VERIFICATION REPORT
VEMA S.A.

VERIFICATION OF THE JI PROJECT

REDUCTION OF METHANE EMISSIONS ON THE GAS EQUIPMENT OF GAS-DISTRIBUTING POINTS AND ON THE GAS ARMATURE OF GAS-DISTRIBUTING NETWORKS OF CJSC «THEODOSIA»

2nd PERIODIC
FOR THE PERIOD OF 01/01/2008-31/08/2011

REPORT № UKRAINE-VER/0373/2011
REVISION № 02

BUREAU VERITAS CERTIFICATION

Report No: UKRAINE-ver/0373/2011

VERIFICATION REPORT

Date of first issue: 07/09/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: VEMA S.A.	Client ref.: Fabian Knodel

Summary:

Bureau Veritas Certification has made the 2nd periodic verification of VEMA S.A. project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC "Theodosia" , which is implemented in Feodosiya, Ukraine, and uses a specific approach to JI projects, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CL, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented according to the plan and provisions stated in the project design document. Installed equipment that is essential for generating emission reductions runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated without material errors, and the ERUs issued totalize 230 778 tons of CO_{2eq} for the monitoring period of 01/01/2008 - 31/08/2011 (51971 tons of CO_{2eq} in 2008, 60773 tons of CO_{2eq} in 2009, 69513 tons of CO_{2eq} in 2010 and 48521 tons of CO_{2eq} for 8 months of 2011).

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0373/2011	Subject Group: JI	
Project title: "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC "Theodosia"		
Work carried out by: Oleg Skoblyk – Team Leader, Climate Change Lead Verifier Katerina Zinevich – Team member, Climate Change Lead Verifier		
Work reviewed by: Ivan Sokolov – Internal technical reviewer Oleksandr Kuzmenko – Technical specialist		
Work approved by: Flavio Gomes – Climate Change Operational Manager		
Дата цього видання: 29/09/2011	№ ред.: 02	Number of pages: 29

Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC “Theodosia”, (hereafter called “the project”) that is implemented in Feodosiya city and on the territory of villages of Feodosiya regional area of the Autonomous Republic of Crimea, Ukraine.

This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting, as well as the host country criteria.

The verification covers the period from January 1, 2008 to August 31, 2011.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity (AIE) of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 Verification Team

The verification team consists of the following personnel:

Oleg Skoblyk
Bureau Veritas Certification, Team Leader, Climate Change Lead Verifier

Katerina Zinevich
Bureau Veritas Certification, Team member, Climate Change Lead Verifier

This verification report was reviewed by:
Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Oleksandr Kuzmenko
Bureau Veritas Certification, Technical Specialist

2 METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19th meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by VEMA S.A. and additional background documents related to the project design, baseline, and monitoring plan, i.e. country Law, Project Design Document (PDD),

Determination Report of the project issued by Bureau Veritas Certification Holding SAS No. UKRAINE/det/0324/2011 as of 12/08/2011, Guidance on criteria for baseline setting and monitoring, Host party criteria, the Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring Report for the period from 01/01/2008 to 31/08/2011, version 01 as of September 5, 2011 and version 02 as of September 19, 2011 and the project as described in the determined PDD.

2.2 Follow-up Interviews

On 08/09/2011 Bureau Veritas Certification verification team visited the project implementation site and performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of CJSC "Theodosia" and VEMA S.A. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
CJSC "Theodosia"	➢ Organizational structure ➢ Responsibilities and authorities ➢ Roles and obligations relating to data collection and processing ➢ Equipment installation ➢ Data registration, archieving and reporting ➢ Metering equipment control ➢ Metering record keeping system, database ➢ IT management ➢ Personnel training ➢ Quality control procedures and technology ➢ Internal audit and verification
Consultant: VEMA S.A.	➢ Baseline methodology ➢ Monitoring plan ➢ Monitoring report ➢ Deviations from the PDD

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective and forward actions as well as clarification requests and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reductions calculation.

