



VCS VERIFICATION / CERTIFICATION REPORT

VERIFICATION OF METHANE CAPTURE, FLARE
AND UTILIZATION AT TYSON WASTEWATER
TREATMENT FACILITIES PROJECT

MONITORING AND REPORTING PERIOD:

January 1, 2010 to October 31, 2010

REPORT No. 2010-9483
REVISION No.01



VCS VERIFICATION / CERTIFICATION REPORT

Name of Verification company:	Date of the issue:
Det Norske Veritas (U.S.A), Inc.	27 December 2010
Report Title:	Approved by:
VCS Verification / Certification Report: Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities	Barbara Toole O'Neil Principal Consultant
Client:	Project Title:
Blue Source	VER Monitoring Report: Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities
Summary:	
Det Norske Veritas (U.S.A), Inc (DNV) has been engaged by Blue Source to verify the greenhouse gas (GHG) emission reductions reported for the “Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” for the period from January 1, 2010 to October 31, 2010 amounting to 221 517 t CO₂e. In our opinion, the GHG emission reductions stated in the Monitoring Report, of December 22, 2010 /3/, for the “Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” for the period from January 1, 2010 to October 31, 2010 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology ACM0014, version 1/6/, and the monitoring plan contained in the project’s VCS Project Description (VCS PD)/1/. Hence, Det Norske Veritas (U.S.A), Inc is able to certify that the reported emission reductions from the project during the period from January 1, 2010 to October 31, 2010 amount to 221 517 tCO₂e. DNV does not assume any responsibility towards the issuance and utilization of the VCUs hereby verified and certified. Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration. The verification of reported emission reductions is based on the information made available to us and the engagement conditions detailed in this report. DNV can not guarantee the accuracy or correctness of this information. Hence, DNV cannot be held liable by any party for decisions made or not made based on this report.	
Work carried out by:	Number of pages:
Shruthi Poonacha (Project Manager/ Verifier) John Warmerdam (Technical reviewer)	21



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ABBREVIATIONS

ANSI	American National Standards Institute
CAR	Corrective action request
CH ₄	Methane
CL	Clarification request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNV	Det Norske Veritas
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
N ₂ O	Nitrous oxide
NGO	Non-governmental Organization
PD	Project Description
IL	Illinois
NE	Nebraska
IA	Iowa
TX	Texas



1. INTRODUCTION

Det Norske Veritas (U.S.A), Inc (DNV) has been contracted by Blue Source to perform a verification and certification of emission reductions reported for the “Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” project (the Project) for the period from January 1, 2010 to October 31, 2010. The verification of emission reductions was carried out as per Voluntary Carbon Standard (VCS) 2007.1/12/. This report contains the findings from this verification and a certification statement for the certified emission reductions.

This is the fourth verification conducted by DNV for this project activity. The validation and first verification (monitoring period January 1, 2004 to December 31, 2008) was conducted in the period of 2008 and 2009. DNV submitted the final validation and verification report and certification statement to Blue Source in March 2009. The second verification for the monitoring period of (January 1, 2009 to September 30, 2009) was conducted in December 2009. Third verification for the monitoring period of (October 1, 2009 to December 31, 2009) was conducted in February 2010. The final verification report for the third verification period was issued on February 25, 2010

The verification team for the fourth periodic verification consisted of the following personnel:

Shruthi Poonacha	Det Norske Veritas (U.S.A), Inc	Project Manager/Verifier
John Warmerdam	Det Norske Veritas (U.S.A), Inc	Technical Reviewer

1.1 Objective

Det Norske Veritas (U.S.A), Inc (DNV) has been engaged by Blue Source to verify and certify the greenhouse gas (GHG) emission reductions reported for the “Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” projects in Joslin (Illinois), Amarillo, (Texas), Storm Lake (Iowa) and Lexington (Nebraska) for the period January 1, 2010 to October 31, 2010 amounting to 221 517 tCO₂e.

Verification of emission reductions from a project activity is the independent review and *ex-post* determination by a Verification Entity or Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the implementation of the project activity during the defined verification period.

According to VCS, verification also includes an independent third party assessment of the project design. In particular, the project baseline, monitoring plan and the project compliance with relevant applicable protocols and criteria (i.e. ANSI, VCS, host Party and others) are to be validated in order to confirm that the project design, as documented, is sound and reasonable and meets the applicable criteria. This seems as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of voluntary emission reductions.



