VERIFICATION REPORT

PJSC “ODESAGAS”

VERIFICATION OF JI PROJECT

REDUCTION OF METHANE EMISSIONS AT FLANGED, THREADED JOINTS AND SHUT-DOWN DEVICES OF OJSC “ODESAGAS” EQUIPMENT”

9th periodic

FOR THE PERIOD OF 01/11/2012-31/12/2012

REPORT № UKRAINE-VER/0908/2013

REVISION № 02

BUREAU VERITAS CERTIFICATION

Date of first issue: 22/01/2013	Organizational unit: Bureau Veritas Certification Holding SAS
Client: PJSC "Odesagas"	Client ref.: Vitaliy Gerasymenko

Summary:

Bureau Veritas Certification has made the 9th periodic verification of PJSC "Odesagas" project "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment", which is implemented in Odesa city and cities of Odesa region, 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 (but for the crediting period) 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 Requests, 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 determined changes. 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 105 031 tons of CO_{2eq} for the monitoring period of 01/11/2012 - 31/12/2012.
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/0908/2013	Subject Group: JI	
Project title: "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment"		
Work carried out by: V. Yeriomin– Team Leader, Climate Change Lead Verifier O.Kuzmenko - Team member, technical specialist		☒ No distribution without permission from the Client or responsible organizational unit
Work reviewed by: I.Sokolov – Internal technical reviewer V.Kobzar - Technical specialist		☐ Limited distribution
Work approved by: Sokolov Ivan – Operational Manager		☐ Unrestricted distribution
Date of this revision: 12/02/2013	Rev. No.: 02	Kiль Number of 29

Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

PJSC “Odesagas” has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC “Odesagas” Equipment”, (hereafter called “the project”) in Odesa city and cities in Odesa region, 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 November 1, 2012 to December 31, 2012.

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:

V. Yeriomin
Bureau Veritas Certification, Team Leader, Climate Change Lead Verifier

O.Kuzmenko
Bureau Veritas Certification , Team member, technical specialist

This verification report was reviewed by:

I. Sokolov

Bureau Veritas Certification, Internal Technical Reviewer

V.Kobzar
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 PJSC “Odesagas” and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Determination Report of the project issued by Bureau Veritas Certification Holding SAS No. UKRAINE-0118/2010 as of 15/05/2010, 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 01/11/2012 to 31/12/2012, version 01 as of January 16, 2013 and version 02 as of February 07, 2013 and the project as described in the determined PDD.

2.2 Follow-up Interviews

On 07/02/2013 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 PJSC "Odesagas" and VEMA were interviewed. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
PJSC "Odesagas"	➢ Organizational structure ➢ Responsibilities and authorities ➢ Personnel training ➢ Quality control procedures and technology ➢ Equipment use (records) ➢ Metering equipment control ➢ Metering record keeping system, database
Consultant: VEMA	➢ 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 3 Corrective Action Requests, and 1 Clarification Request.

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

3.1 Remaining CL and FARs from previous verifications

There are no any remaining CL and FAR from previous verifications.

3.2 Project approval by Parties involved (90-91)

The project obtained approval by the Host party (Ukraine) - Letter of Approval №737/23/7 dated 07/06/2010 issued by the National Environmental Investment Agency of Ukraine and written project approval by the party – buyer of emission reductions units (Denmark) - Letter of Approval №1602/1102-0041 dated 01/06/2010 issued by the Danish Energy Agency, the Danish Ministry of Climate and Energy).

The abovementioned written approvals are unconditional.

3.3 Project implementation (92-93)

PJSC “Odesagas” is the company uniting gas supply facilities of 26 districts in Odesa region and gas supply facility in Odesa city, and providing natural gas transportation and supply to industrial and domestic consumers. Total length of distribution gas pipeline of high (12Mpa – 0.6 Mpa), medium (0.3 Mpa) and low (0.005 Mpa) pressure is 4579 km. 2625 km is the property of PJSC “Odesagas”. Average annual volume of transported gas reaches 2861718 ths m^3. The structure of current gas transport tariffs (the tariffs are regulated by the state) does not include depreciation and investment needs of gas distribution enterprises, which does not ensure receipt 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 PJSC “Odesagas” facilities.