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;

(b) Clarification request (CL), requesting the project participants to provide additional information for the AIE to assess compliance with the monitoring plan

(c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

3 VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 9 Corrective Action Requests, and 4 Clarification Requests.

The number between brackets at the end of each section corresponds to the DVM paragraph.

3.1 Remaining issues and FARs from previous verifications

There are no any remaining CLs, CARs and FARs from previous verifications.

3.2 Project approval by Parties involved (90-91)

The project obtained approval by the Host party (Ukraine) - Letter of Approval №2668/23/7 issued by the State Environmental Investment Agency of Ukraine as of 21/09/2011; and written project approval by the party – buyer of emission reductions units (Switzerland) - Letter of Approval # J294-0485 issued by the Federal Office for the Environment FOEN of Switzerland dated 23/08/2011.
The abovementioned written approvals are unconditional.

3.3 Project implementation (92-93)

CJSC “Theodosia” is the company providing natural gas transportation and supply to industrial consumers (271 companies), municipal services (65 entreprises) and population (23 034 appartments and households) in the city of Feodosiya and villages of Feodosiya regional area (Prymorskyi, Koktebel, Schebetivka, Ordzhonikidze, Nasypne, Blyzhnye, Sonyachne, Krasnokamyanka, Pidgirne, Yuzhne, Stepne, Beregove) of the Autonomous Republic of Crimea, Ukraine.

The structure of current gas transport rates that are regulated by the government does not include depreciation and investment needs of gas distribution enterprises. This leads to the lack of funds for performance of necessary repair works and modernization of gas networks, purchase of appropriate engineering equipment and components, and also results in increase of natural gas leakage at the CJSC “Theodosia” facilities.

Application of JI project mechanism provided by the Kyoto Protocol was planned before the beginning of the project implementation. For this purpose, a preliminary investment agreement relating to the Joint Implementation project between VEMA S.A. (Switzerland) and CJSC “Theodosia” (Ukraine) was signed in January 2005.

The purpose of the project is reduction of the natural gas leakage at gas-transport and gas-distribution infrastructure of CJSC “Theodosia”, which are the result of seal failures of gas equipment and gas fittings. The main sources of leakage, included into the project scope are:

- gas equipment (reducing gears, valves, filters, switches, etc.), flanged and threaded connections in gas distributoin points (GDP)

and cabinet-type gas distribution points (CGDP) of CJSC "Theodosia";
- gas fittings (faucets, bolts, valves, etc.), threaded and flanged connections at gas pipelines of CJSC "Theodosia".

Total quantity of GDPs included in the project boundary is 2 units, CGDPs – 138 units, number of gas fittings at gas pipelines is 424 units.

The main reason of natural gas leakage is failure of sealing elements of equipment as a result of action of temperature vibrations and moisture. Basic component of natural gas, methane (92 - 95%), is a greenhouse gas. Removal of natural gas leakage will result in reductions of greenhouse gas emissions.

Within the framework of the JI project with the aim of elimination of methane leakage at gas equipment and gas fittings three types of repairs are used:

- Complete replacement of out-of-date and morally worn out gas equipment and gas fittings with new units;
- Repair of gas equipment and gas fittings components;
- Replacement of pressure-sealing elements by using modern sealing materials thus changing common practice of maintenance and repair that is based on using paronite gaskets, and sealing stuffing made of cotton fibres with fatty impregnation and asbestos-graphite filler.

In addition to reduction of methane leakage, the JI project activity will lead to reduction of technical leaks of natural gas and it will contribute to improvement of environmental situation, reduction of the risk of accidents and explosive situations.

The project activity includes:

- Implementation of purposeful examination and technical maintenance (PETM) of GDP (CGDP) gas equipment and gas fittings, flange and threaded joints – modern and the most economically effective practice, which allows not only for detection of leaking areas, but also determination of leakage volume (i.e., potential volume of gas loss reduction). This key information is required for substantiation of efficiency of repair works and priority choice of its objects, which is important under short financing for elimination of all leakages. This activity includes purchase and calibration of modern measuring equipment, appropriate training of employees, monitoring of each unit of gas equipment and gas fittings, flange and threaded joints, creation of methane volume leakage data collection and storage system, and implementation of

internal audit and quality assurance system for elimination and accounting of methane leakage.