Certification is the written assurance by a Certification Entity that, during a specific period in time, a project activity achieved the emission reductions as verified. According to the Verification Protocol and criteria of the Voluntary Carbon Standard, the Certification Entity is defined as an entity which has been accredited as a DOE by (American National Standards Institute) ANSI for the particular scope into which the project falls or has been accredited as an approved Certification Entity by the VCS Steering Committee. DNV is an accredited DOE for the particular scope into which the project falls.

1.2 Scope and Criteria

The verification scope includes:

- Verifying that the procedures and monitoring systems are in agreement with the monitoring systems and procedures described in the monitoring plan,
- Verifying that the reported GHG emission data is sufficiently supported by evidence, i.e. monitoring records
- Evaluating the GHG emission reduction data and express a conclusion with a reasonable level of assurance whether the reported GHG emission reduction data is free from material misstatement,

The verification shall ensure that reported emission reductions are complete and accurate in order to be certified.

1.3 VCS project Description

The Project was developed by Tyson at meat processing facilities within the midwestern United States. There are four such sites located in Joslin, IL, Amarillo, TX, Storm Lake, IA, and Lexington, NE (hereafter sites will be referred to by city name only) with adjoining waste water treatment facilities. All locations contain storage lagoons for the primary treatment of wastewater through the anaerobic decomposition process.

Project implementation at the sites has taken the form of two phases; phase 1 (December, 2000-April, 2001) was the covering of the lagoons and capturing of the biogas for flaring purposes, phase 2 (March, 2004 – October, 2005) was the capturing of the biogas and transporting this to the adjacent Tyson processing facility for use in the boiler, which results in the displacement of pipeline natural gas. Phases 1 and 2 have been implemented at three sites with the lone exception of Storm Lake, where only gas flaring has been implemented./1/

3. METHODOLOGY

Site visits were conducted on December 14th, 2010 at Lexington, NE. In addition to the physical inspection of the anaerobic lagoons, gas capturing and flaring equipment, proper functioning of the equipments were also verified. The verification of the emission reductions assessed all factors and issues that constitute the basis for emission reductions from the project. The records



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and background documentation for Joslin, IL, Lexington, NE, Amarillo, TX and Storm Lake, IA were verified during desk review.

Duration of verification

Preparations:	December 6 – 10, 2010
On-site verification:	December 13 -14, 2010
Reporting:	December 20, 2010

Findings established during the verification may include a corrective action request (CAR), a clarification request (CL), or a forward action request (FAR). A CAR is issued where:

- Non-conformities with the monitoring plan or methodology are found, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A CL shall be raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met. A FAR is issued for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

3. VERIFICATION FINDINGS

3.1 Remaining issues, including any material discrepancy, from previous validation

The FARs issued in the third verification is contained in the verification report dated February 25, 2010. The resolution of the FARs identified in the third verification, are listed below:

Forward Action Requests

FAR 1	The BOD at effluent is estimated using the influent flow rate. This is done based on the assumption that the influent and effluent flow rates are the same. The effluent flow meter reading is being monitored and moving forward these values should be used for estimation of BOD at effluent.	DNV verified the BOD5 effluent and influent raw data against the values used for calculation for all the facilities to confirm that the correct values were used. FAR 1 is closed.
FAR 2	A leakage occurrence is reported in a word document at the Storm Lake facility. DNV was unable to back track this to the daily log sheet that documents	DNV verified the log records to confirm that any tear in the cover is



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	surveys conducted to identify leaks. The Storm Lake facility does not document a tear in the cover of the anaerobic digester if it is repaired the same day. Moving forward any tear, regardless of duration of tear, should be documented in the daily log.	recorded, even if repaired that same day. FAR 2 is closed.
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The CARs and CLs raised as part of this verification are listed in Table 1 below.