Following the Regulations on gas supply system safe operation in Ukraine based primarily on safety concerns, at the beginning of the project (2005) PJSC “Odesagas” just detected leaks using detectors with the purpose to avoid emergency and explosions. Measurement of volumes of leaks is not required, and measurement instruments are absent. Theoretical calculations of leaks volume based on executed measurements of natural gas losses as a result of not hermetic shut-down and flanged devices of PJSC «Odesagas» may be equal to 41 mln m^3 per year.

The project activities are reduction of natural gas (methane) leakages that result from leakiness of shut-down, flanged and threaded devices of PJSC “Odesagas” equipment in the total amount of 11 174 pieces. Within the project scope, advanced sealant materials are used for repair of gas equipment. This replaces the current practice of maintenance and repair of networks, namely the use of rubberized asbestos fabric gaskets and cotton fiber stuffing with oil tightening with asbestos-graphite compound resulting in increased leaks and methane emissions into the atmosphere. In addition to methane emission reductions, the project reduces technical natural gas losses (therefore, financial losses), benefits the environment and reduces emergency risks, especially for building gas pressure regulators and above ground gas pipelines.

The project activity includes:

- Implementation and use of purposeful examination and technical maintenance (PETM) of flanged, threaded joints and shut-down devices of PJSC “Odesagas” equipment with the use of modern and the most economically efficient practice, which allows for not only detection of leaking areas, but also determination of leakage volume (i.e., potential volume of gas leakage reduction). This key information is necessary for

substantiation of effectiveness of repair and priority choice of its objects, which is important under short financing for elimination of all leakages. This activity will include purchase of modern measuring equipment, appropriate training of employees, development of monitoring map for each gas plant and gas distribution network with the list of all equipment components to be regularly examined, creation of 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 leakage: the monitoring system of leakages at all flanged, threaded joints and shut-down devices of PJSC "Odesagas" equipment, including eliminated leakages (repaired equipment components). The monitoring is exercised on a regular basis (once per four days or once a week, depending on the type of equipment; once per year for equipment of apartments and buildings) by specially trained personnel. Each component is checked and detected leakages are duly marked with individual number; gas leakage volumes are measured and registered in the database.
- Elimination of all detected leakages: repairs of equipment with leakages within the scope of this project will vary from tightening of block valves and flanges, use of new sealants or compacting materials, to capital repair and replacement of safety valves of pressure regulators, piston rods. Repaired equipment components will be regularly checked as a part of a standard monitoring program to make sure they have not become the source of leakage again.

Duration of the project is not limited, as PETM and monitoring programs are aimed to become a part of work and business practice of PJSC "Odesagas". Reduction of CO_2e emissions is stated for the period of 22 years according to modality and Joint Implementation Mechanism Procedures.

According PDD version 7 the project boundary include the methane leakage places as a result non-hermetic flanged, threaded joints and shut-down devices of gas distribution pipeline in Odessa and Odessa region. Total project boundary was included 11174 shut-down devices. During 2005 to the beginning of the reporting periodframe of project was an off-planed repaired and changed shut-down device. During monitoring period was off-schedule repaired and changed all shut down devices. For the period from the beginning of the project implementation (2005) to the beginning of the reporting period all shut-down devices included in the project boundary were repaired and replaced.

Scope of the period-based repairs and replacements of shut-down devices of gas distribution networks is presented in Table 2:

Table 2 Number of repaired (replaced) shut-down devices under the project per years

Year	Quantity of repaired (changed) shut-down devices
2005	5 832
2006	3 312
2007	529
2008	752
2009	566
2010	174
2011	9
Total	**11 174**

The project activities for the current monitoring period (01/11/2012-31/12/2012) are further carrying out of purposeful examination and technical maintenance (PETM) of all gas equipment of gas distribution networks, which was repaired (hermetically sealed) and replaced during all JI project operation time.