- Detection and measurement of methane leakage: the monitoring system of leakage at all GDP (CGDP) gas equipment, gas fittings (faucets, bolts, valves), flange and threaded joints, including eliminated methane leakage (repaired components of equipment). The monitoring is carried out on a regular basis by specially trained staff. Detected leakage is duly marked with individual number; methane leakage volumes are measured and registered in the database.

- Elimination of all detected leakages: repairs of leaking gas equipment and gas fittings of gas distribution pipelines in the framework of this project vary from replacement of gaskets and the use of new compactors or sealing materials to capital repairs and replacement of the gas equipment and gas fittings with new and modern ones. Repaired components of gas equipment and gas fittings of gas distribution pipelines are regularly checked as a part of a standard monitoring activity to make sure they have not become the source of leakage again.

The measures that were implemented during the period from January 1, 2008 to August 31, 2011 are as follows:

Table 2 Status of project implementation during the period of 01/01/2008 - 31/08/2011

№	Measures provided for under the project	The scope of work done, units			
		2008	2009	2010	2011
1	Repair of GDPs/CGDPs (reconstruction, sealing, replacement of gas equipment)	35	7	19	2
2	Repair (replacement) of gas fittings, flange, threaded joints of gas distribution networks	98	24	68	2
Total		**133**	**31**	**87**	**4**

The tasks of the current monitoring period is further accomplishment of purposeful examination and technical maintenance (PETM) of all GDP (CGDP) gas equipment and gas fittings that were repaired (replaced) within the entire duration of the JI project.
Gas equipment that was repaired in the period of the project activity is regularly checked during current monitoring period as a part of a standard

monitoring program to make sure it has not become the source of leakage again.

Regular maintenance of gas equipment according to the Monitoring Plan, provided in the PDD version 05, is conducted once a year, technical maintenance - once per six month.

The project was in operation throughout the monitoring period - from 01/01/2008 to 31/08/2011.

Identified problem areas of concern as to project implementation, project participants answers and conclusions of Bureau Veritas Certification are described in Appendix A to this report (refer to CL 01, CL 02).

3.4 Compliance of the monitoring plan with the monitoring methodology (94-98)

The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.
To calculate the emission reductions such key factors as the rate of leakage for each leakage found, gas temperature and pressure, volume of capacity, the concentration of methane in the sample, the time during which the concentration of methane in the volume capacity reaches a certain level, experience in implementing measures envisaged by the project, the current practice that exists in Ukraine in this area, financial costs and the availability of expertise, legislation affecting the emissions in the baseline, level of activity on the project and the project emissions and risks associated with the project were taken into consideration.

Data sources used for calculating emission reductions, such as a calibrated measuring equipment (gas analyzer), are clearly identified, reliable and transparent.

Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.
Monitoring periods for each project component are clearly defined in the monitoring report and do not overlap with those for which verification has been made in the past and is considered final.

Identified problem areas of concern as to compliance of monitoring plan with monitoring methodology, project participants answers and

conclusions of Bureau Veritas Certification are described in Appendix A to this report (refer to CAR 01, CAR 02, CAR 03, CAR 04).

3.5 Revision of monitoring plan (99-100)

Not applicable.

3.6 Data management (101)

Data and their sources, which are contained in the monitoring report, are clearly defined, reliable and transparent.

Implementation of data collection procedures is carried out in accordance with the PDD monitoring plan, including quality control and quality assurance procedures.

Monitoring equipment function, including its calibration status, is in line with the requirements.
According to current legislation "On metrology and metrological activity", all measuring equipment in Ukraine must meet the specified requirements of relevant standards and is subject to a periodic verification. Calibration of measuring devices is conducted in accordance with national standards.