Table 1: List of Corrective Actions and Clarifications

Follow up Action	Response	Comment
CAR 1 Lexington: No calibration conducted on the waste water influent flow meter	Calibration was conducted by Flow control on 17 December 2010	The accuracy of the meter was within 5% accuracy. CAR 1 closed
CAR 2 Lexington: DNV verified the source data against the data in the calculation worksheet. DNV identified that the meters reading for the weeks of 10 April and 17 April was not correctly transferred into the calculation worksheet and have to be revised.	The values for the week of 10 April and 17 April have been revised.	DNV has reviewed the revised calculation worksheet and Monitoring Report. CAR 2 is closed
CL 1 Lexington and Joslin: GTI Lab Certificate needs to be submitted	The lab certificate issued by the American Association for Laboratory Accreditation has been submitted to DNV	DNV has verified the Lab certificate. The certificate is valid until January 2012. CL 1 is closed.
CL 2 Lexington and Joslin: Lab certificate for Platt environmental needs to be submitted	Platt Environmental subcontracts the Lab work to Gti.	DNV has received the Gti lab certificate. CL 2 is closed

The FAR issued in this verification is given below:

FAR 1: DNV identified that the influent wastewater flow is consistently lower than the effluent wastewater flow in all four facilities. The PD needs to review the monitoring of influent and effluent flow to identify the reason for this disparity.



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Higher wastewater effluent flow results in higher effluent BOD₅, which has a conservative effect of the emission reductions.

3.2 Project Implementation

Table 2: Project Implementation Dates by Site

Location	Stage 1 – Flaring Effective Date	Stage 2 – Biogas Utilization Effective Date
Joslin, IL	06/2001	03/2004
Lexington, NE	05/2001	12/2004
Amarillo, TX	04/2001	10/2005
Storm Lake, IA	12/2000	N/A

3.3 Completeness of Monitoring

The monitoring plan in the VCS PD “Emission Reduction Protocol for Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities”/1/ was correctly applied. The parameters monitored during the period of January 1, 2010 to October 31, 2010 are listed below:

Table 3: Amarillo Monitoring

Parameter	Method of estimation	Sampling Frequency and Technique	Reporting Unit	Calibration Frequency
Wastewater influent flow into anaerobic lagoon /30/	flow meter	continuous	Mgal/d	Annual /46/
BOD concentration at inlet to the anaerobic lagoon /30/	BOD ₅ test	15 minute grab. Composited for 24 hours ;7 day/week	mg/l	Lab Certification /18/
Wastewater effluent flow out of anaerobic lagoon /30/	flow meter	continuous	Mgal/d	Annual /38
BOD concentration at outlet of anaerobic lagoon /30/	BOD ₅ test	2/week grab sample	mg/l	Lab Certification
Biogas CH ₄ content /30/	Daniel BTU Chromatograph	continuous	volumetric fraction	Quarterly
Biogas flow rate to flare /30/	flow rate	daily	ft ³ /min	Quarterly /36//37/
Biogas flow rate to boiler /30/	flow rate	daily	ft ³ /min	Quarterly /36//37/



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Propane consumption /24/	Receipts	Monthly	Gallons	NA
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Table 4: Joslin Monitoring

Parameter	Method of estimation	Sampling Frequency and Technique	Reporting Unit	Calibration Frequency
Wastewater influent flow into anaerobic lagoon /39	flow meter	continuous	Mgal/d	Annual /40/
BOD concentration at inlet to the anaerobic lagoon /39	BOD5 test	30 minute grab. Composited for 24 hours ;7 day/week	mg/l	Lab Certification /45/
Wastewater effluent flow out of anaerobic lagoon /39	flow meter	continuous	Mgal/d	Annual /40/
BOD concentration at outlet of anaerobic lagoon /39	BOD5 test	2/week grab.	Mg/l	Lab Certification /45/
Biogas CH ₄ content /19//20/	third party analysis	quarterly	volumetric fraction	Lab Certification /45/
Biogas flow rate to flare /41	flow meter	continuous	ft ³ /min	Quarterly /20//21/
Biogas flow rate to boiler /41	flow meter	continuous	ft ³ /min	Quarterly /20/21
Propane consumption /25/	Receipts	Monthly	Gallons	NA

Table 5: Storm Lake Monitoring

Parameter	Method of estimation	Sampling Frequency and Technique	Reporting Unit	Calibration Frequency
Wastewater influent flow into anaerobic lagoon /30	flow meter	continuous	Mgal/d	Annual /21/
BOD concentration at inlet to the anaerobic lagoon /30	BOD5 test	15 minute grab . composited for 24 hours ;7 day/week	mg/l	Lab Certification /45/
Wastewater effluent flow out of anaerobic lagoon /30	flow meter	continuous	Mgal/d	Annual /21/
BOD concentration at outlet of anaerobic lagoon /30	BOD5 test	3/week grab	mg/l	Lab Certification /45/