Repaired (hermetically sealed) and replaced in previous periods shut-down devices are regularly checked as a part of a standard monitoring program to make sure they have not become the source of leakage again. According to the Monitoring Plan in the PDD version 07 the regular repairs of gas equipment are done once per year, technical maintenance – once per half year.

Methane leakage volumes from the repaired (replaced) shut-down devices of PJSC “Odesagas” received in the result of monitoring measurements do not exceed the methane leakage volumes, which were measured after the first repair of the devices.

The project was in operation throughout the monitoring period - from 01/11/2012 to 31/12/2012.

Identified problem areas of the project implementation, project participants answers and conclusions of Bureau Veritas Certification are described in Annex A to this report (see CAR 01, CAR 02, CAR 03).

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 gas leakage for each leakage found, gas temperature and pressure, volume of capacity, the concentration of methane in the sample, time for 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 the sphere of gas transportation and supply, 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 measuring equipment - gas analyzer “EX-TEC® SR5”, stop-watch timer "SOS pr-2b-2”, mercury glass thermometer of TL-4 type, flow meter, manometer “D-59N-100-1.0 6kPa”; information from manufacturers and IPCC 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 is clearly identified 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 compliance of monitoring plan with monitoring methodology, project participants answers and conclusions of Bureau Veritas Certification are described in Annex A to this report (see CL 01).

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.
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:
1) Measurements of methane leakage value before the rehabilitation (hermetization) of the facility;
2) Measurements of methane leakage value after the rehabilitation (hermetization) of the facility;
3) Archiving and processing of obtained results.

To measure leakage volume of natural gas it was decided to use 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”. One of the problems incurred by using this method is difficult accounting of the volume of the fittings where measurements are done, and the initial air volume when 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 (0.87 m^3), package, plastic hose and manometer. All joints are made in a hermetical manner.

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.

Collection and processing of parameters, coordination of work of all departments and services of PJSC “Odesagas” related to the project implementation is done by specially created Working team. The structure of the Working team is shown in the Figure 1.

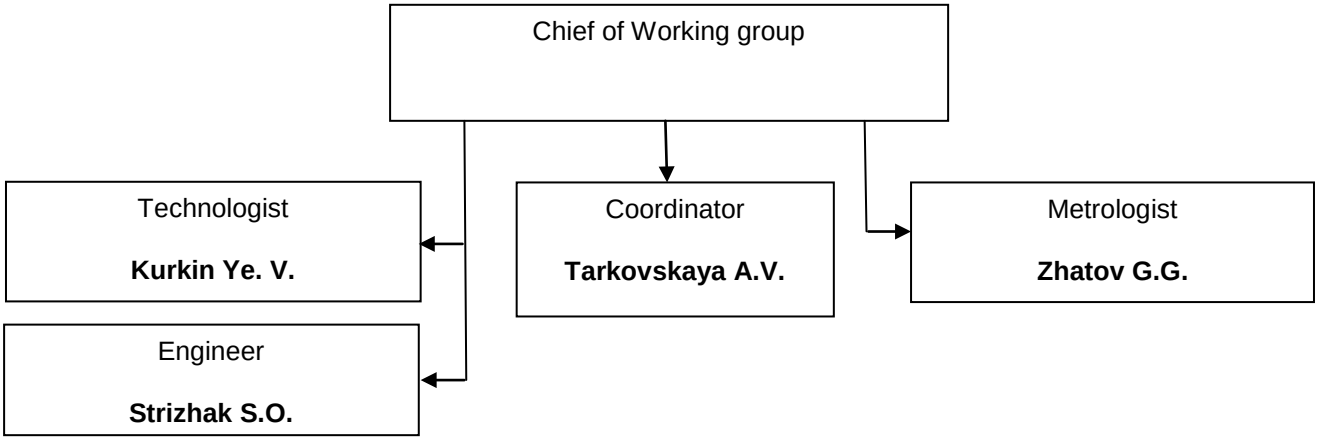

Figure 1 Structure of the Working team

Kurkin Ye.V. are responsible for collection of all information provided by the monitoring plan and execution of all necessary calculations. Archiving of all obtained information as a result of conducted measurements and calculations shall be made under the direction of Tarkovskaya A.V. On the basis of obtained information the chief of task group (Ljudkovskiy V.O.) shall determine the plan of measures as regards the JI Project and volume of necessary resources. Strizhak C.O. are responsible for organization of leakages measurements and its removal. Zhatov G.G. are providing the presence of certificated measurement equipment during JI Project execution.

