the landfill gas.
- O) Variance Approval regarding Pre-Project destruction accounting
- P) Operating Manuals and Specifications for Meters (methane and flow)
- Q) Regulatory analysis information

- R) Documentation showing ownership of credits (Bill of Sale between Sioux Falls and TerraPass)
- S) Tier II Testing Reports
- T) Equipment literature
- U) System start date documentation
- V) QA/QC documentation

### 3.4 Accuracy of Asserted CRT Calculations

Emission reductions were asserted by TerraPass in their Monitoring Plan and calculation spreadsheets. These Emission Reduction calculations were checked by Agri-Waste Technology, Inc. to ensure they are free of material errors. The following checks were performed by Agri-Waste Technology, Inc. as part of the verification process:

- 1) A check of the data aggregation techniques for the flow meter readings, methane analysis and flare temperature data. Raw data was originally provided as CSV files showing gas flow rates, methane concentrations and flare temperatures as collected by the SCADA datalogger. The data was appropriately aggregated by the Project Developer. When data substitution was utilized, it was appropriately calculated per the CAR protocol.
- 2) The Emission Reduction Calculation Tool that was developed by TerraPass was reviewed and checked. This Emission Reduction Calculation Tool contained the following calculations:
  - a. Calculations showing the project emissions from grid electricity and fossil fuel use.
  - b. Calculations showing the results of the data aggregation from the landfill gas flows. The flow data was corrected to the Protocol specified temperatures and pressures as per the meter used. The flare meter records data in standard cubic feet to 70°F and 1 atm while the pipeline has a reference temperature of 59°F.
  - c. A calculation of the baseline emissions. This included a check to verify actual methane destruction based on flare temperatures being greater than 500°F.
  - d. The emission reduction calculation was checked (i.e. Baseline minus project emissions).
  - e. The constants used in the Calculation tool were checked and were consistent with the project Protocol. This included a check that the 10% oxidation factor was appropriately applied due to the soil cover of the landfill. The default destruction efficiency of the flare was also appropriately applied as 96% while the offsite user's destruction efficiency was 99.5% based on an enclosed flare (thermal oxidizer).
  - f. A check that proper data substitution techniques were used.

The asserted emission reductions and associated CRTs (by TerraPass) are equal to those calculated by the verification team.

Table 3: Emission Reductions Credited to the Project

| Vintage                                | Baseline Emissions<br>(MT CO <sub>2</sub> e) | Project Emissions<br>(MT CO <sub>2</sub> e) | Emission<br>Reductions<br>(MT CO <sub>2</sub> e or CRTs) |
|----------------------------------------|----------------------------------------------|---------------------------------------------|----------------------------------------------------------|
| January 1, 2011 –<br>December 31, 2011 | 217,275                                      | 2,807                                       | 214,469                                                  |

\*The values in this table may vary due to rounding. Standard rounding techniques were used in these calculations.

## 4 Verification Conclusion

Based on the information provided to AWT and through the verification activities performed,

- a) There are no existing material non-conformances or misstatements in the reported data.
- b) The project meets all eligibility requirements, and
- c) The project was conducted in accordance with all monitoring and recordkeeping requirements.



**Hal Langenbach**  
Lead Verifier Signature

12/10/12

**Date**



**Kevin Davidson**  
Senior Internal Reviewer Signature

12/10/12

**Date**