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Biogas CH ₄ content /43/	third party analysis	quarterly	volumetric fraction	Lab Certification /45/
Biogas flow rate to flare /30	flow meter	continuous	ft ³ /min	Quarterly /42/

Table 6: Lexington Monitoring

Parameter	Method of estimation	Sampling Frequency and Technique	Reporting Unit	Calibration Frequency
Wastewater influent flow into anaerobic lagoon /32/	flow meter	continuous	Mgal/d	Annual /44/
BOD concentration at inlet to the anaerobic lagoon /30/	BOD5 test	15 minute grab. Composited for 24 hours ; during production days	mg/l	Lab Certification/45/
Wastewater effluent flow out of anaerobic lagoon /32/	flow meter – Dynasonic 902	continuous	Mgal/d	Annual /44/
BOD concentration at outlet of anaerobic lagoon /31/	BOD5 test	2-3 day/week grab	mg/l	Lab Certification/45
Biogas CH ₄ content /22/	third party analysis	quarterly	volumetric fraction	Lab Certification/45/
Biogas flow rate to flare /33/	flow meter – Eldrige	continuous	ft ³ /min	Quarterly/29/
Biogas flow rate to boiler /33/	flow meter – GE Panometrics	continuous	ft ³ /min	Quarterly/45/
Temperature	Stack temperature sensor	Continuous	°F	Quarterly/27/
Leakage	Visual check of cover	Daily	Number of hours tear was open	NA



3.4 Accuracy of Emission Reduction Calculations

The project uses the approved CDM methodologies and tools for emission reduction calculations,

- “Avoided methane emissions from wastewater treatment” ACM0014 (Version 1) /6/,
- “Tool to determine project emissions from flaring gases containing methane”/7/,
- “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” (Version 01)/8/,
- “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (Version 01) /9/and
- “Tool to calculate the emission factor for an electricity system”/10/.

Appropriate IPCC default values were used for the global warming potential and density of methane. Project monitoring data for biogas collected and destroyed by the project, flare efficiency and methane fraction, and parameters of measuring BOD concentrations are used to calculate the amount of methane destroyed by the project activity.

Electricity data and the carbon emission factor from ACM0014 /6/ were used to determine the project emissions from the amount of electricity consumed for the project activity. Estimation for total electricity consumption is based upon the maximum load usage by model type for gas handling equipment as well as a 7.2% transmission and distribution loss associated with the US electricity grid /1/.

For a complete list of default and constant values used for emission reduction estimates, see table 6 below.

Table 7: Default and Constant Values for Emission Reduction Estimates

Parameter	Value	Source
EF _{GRID}	1.3 tCO ₂ /MWh	ACM0014, version 1
Transmission and Distribution Loss	7.20%	U.S. Climate Change Technology Program
B _O	0.21 lbsCH ₄ /lbsCOD	IPCC
f _{COD,aer}	92.7 mtCOD/ha month	ACM0014, version 1
EF _{CO2FF,Boiler}	0.05278 mtCO ₂ /MMBtu	IPCC
NCV _{CH4}	922.45 Btu/ft ³	IPCC
η _{Boiler}	100%	Value developed by project developer
COD/BOD	2.4 lbs COD/ lbs BOD	IPCC

W_S	231 mg/L	On-Site measurements
R_S	1.3333 lbs COD /lbs Sulfate	Engineering design factors for sulfide to sulfate conversion
n_L	5	Conservative value
$EF_{Propane}$	0.00574 mtCO ₂ e/gallon	U.S. EPA
$WC_{Propane}$	17.20 kg C/ MMBtu	U.S. EPA
$EC_{Propane}$	3.824 MMBtu/ barrel	U.S. EPA
fv_{CH4}	%	
Amarillo, TX	81.91%	Continuous Monitoring
Joslin, IL	75.00%	Quarterly samples by third party for gas chromatographic analysis
Lexington, NE	76.68%	Quarterly samples by third party for gas chromatographic analysis
Storm Lake, IA	73.00%	Quarterly samples by third party for gas chromatographic analysis
n_{Flare}	%	
Amarillo, TX	98.0%	State air permit
Joslin, IL	96.3%	State air permit
Lexington, NE	98.0%	State air permit /35/
Storm Lake, IA	98.0%	State air permit