Regular maintenance of shut-down devices of PJSC “Odesagas” gas distribution networks is carried out once per year, technical maintenance - once per half year.

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.

3.7 Verification regarding programs of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 9th periodic verification of the "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment" Project for the period of November1, 2012-December 31, 2012, 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.

PJSC "Odesagas" management is responsible for the preparation of data which serve as the basis for estimation of GHG emission reductions. CEP VEMA S.A. provides PJSC "Odesagas" with consultative support in the issues relating to organization of data collection and is responsible for developing the monitoring report based on the Project Monitoring Plan included in the final PDD version 07.

Bureau Veritas Certification verified the Project Monitoring Report version 02 for the reporting period 01/11/2012-31/12/2012 as indicated below. Bureau Veritas Certification confirms that the project is implemented as per approved PDD version. 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 01/11/2012 to 31/12/2012
Baseline emissions : 107 803 t CO_2 equivalents;
Project emissions : 2 772 t CO_2 equivalents;
Emission Reductions : 105 031 t CO_2 equivalents.

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 "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment" JI Project, version 07, dated April 30, 2010
/2/	Determination Report of "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment" JI Project, issued by Bureau Veritas Certification Holding SAS dated May 15, 2010
/3/	Monitoring Report of "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment" JI Project, version 01, dated January 16, 2013
/4/	Monitoring Report of "Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment" JI Project, version 02, dated February 07, 2013
/5/	Appendix A. Calculations of GHG emission reduction at flanged, threaded joints and shut-down devices of PJSC "Odesagas" equipment during 2 months (from the 1st of November to the 31st of December) of 2012
/6/	Letter of Approval №737/23/7 dated 07/06/2010 issued by the National Environmental Investment Agency of Ukraine
/7/	Letter of Approval №1602/1102-0041 dated 01/06/2010 issued by the Danish Energy Agency, the Danish Ministry of Climate and Energy)

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

/1/	Instruction for exploitation of gas-analyzer EX-TEC® SR5
/2/	Appearance of gas-analyzer EX-TEC® SR5
/3/	Calibration certificate of gas-analyzer EX-TEC® SR5
/4/	Appearance of thermometer TL-4
/5/	Passport of thermometer TL-4
/6/	Stop-watch timer with passport TL-4
/7/	Manual of barometer D-59H-100-1.0 6 kPa

/8/	The device of measuring leakage in operation
/9/	Gauge D-59-N
/10/	Working gas analyzer
/11/	General appearance of GDP
/12/	Output latch at GDP
/13/	Staff gauge at GDP
/14/	Regulator of gas flow at GDP
/15/	Maintenance logbook of GDP
/16/	The form of leakage records
/17/	Metering Device Calibration Certificate No. 80195/24 (EX-TEC® SR5), dated 23/03/2013
/18/	Metering Device Calibration Certificate No. 80319/26 (EX-TEC® SR5), dated 23/03/2013
/19/	Passport of barometer-aneroyd metrology BAMM-1
/20/	Metering Device Calibration Certificate No. 73 (BAMM-1), dated May, 2012
/21/	Metering Device Calibration Certificate No. 72 (BAMM-1), dated May, 2012
/22/	Metering Device Calibration Certificate No. 10215-P (stop-watch timer 'SOS pr-2b-2'), dated 23/04/2012
/23/	Metering Device Calibration Certificate No. 2001- tt (mercury glass thermometer of TL-4 type), dated 07/10/2011

Persons interviewed:

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

	Name	Organization	Position
/1/	Gerasymenko V.O.	PJSC "Odesagas"	Executive director

/2/	Ljudkovskiy V.O.	PJSC “Odesagas”	Head of production and technical department
/3/	Tarkovskaya A.V.	PJSC “Odesagas”	Engineer of control group
/4/	Kurkin Ye. V.	PJSC “Odesagas”	Engineer of production and technical department
/5/	Strizhak S.O.	PJSC “Odesagas”	Head of SEUG and DV
/6/	Zhatov G.G.	PJSC “Odesagas”	Deputy Head of the metrological service
/7/	Belov E.V.	“CEP” LLC	Consultant of VEMA

ANNEX A: VERIFICATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

JI PROJECT VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the NFPs 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 has been approved by both the Host party and the other Party involved. The Letters of Approval were issued by NFPs of the Parties involved. Two 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?	Yes, the project has been implemented in accordance with the PDD, which is listed on the UNFCCC JI website. The project activities are reduction of natural gas (methane) leakage that results	**CAR 01** **CAR 02** **CAR 03**	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		from leakiness of shut-down, flanged and threaded devices of PJSC "Odesagas" equipment in the total amount of 11 174 pieces. Within the project scope, advanced sealant materials will be used for repair of gas equipment. This replaces the current practice of maintenance and repair of networks, namely the use of rubberized asbestos fabric gaskets and cotton fiber stuffing with oil tightening with asbestos-graphite compound resulting in increased leaks and methane emissions into the atmosphere. In addition to methane emission reductions, the project reduces technical natural gas losses (therefore, financial losses), benefits the environment and reduces emergency risks, especially for building gas pressure regulators and above ground gas pipelines. **CAR 01.** The version of determinated PDD is incorrect in Section A.6. of MR. **CAR 02.** The name of used methodology is incorrect in Section A.5.1. of MR. **CAR 03.** The version of used methodology is incorrect in Section B.2.3. of MR.		
93	What is the status of operation of the project during the monitoring period?	The Project was operational for the whole monitoring period, which is 01/11/2012 –	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		31/12/2012.		
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, the monitoring was carried out 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.	OK	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?	To calculate the emission reductions such key factors as the rate of gas leakage for each leakage found, gas temperature ands pressure, volume of capacity, the concentration of methane in the sample, the time for 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 the sphere of gas transportation and supply, 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.	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, manometer “D-59N-100-1.0 6kPa”; information from manufacturers and IPCC are clearly identified, reliable and transparent. **CL 01.** Please provide documentation on calibration of measuring equipment.	**CL 01**	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.	OK	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?	Calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the 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?	N/a	N/a	N/a
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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	with those for which verifications were already deemed final in the past?			
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	N/a	N/a
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?	Yes, the implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	Yes, the function of the monitoring equipment, including its calibration status is in order.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	Yes, the evidence and records used for the monitoring are maintained in a traceable manner	OK	OK
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.	OK	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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	included JPA, has the AIE informed the JISC of its findings in writing?			
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI Project. 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;	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	− 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
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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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

Clarification and corrective action requests issued by the verification team	Ref to checklist question in Table 1	Summary of project participant's response	Verification team conclusion
CAR 01. The version of determinated PDD is incorrect in Section A.6. of MR.	92	The version of determinated PDD is 07. Appropriate changes were mede in Section A.6. of MR version 02.	The issue is closed based on the changes made.
CAR 02. The name of used methodology is incorrect in Section A.5.1. of MR.	92	The name of used methodology is "Leak reduction from natural gas pipeline compressor or gate stations". Appropriate changes were mede in Section A.5.1. of MR version 02.	The issue is closed based on the changes made.
CAR 03. The version of used methodology is incorrect in Section B.2.3. of MR.	92	The version of used methodology is 03. Appropriate changes were mede in Section B.2.3. of MR version 02.	The issue is closed based on the changes made.
CL 01. Please provide documentation on calibration of measuring equipment.	95 (b)	Relevant documentation is provided to verification teem	The issue is closed based on provided documentation.