



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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May 22, 2009

Attn: Ron Mitchell
Sterling Planet, Inc.
3295 River Exchange Drive, Suite 300
Norcross, GA 30092

Re: 310 CMR 7.00 Appendix B(7)
Transmittal # X224065 and X224353
Approval of BWP AQ 27 and
AQ 28 Applications
Certification and Verification
of GHG Credits at Three Rivers Solid
Waste Authority Landfill in Jackson, SC

Dear Mr. Mitchell:

The Massachusetts Department of Environmental Protection hereby approves your Application for Certification of GHG (Greenhouse Gas) Credits (BWP AQ27), dated September 30, 2008. The Department also approves your Application for Verification of GHG Credits (BWP AQ 28), dated September 30, 2008. In accordance with the requirements of 310 CMR 7.00: Appendix B(7)(f), the Department conducted a 30-day public comment period on the proposed approval. The public comment period ended on May 15, 2009. No public comments were received during this public comment period.

The approval of your Application for Certification of GHG Credits (BWP AQ 27), combined with the final approval of your Application for Verification of GHG Credits (BWP AQ 28), creates 67,837 verified GHG Credits for emission reductions that occurred between June 7, 2007 and April 6, 2008 at Three Rivers Solid Waste Authority Landfill in Jackson, South Carolina. These credits have been deposited into MA GHG Credit account MAGHG-N-10010; the GHG Credit Account Representative for this account is Ron Mitchell. Verified GHG Credits from this project can only be used by affected facilities for compliance with the CO₂ emissions standards of 310 CMR 7.29.

Included as part of this approval of your applications for Certification and Verification of GHG Credits are the following:

- (1) A description of your project.
- (2) A table showing the number of GHG Credits for certification and verification.
- (3) A list of relevant determinations that the Department has made in accordance with the requirements of 310 CMR 7.00: Appendix B(7).
- (4) An explanation of how the number of GHG Credits for certification and verification was calculated.

Note that your applications are also incorporated, by reference, into this approval.

(1) Description of the Project

As described in the application,

The Project entails the voluntary destruction of a landfill methane at the Three Rivers Solid Waste Authority (TRSWA) landfill in Jackson, SC. Destruction occurred through active collection and flaring.

(2) Table showing the number of GHG Credits

	Time period	Number of Credits
Certified GHG Credits	June 7, 2007 through April 6, 2008	67,837
Verified GHG Credits	June 7, 2007 through April 6, 2008	67,837

(3) A list of relevant determinations that the Department has made in accordance with the requirements of 310 CMR 7.00: Appendix B(7). (Defined terms and language that is directly excerpted from regulations appear in italics.)

The Department has made the following determinations:

- The emission reductions are *Real*, in that there have been actual reductions in emissions of methane, a greenhouse gas, from the Three Rivers Solid Waste Authority Landfill in Jackson, South Carolina as a result of the project. Methane has been destroyed through combustion in a flare.
- The emission reductions are *Additional*, in that, according to the applicant, “the Project, and its associated reduction of GHG emissions, was not required by local, state or federal law or regulation, or as part of a local, state or federal permit, plan, or plan approval, agreement, administrative or judicial order, or as part of an enforcement action (including such laws, regulations, permits, plans, plan approvals, agreements, orders or actions taken to reduce other pollutants) at the time of submittal of a certification application, dated September 20, 2008.” The applicant attests that “the methane being flared was not required under New Source Performance Standards (NSPS).” The applicant also stated in supplemental application materials that, “The primary economic driver for installation and operation of the flaring system a year in advance of the NSPS requirement was the prospect of selling carbon credits.”