3.5 Quality of Evidence to Determine Emission Reductions

All necessary documentation is collected, referenced and aggregated and is easily accessible in hard-copy or electronic format. A sample set of data for the months of January and October 2010 were verified for all four sites: Amarillo, Joslin, Lexington, and Storm Lake. The following data and documents were verified to confirm the emission reduction during the period of January 1, 2010 to October 31, 2010.

Calibration Records for all flow meter for all sites were verified. Lab Certificates for external laboratories were verified to establish accuracy of the BOD concentration in influent and effluent.

**Table 8: Quality of Evidence**

Parameter	Evidence Supplied
BOD Concentration of Influent	Weekly Reports and Lab result print outs
BOD Concentration of Effluent	Weekly Reports and Lab result print outs
Biogas flow rate	Daily reports with average scf/hour
Monitoring equipment maintenance	Third Party Calibration Certificates
Effluent rate at inlet and outlet	Flow meter readings – central data system.
CH ₄ content in Biogas	Record of third party analysis for all sites except Amarillo. Amarillo – Daniel Gas Chromatography data sheet

3.6 Management and Operational System

For all sites in the project, the general reporting procedures involve the collection of data on site, where it is then transferred once a month to a central Tyson location for archiving. The Project Developer, Blue Source, is supplied with weekly totals/averages for all data.

BOD Sampling:

BOD sampling responsibilities are delegated to state certified licensed wastewater operators at all sites. Once samples have been collected, they are then transported to State certified labs where professionally trained chemists tests for BOD concentrations and several other water quality measurements found in the anaerobic influent and effluent. From this process, computer print outs are produced with BOD concentrations that are ultimately used for emission reduction estimates.

Water Flow:

Continuous flow meters are used to monitor anaerobic influent/effluent, with slight variations in positioning and monitoring at each site. The water flow in all sites are monitored electronically with daily totals being produced on a print out, which is then migrated by hand by staff to a central excel file.

Gas Production:

All facilities have continuous gas monitoring equipment that produces hourly totals in daily standard cubic feet. From this output, the staff then migrate by hand, the data to an Excel



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spreadsheet where daily totals are produced. Monitoring of gas that flows to the flares and boilers is also done from the same system and accounted for in the data migration.

Calibration:

All facilities have third party quarterly calibration of the flow meters monitoring the flow of gas to the flare and boiler. The flow meters monitoring the waste water flow at influent and effluent of the anaerobic digester is calibrated at a minimum frequency of once a year. Certified in-house or external labs conduct the BOD5 analysis. This documentation is provided to Blue Source for record keeping.



4. CERTIFICATION STATEMENT

Introduction

Det Norske Veritas (U.S.A), Inc (DNV) has been engaged by Blue Source to verify the greenhouse gas (GHG) emission reductions reported for the “Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” project for the period from January 1, 2010 to October 31, 2010 amounting to 221 517 tCO_{2e}. The emissions reductions are reported in the monitoring report of December 22, 2010 /3/.

The validation and first verification (monitoring period January 1, 2004 to December 31, 2008) was conducted in the period of 2008 and 2009. DNV submitted the final validation and verification report and certification statement to Blue Source in March 2009. The second verification for the monitoring period of (January 1, 2009 to September 30, 2009) was conducted in December 2009. Third verification for the monitoring period of (October 1, 2009 to December 31, 2009) was conducted in February 2010. The final verification report for the third verification period was issued on February 25, 2010

This is the fourth verification and has been conducted according to the guidelines of VCS 2007.1/12/.

Table 9: Summary of Emission Reduction by Facility

Oct-Dec 09	Net ERC tCO _{2e}	BE tCO _{2e}	PE tCO _{2e}
Amarillo	108,970	111,691	2,720
Joslin	33,926	35,817	1,892
Lexington	50,208	52,421	2,213
Storm Lake	28,413	29,967	1,555
TOTAL	221,517	229,896	8,380

Responsibilities of the project participants and DNV

The project participants are responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the monitoring plan included in the VCS PD entitled “Emission Reduction Protocol for Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” /1/ and the monitoring report of the “Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” project of December 22, 2010, /3/.