The only device that requires calibration procedure and is used in the methane monitoring process is gas analyzer EX-TEC®SR5. Inter-calibration interval is 1 year.

After verification (calibration) a certificate confirming the technical health of the device is issued.

Actual data and records used for monitoring are duly verified.

Data collection and data management system of the project is in line with the PDD, the monitoring plan and consists of three parts:

- Measurements of methane leakage value before the repair (replacement) of gas equipment;
- Measurements of methane leakage value after the repair (replacement) of gas equipment;
- Archiving and processing of obtained results.

To measure leakage volume of natural gas the method based on the Calibrated Bag Technology described in the approved baseline methodology AM0023 “Leak reduction from natural gas pipeline compressor or gate stations”, version 3.0 was used. One of the problems of using this method is difficult accounting of the volume of the fittings whereat measurements are done, and the initial air volume in the course of determining gas volume received in the bag.
To solve these problems a special installation was made on the basis of plastic container of known volume (0.11 m^3), package, plastic hose and pressure gauge.

In order to ensure successful implementation of the project and the credibility and verifiability of the emissions reductions achieved, the project must have a well-organized management system.

Coordination of work of all departments and services of CJSC “Theodosia” relating to the project implementation is done by specially created Working team created by Order of General director of CJSC “Theodosia” № 22/01-05 dated 22/01/2005. Renewed structure of the Working team is approved by the order of acting General director № 283 dated 12/05/2011. The structure of the Working team is shown in the Figure 1.

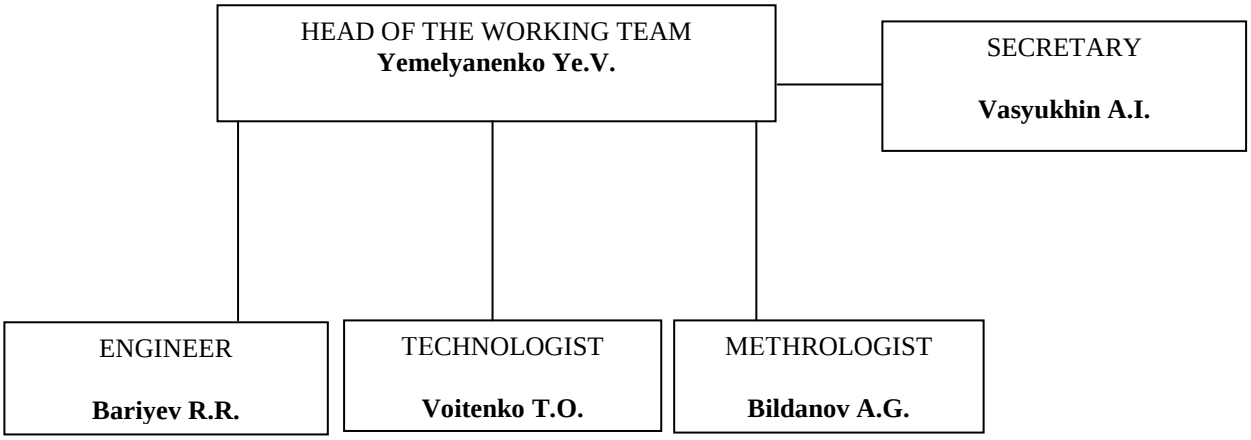

Figure 1 Structure of the Working team

Voitenko T.O. is responsible for collection of all information envisaged in the monitoring plan and making all necessary calculations. Vasyukhin A.I. is responsible for storage and archiving of all information obtained as a result of the measurements and calculations. On the basis of the obtained information Yemelyanenko Ye.V., the leader of the working team, determines the plan of measures under the Project and the volume of necessary resources. Bariyev R.R. is responsible for conducting monitoring measurements of leakage and elimination thereof, Bildanov A.G. ensures that calibrated measuring equipment and technical support are in place.

All the necessary information on monitoring of GHG emissions is stored in paper and/or electronic form and will be stored until the end of the crediting period and two years after the last transaction with emission reduction units.