- The emission reductions are *Verifiable*, in that emission reductions have been calculated based on daily direct measurements of landfill gas flow and methane content. Samples were collected and analyzed for methane content daily.
- The emission reductions are *Permanent*, in that methane has been destroyed in the combustion process.
- The emission reductions are *Enforceable*, in that, pursuant to 310 CMR 7.00: Appendix B(7)(g)8., violations of the requirements of 310 CMR 7.00: Appendix B(7) may be enforced against any person who applied for certification or verification of GHG Credits, an affected facility that purchases GHG Credits created by this project, or any combination thereof.
- The project commenced *on or after January 1, 2006*, in accordance with 310 CMR 7.00: Appendix B(7)(d)9., in that the project commenced operation on June 7, 2007.
- The project is expected to *generate an annual average over the period applied for of 5,000 or more tons CO_{2e}*, in accordance with 310 CMR 7.00: Appendix B(7)(e)3., in that the project is expected to generate 67,837 tons of CO_{2e} emission reductions over a period of less than one year.
- The application includes *a proposed method for determining, monitoring and assuring compliance*, in accordance with 310 CMR 7.00: Appendix B(7)(e)4.b., in that data showing direct measurements of landfill gas flow and sampling of methane content have been included with the application.
- The applicant has specified *the best management practice used to determine an emissions baseline*, in accordance with 310 CMR 7.00: Appendix B(7)(e)4.d. in that supplemental application materials included the following explanation: “The installation and operation of a landfill gas handling and destruction system for the Project is not common practice for the period that our Application is seeking GHG Credits. Because LFG destruction was not a regulatory requirement nor was it a requirement to destroy the LFG twelve months prior to the energy project, the BMP scenario at the Three Rivers Solid Waste Authority Landfill would be to passively vent landfill gas to the atmosphere, thereby achieving zero greenhouse gas emission reductions.” Furthermore, the applicant has indicated that, “Since April 2008 the landfill gas is being sent to Kimberly-Clark to use as a boiler fuel for their industrial activities.” The landfill gas usage associated with the landfill gas to energy project at Kimberly-Clark is intended to meet the requirements of NSPS that became effective for this landfill on May 16, 2008. The applicant states in supplemental application materials, “Regarding the BMP question, a flare (either located at our site or at the Kimberly Clark site) would have been necessary (as a BMP) prior to commercialization and as an integral component of the landfill gas to energy project.” The Department has determined that Methane destruction that occurs from April 7, 2008, the first day landfill gas was sent to Kimberly-Clark, onward represents normal best management practice for this landfill and is therefore not eligible to create GHG Credits.
- The project does not present any potential project leakage.

(4) Explanation of how the number of GHG Credits for certification and verification was calculated

The number of GHG Credits was calculated using the following equation:

$$\text{GHG Credits} = N_{\text{baseline}} - N_{\text{project}}$$

Where N_{baseline} = the number of tons of CO_{2e} emitted without the project, calculated thus:

$$N_{\text{baseline}} = N_{\text{CH4}(\text{baseline})} \times 25 \times 0.90 \times 0.98$$

Where:

$N_{\text{CH4}(\text{baseline})}$ = the number of tons of methane determined to have entered the flare, as measured by flow and methane content meters, from June 7, 2007 through April 6, 2008, calculated thus:

25 = the global warming potential of methane, as published by the Intergovernmental Panel on Climate Change (IPCC) at the time of submittal of the certification application.

0.90 = factor representing the estimated fraction of the methane that would not have eventually oxidized to CO₂ without the project. Methane that would eventually have oxidized to CO₂ is not counted as methane emissions for the purpose of determining the project baseline, because it would have been destroyed anyway. This factor is also included in the landfill gas section of the Massachusetts CO₂ Budget Trading Program regulations.

0.98 = factor representing the estimated combustion efficiency of the methane destruction technology. Methane that passes through the flare without being destroyed is not counted toward the project baseline, because the project will have no effect on these emissions. This factor is also included in the landfill gas section of the Massachusetts CO₂ Budget Trading Program regulations.

And,

N_{project} = the number of tons of CO_{2e} emitted with the project, calculated thus:

$$N_{\text{project}} = N_{\text{CO2}(\text{project})} + 162$$

$N_{\text{CO2}(\text{project})}$ = the number of tons of carbon dioxide created through the combustion of methane, calculated thus:

$$N_{\text{CO2}(\text{project})} = N_{\text{CH4}(\text{baseline})} \times 0.90 \times 0.98 \times 2.75$$

Where:

0.90 = factor representing the estimated fraction of the methane that would not have eventually oxidized to CO₂ without the project, as described above.

0.98 = factor representing the estimated combustion efficiency of the methane destruction technology, as described above.

2.75 = the number of tons of carbon dioxide created for each ton of methane that is combusted. 2.75 is the ratio of the molecular mass of carbon dioxide to the molecular mass of methane.

162 = tons of CO₂e emitted due to construction and operation related project activities, as estimated by the applicant.

Data and calculations for this application are summarized in the following table:

	Certification (AQ27)	Verification (AQ28)
N _{CH4(baseline)}	3,465	3,465
N _{CO2(project)}	8,404	8,404
N _{baseline}	76,403	76,403
N _{project}	8,566	8,566
GHG Credits	67,837	67,837

Should you have any questions concerning this APPROVAL, please contact Stacy DeGabriele at stacy.h.degabriele@state.ma.us or (617) 292-5864.

Very truly yours,

Nancy L. Seidman
Deputy Assistant Commissioner
Climate Strategies
Bureau of Waste Prevention

cc: William Lamkin, DEP, BWP, NERO
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