It is DNV’s responsibility to express an independent verification statement on the reported GHG emission reductions from the project for the period from January 1, 2010 to October 31, 2010



based on the verified emissions for the same period and the project's compliance with the monitoring plan included in the VCS PD entitled "Emission Reduction Protocol for Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities"/1/.

Basis of GHG verification opinion

DNV's verification approach was based on the requirements as defined under the Voluntary Carbon Standard 2007.1/12/, as well as those defined by the CDM baseline and monitoring methodology ACM0014, Version 1/6/, based on which the monitoring plan included in the VCS PD entitled "Emission Reduction Protocol for Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities" /1/ was developed.

DNV's verification approach draws on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. DNV's examination included an assessment of evidence relevant to the amounts and disclosures in relation to the project's GHG emission reductions for the period January 1, 2010 to October 31, 2010.

DNV planned and performed the work to obtain the information and explanations that DNV considered necessary to provide sufficient evidence to give reasonable assurance that the reported amount of GHG emission reductions for the period from January 1, 2010 to October 31, 2010 are fairly stated.

DNV conducted the verification on the basis of the monitoring plan included in the VCS PD entitled "Emission Reduction Protocol for Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities"/1/. The verification included: collection of evidence supporting the reported data, checking whether the provisions of the monitoring plan were consistently and appropriately applied.

DNV has verified whether the information included in the monitoring report for the "Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities" dated December 22 2010 /3/ is correct and that the emissions reductions achieved have been determined correctly.

Certification Statement

In our opinion, the GHG emission reductions stated in the Monitoring Report of December 22 2010 for the "Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities" project for the period from January 1, 2010 to October 31, 2010 are fairly stated/3/.

The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology ACM0014 Version 1/6/, and the monitoring plan included in the VCS PD entitled "Emission Reduction Protocol for Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities"/1/

Hence, Det Norske Veritas (U.S.A), Inc is able to certify that the reported emission reductions from the project during the period from January 1, 2010 to October 31, 2010 amount to 221 517 tCO₂e.



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DNV does not assume any responsibility towards the issuance and utilization of the VCUs hereby verified and certified. Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration.

The verification of reported emission reductions is based on the information made available to us and the engagement conditions detailed in this report. DNV can not guarantee the accuracy or correctness of this information. Hence, DNV cannot be held liable by any party for decisions made or not made based on this report.



REFERENCES

- /1/ Blue Source: “Emission Reduction Protocol for Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” (VCS PD), March 2009
- /2/ Blue Source: Monitoring Report for the “Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” project for the period January 1 – October 31, 2010, Version 1, November 2010
- /3/ Blue Source: Monitoring Report for the “Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities” project for the period January 1 – October 31, 2010, Version 2, December 22, 2010
- /4/ DNV: VCS Validation Report for “Emission Reduction Protocol for Methane Capture, Flare and Utilization at Tyson Wastewater Treatment Facilities,” March 2009
- /5/ CDM Executive Board, *Guidelines on completeness check of requests for issuance*
- /6/ CDM Executive Board: Approved Baseline and Monitoring Methodology ACM0014: “Avoided methane emissions from wastewater treatment systems”. Version 01
- /7/ CDM Executive Board: “Tool to determine project emissions from flaring gases containing methane”
- /8/ CDM Executive Board: “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion” (Version 01)
- /9/ CDM Executive Board: “Tool to determine emissions from flaring gases containing methane.” Version 1
- /10/ CDM Executive Board: “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (Version 01)
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- /18/ Tyson Fresh Meat Laboratory: “Approved Parameter List” March 21, 2008
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- /23/ Tyson Fresh meats Laboratory: “Approved Parameter List”, 01/01/2010/
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- /26/ Platt Environmental: “Flue Gas Volumetric Flow Audit and Cylinder Gas Audit Test Report – Lexington facility”, March 24, 2010 and September 14, 2010
- /27/ Platt Environmental: Calibration document for stack thermocouple, March 23, 2010, June, 2010, August, 2010
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- /29/ Platt Environmental: Calibration document for biogas flow-meter to boiler, March 23, 2010, June, 2010, August, 2010
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