The monitoring Report version 02 provides sufficient information about the intended role, responsibilities and authorities for implementing and

maintaining monitoring procedures, including data management. Verification group confirms the effectiveness of existing management system and operating system and considers them suitable for reliable monitoring of the project.
Identified problem areas of concern as to data management, project participants answers and conclusions of the Bureau Veritas Certification are described in Appendix A to this report (refer to CAR 05, CAR 06, CAR 07, CAR 08, CAR 09, CL 03, CL 04).

3.7 Verification regarding programs of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 2nd periodic verification of the project “Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC “Theodosia” for the period from January 1, 2008 to August 31, 2011, which applies the JI Specific Approach. The verification was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of Vema S.A. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD version 05. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the Project Monitoring Report version 02 for the reporting period of 01/01/2008-31/08/2011 as indicated below. Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: From 01/01/2008 to 31/08/2011

In the period from 01/01/2008 to 31/12/2008

Baseline emissions : 64 820 t CO_2 equivalent;
Project emissions : 12 849 t CO_2 equivalent;
Emission Reductions : 51 971 t CO_2 equivalent.

In the period from 01/01/2009 to 31/12/2009

Baseline emissions : 74 938 t CO_2 equivalent;
Project emissions : 14 165 t CO_2 equivalent;
Emission Reductions : 60 773 t CO_2 equivalent.

In the period from 01/01/2010 to 31/12/2010

Baseline emissions : 84 404 t CO_2 equivalent;
Project emissions : 14 891 t CO_2 equivalent;
Emission Reductions : 69 513 t CO_2 equivalent.

In the period from 01/01/2011 to 31/08/2011

Baseline emissions : 58 627 t CO_2 equivalent;
Project emissions : 10 106 t CO_2 equivalent;
Emission Reductions : 48 521 t CO_2 equivalent.

Total amount in the period from 01/01/2008 to 31/08/2011

Baseline emissions : 282 789 t CO_2 equivalent;
Project emissions : 52 011 t CO_2 equivalent;
Emission Reductions : 230 778 t CO_2 equivalent.

5 REFERENCES

Category 1 Documents:

Documents provided by the project participants that relate directly to the GHG components of the project.

/1/	The PDD of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC "Theodosia", version 05, as of August 08, 2011
/2/	Monitoring Report of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC "Theodosia" for the period of 01/01/2008-31/08/2011, version 01, as of September 5, 2011
/3/	Monitoring Report of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC "Theodosia" for the period of 01/01/2008-31/08/2011, version 02, as of September 19, 2011
/4/	Annex A to the Monitoring report "Calculation of greenhouse gas emission reductions at gas equipment of gas-distribution points (cabinet-type gas-distribution points), gas armature, flanged, threaded joints of gas-distribution networks of CJSC «Theodosia» for the period from January 1, 2008 to August 31, 2011".
/5/	Determination Report of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC «Theodosia», issued by Bureau Veritas Certification, № UKRAINE-det/0324/2011 dated 12/08/2011
/6/	Letter of Endorsement № 1778/23/7 of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC «Theodosia» issued by the State Environmental Investment Agency of Ukraine dated 08/07/2011
/7/	Letter of Approval №2668/23/7 of the JI project "Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC "Theodosia" issued by the State Environmental Investment Agency of Ukraine as of 21/09/2011
/8/	Letter of Approval № J294-0485 issued by the Federal Office for the Environment (FOEN) of Switzerland dated August 23, 2011.

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/	Approved consolidated baseline methodology AM0023 “Leak reduction from natural gas pipeline compressor or gate stations”, version 3.0
/2/	Registry of gas distribution points (cabinet-type gas distribution points), gas fittings of gas distribution networks of CJSC “Theodosia” (as of 2005)
/3/	Preliminary investment agreement relating to the JI project between CJSC “Theodosia” and VEMA S.A. dated 18/01/2005
/4/	Order № 283 on changes of the structure of the Working team responsible for control over natural gas leakage at equipment of gas distribution networks and elimination of natural gas leakage in the framework of the JI project dated 12/05/2011
/5/	Order № 22/01-05 on creation of the Working team responsible for control over natural gas leakage at equipment of gas distribution networks and elimination of natural gas leakage in the framework of the JI project dated 22/01/2005
/6/	Registry of gas distribution points and gas fittings of the JI project “Reduction of methane emissions on the gas equipment of gas-distributing points and on the gas armature of gas-distributing networks of CJSC “Theodosia”
/7/	Calibration certificate of working measuring instrument (stopwatch) № 024113, valid till 22/07/2012
/8/	Record of unscheduled repairs at GDPs (CGDPs) at CJSC "Theodosia"
/9/	Record of monitoring measurements of methane leaks during unscheduled repairs (replacement) of equipment at GDPs(CGDPs) at CJSC "Theodosia"
/10/	Photo of portable gas analyzer EX-TEC ® SR5
/11/	Photo of barometer
/12/	Photo of mechanical stopwatch "SOS pr-2b-2-000"
/13/	Photo of liquid technical thermometer TTZH-M TU 25-2022.0006-90
/14/	Photo of the process of measuring methane using a portable gas analyzer EX-TES ® SR5
/15/	Passport of portable gas analyzer EX-TEC ® SR5
/16/	Technical Passport of liquid technical thermometer TTZH-M TU 25-2022.0006-90

/17/	Passport of mechanical stopwatch "SOS pr-2b-2-000"
/18/	Passport of pressure regulator RD Du 32 and 50
/19/	Manual on barometer operation and household barometers BTK-SN-14

Persons interviewed:

List persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.

	Name	Organization	Position
/1/	Kozlovskyi Ye.V.	CJSC «Theodosia»	Acting general director
/2/	Yemelyanenko Ye.V.	CJSC «Theodosia»	Chief Engineer, Head of the Working Team
/3/	Vasyukhin A.I.	CJSC «Theodosia»	Engineer, secretary of the working team
/4/	Voitenko T.O.	CJSC «Theodosia»	Head of the production and technical department, member of the working team
/5/	Belov E.V.	“CEP” Ltd.	Consultant of VEMA S.A.

APPENDIX A: VERIFICATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

VERIFICATION PROTOCOL

Table 1 Check list for verification, according to the DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFP of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	The project was approved by both the Host Party (Ukraine) and the other Party involved (Switzerland). Written project approvals were issued by DFPs of Parties involved. Both Letters of Approval were available at the beginning of the first verification of the project.	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	**CL 01.** The project was implemented with some deviations from the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website, namely: according to the PDD the implementation of repair works finishes in 2010, and the total amount of repaired (replaced) equipment at the end of 2010 is 21 units of GDPs (CGDPs) and 70 units of gas fittings. But the Monitoring report states that at the end of 2010 19 units of GDPs (CGDPs) and 68 units of gas fittings were repaired (replaced). Two units of GDPs (CGDPs) and 2 units of gas	**CL 01** **CL 02**	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		fittings were repaired (replaced) in 2011. Please explain this discrepancy. **CL 02.** The data provided in the PDD relating to project GHG emissions, baseline GHG emissions and GHG emission reductions do not coincide with the data stated in the MR. Please provide, justification of this inconsistency.		
93	What is the status of operation of the project during the monitoring period?	Project was operational for the whole monitoring period, which is 01/01/2008-31/08/2011.	OK	OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	Yes, monitoring occured in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website. **CAR 01.** In order to set the baseline the project used a specific approach based on the methodology AM0023, version 3.0, approved by the CDM Executive Board. Please provide a reference to the methodology in the MR.	**CAR 01**	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	Yes, for calculating the emission reductions such key factors as the rate of leakage for each leakage found, gas temperature and pressure, volume of capacity, the concentration of methane in the sample, the time during which the concentration of methane in the volume capacity reaches a certain level, experience in implementing measures envisaged by the project, the current practice that exists in Ukraine in this area, financial costs and the availability of expertise, legislation affecting the emissions in the baseline, level of activity on the project and the project emissions and risks associated with the project were taken into account, as appropriate.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Data sources used for calculating emission reductions, such as measuring equipment - gas analyzer "EX-TEC®SR5", stop-watch timer "SOS pr-2b-2 ', mercury glass thermometer of TL-4 type, flow meter, pressure gauge; information from manufacturers and IPCC are clearly identified, reliable and transparent. **CAR 02.** Please indicate baseline, project GHG emissions and emission reductions in t CO_2 equivalent.	**CAR 02**	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	Yes, emission factors, including default emission factors, that were used for calculating the emission reductions or enhancements of net removals, were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. **CAR 03.** Please, specify correct data units of parameters that are used for calculations of GHG emissions and specified in Table 3 of the MR.	**CAR 03**	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	Yes, the calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. **CAR 04.** Values of emission reductions in 2010 and 2011 do not correspond to the differences of baseline and project emissions. Obviously, this happened as a result of rounding of numbers in Excel spreadsheets, which contains estimations of emission reductions. Please, make appropriate corrections in the MR and Annex A (Excel table).	**CAR 04**	OK
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?			
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/a	N/a	N/a
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/a	N/a	N/a
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	N/a	N/a	N/a
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	The Monitoring plan was not reviewed by the project participants.	OK	OK
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	N/a	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. **CAR 05.** Please provide a clear explanation regarding quality control and quality assurance measures and the respective responsibilities as to such measures. **CAR 06.** Please provide information on the frequency / periodicity of recording of monitoring parameters.	**CAR 05** **CAR 06**	OK OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	Measuring equipment designed for the project monitoring, operates properly, and its calibration is performed according to manufacturer's instructions and standards of the industry. However, there were some questions about measuring equipment to be corrected or clarified: **CAR 07.** Frequency of calibration of measuring equipment was not specified in the MR. Please provide information on the frequency of calibration of all equipment used for project monitoring. **CAR 08.** Please provide a detailed description in the MR by means of which device the monitoring measurement of methane was carried out. **CAR 09**. Please provide passports of the portable gas analyzer EX-TEC ® SR5, mercury glass thermometer of TL4 type and manometer, which are indicated in the MR. **CL 03.** Please indicate the level of measuring error of gas analyzer EX-TEC ® SR5.	**CAR 07** **CAR 08** **CAR 09** **CL 03**	OK OK OK OK
101 (c)	Are the evidence and records used for the	The evidence and records used for the monitoring are	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring maintained in a traceable manner?	maintained in a traceable manner. All information needed for monitoring of emission reductions is stored in paper and / or electronic formats.		
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system of the project is in accordance with the monitoring plan. Verification team confirms the effectiveness of existing management system and operating system and considers them suitable for reliable monitoring of the project. **CL 04.** Please, check the numbering of Tables and Figures in the MR.	**CL 04**	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N/a	N/a	N/a
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/a	N/a	N/a
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/a	N/a	N/a
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	N/a	N/a
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/a	N/a	N/a
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that:	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: − The types of JPAs; − The complexity of the applicable technologies and/or measures used; − The geographical location of each JPA; − The amounts of expected emission reductions of the JPAs being verified; − The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/a	N/a	N/a
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/a	N/a	N/a
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/a	N/a	N/a

TABLE 2 RESOLUTION OF CLARIFICATION AND CORRECTIVE ACTION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR 01. In order to set the baseline the project used a specific approach based on the methodology AM0023, version 3.0, approved by the CDM Executive Board. Please provide a reference to the methodology in the MR.	94	Required references were provided throughout the text of the MR, version 02.	The reference was checked, the issue is closed.
CAR 02. Please indicate baseline, project GHG emissions and emission reductions in t CO_2 equivalent.	95 (b)	Required corrections were made in the MR version 02.	The issue is closed based on necessary changes made.
CAR 03. Please, specify correct data units of parameters that are used for calculations of GHG emissions and specified in Table 3 of the MR.	95 (c)	Required corrections were made in Table 3 of the MR version 02.	The issue is closed based on necessary changes made.
CAR 04. Values of emission reductions in 2010 and 2011 do not correspond to the differences of baseline and project emissions. Obviously, this happened as a result of rounding of numbers in Excel spreadsheets, which contains estimations of emission reductions. Please, make appropriate corrections in the MR and Annex A (Excel table).	95 (d)	As a result of rounding of numbers in Excel spreadsheets, the total value of emission reductions was calculated incorrectly. Corrections were made in all tables of the MR, version 02, where the emission reductions were specified, as well as in Annex A (Excel spreadsheet).	The issue is closed based on necessary corrections made.

CAR 05. Please provide a clear explanation regarding quality control and quality assurance measures and the respective responsibilities as to such measures.	101 (a)	The management structure, responsibilities and obligations relating to quality control and quality assurance measures, description of data quality control procedures are provided in Sections B.2. and C of the MR version 02.	The issue is closed based on necessary changes made.
CAR 06. Please provide information on the frequency / periodicity of recording of monitoring parameters.	101 (a)	Information about frequency of recording of monitoring parameters was provided in the MR version 02.	The issue is closed based on information provided in the MR version 02.
CAR 07. Frequency of calibration of measuring equipment was not specified in the MR. Please provide information on the frequency of calibration of all equipment used for project monitoring.	101 (b)	The only device that requires calibration procedure and is used in the methane monitoring process is gas analyzer EX-TEC®SR5. Inter-calibration interval is 1 year. After verification (calibration) a certificate confirming the technical health of the device is issued.	Clarifications are accepted, the issue is closed.
CAR 08. Please provide a detailed description in the MR by means of which device the monitoring measurement of methane was carried out.	101 (b)	To measure leakage volume of natural gas the method based on the Calibrated Bag Technology described in the approved baseline methodology AM0023 “Leak reduction from natural gas pipeline compressor or gate stations”, version 3.0 was used. A special installation was made on the basis of plastic container of known volume (0.11 m^3), package, plastic hose and pressure gauge.	The issue is closed based on information provided in the MR version 02.
CAR 09. Please provide passports of the portable gas analyzer EX-TEC®SR5, mercury glass thermometer of TL4 type and manometer, which are indicated in the MR.	101 (b)	The passports of the equipment were provided to the Verification team.	The documents were reviewed, the issue is closed.

CL 01. The project was implemented with some deviations from the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website, namely: according to the PDD the implementation of repair works finishes in 2010, and the total amount of repaired (replaced) equipment at the end of 2010 is 140 units of GDPs (CGDPs) and 424 units of gas fittings. But the Monitoring report states that at the end of 2010 138 units of GDPs (CGDPs) and 422 units of gas fittings were repaired (replaced). Two units of GDPs (CGDPs) and 2 units of gas fittings were repaired (replaced) in 2011. Please explain this discrepancy.	92	As of the end of 2010 all the planned project repairs were not completed due to insufficient financing, so the remaining work was deferred to 2011.	Clarification was accepted. The issue is closed.
CL 02. The data provided in the PDD relating to project GHG emissions, baseline GHG emissions and GHG emission reductions do not coincide with the data stated in the MR. Please provide, justification of this inconsistency.	92	This discrepancy is explained by the fact that the data provided in the PDD is predictable (estimateded in accordance with a specific approach), and the MR contains real actual data.	Clarification was provided. The issue is closed.
CL 03. Please indicate the level of measuring error of gas analyzer EX-TEC ® SR5.	101 (b)	The level of measuring error of gas analyzer EX-TEC ® SR5 is 10% which is in line with EN 50054/57 standard. The equipment is subject to annual calibration.	Clarifications are accepted, the issue is closed.
CL 04. Please, check the numbering of Tables and Figures in the MR.	101 (d)	Relevant corrections were made in the MR version 02.	The issue is closed based on necessary changes made.