VERIFICATION REPORT
VEMA S.A.

VERIFICATION OF THE JI PROJECT

RECONSTRUCTION OF WATER SUPPLY AND DRAINAGE SYSTEM "LUGANSKVODA LTD."

6TH PERIODIC
FOR THE PERIOD OF 01/01/2012 – 31/05/2012

REPORT NO. UKRAINE-ver/0543/2012

REVISION NO. 01

BUREAU VERITAS CERTIFICATION

Date of first issue: 06/06/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: VEMA S.A.	Client ref.: Fabian Knodel

Summary:

Bureau Veritas Certification has made the 6th periodic verification for the period of 01/01/2012-31/05/2012 of the JI project "Reconstruction of water supply and drainage system "Luganskvoda Ltd.", project registration reference number UA1000195, project of VEMA S.A. located in Lugansk region, Ukraine, and applying the JI specific approach, 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 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 report against 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 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 (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as per 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 135 975 tonnes of CO_2 equivalent for the monitoring period from 01/01/2012 to 31/05/2012.

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

Report No.: UKRAINE-ver/0543/2012	Subject Group: JI	
Project title: "Reconstruction of water supply and drainage system "Luganskvoda Ltd."		
Work carried out by: Oleh Skoblyk - Team Leader, Climate Change Lead Verifier Kateryna Zinevych - Team Member, Climate Change Verifier		
Work reviewed by: Ivan Sokolov – Internal technical reviewer		
Work approved by: Ivan Sokolov – Climate Change Operational Manager		
Date of this revision: 06/06/2012	Rev. No.: 01	Number of pages: 31

Bureau Veritas Certification Holding SAS

☒ No distribution without permission from the

☐ Limited distribution

☐ Unrestricted distribution

Table of Contents *Page*

1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Reconstruction of water supply and drainage system ”Luganskvoda Ltd.” (hereafter called “the project”) in Lugansk city, 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, 2012 to May 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, monitoring plan, monitoring report 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:

Oleh Skoblyk

Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Kateryna Zinevych

Bureau Veritas Certification Team Member, Climate Change Verifier

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal Technical Reviewer

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 19 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, i.e. country Law, Project Design Document (PDD), Approved CDM methodology, Determination Report of the project issued by Bureau Veritas Certification Holding SAS No. UKRAINE/0138/2010, version 01 dated 04/10/2010, 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 01/01/2012 to 31/05/2012, version 01 as of

June 01, 2012 and version 02 as of June 04, 2012 and the project as described in the determined PDD.

2.2 Follow-up Interviews

On 05/06/2012 Bureau Veritas Certification verification team visited the project implementation site (pumping plants of "Luganskvoda Ltd.") and performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of "Luganskvoda Ltd." 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
"Luganskvoda Ltd."	➢ Organizational structure ➢ Responsibilities and authorities ➢ Roles and responsibilities for data collection and processing ➢ Installation of equipment ➢ Data logging, archiving and reporting ➢ Metering equipment control ➢ Record keeping system, database ➢ IT management ➢ Training of personnel ➢ Quality management procedures and technologies ➢ Internal audits and check-ups
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 Verification Team 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.

The Verification Team will make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the verification.

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 10 Corrective Action Requests, and 2 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 not 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 # 1808/23/7 issued by the National Environmental Investment

Agency of Ukraine dated 09/11/2010, and written project approval by the party – buyer of the emission reduction units (Switzerland) - Letter of Approval # J294-0485 issued by the Federal Office for the Environment (FOEN) of Switzerland dated 26/10/2010.
The project was registered under the reference number UA1000195.
The abovementioned written approvals are unconditional.

The identified areas of concern as to the project approval by the parties involved, project participants responses and Bureau Veritas Certification's conclusions are provided in Appendix A to this report (refer to CAR 01).

3.3 Project implementation (92-93)

The main purpose of the project that is implemented at "Luganskvoda Ltd." is reduction of electric energy consumption by the centralized water supply system in Lugansk region due to reconstruction of the system, which includes replacement and reconstruction of pumping equipment and water distribution networks, installation of frequency regulators and optimization of the technological process of water pumping. The reduction of consumption of the electric energy, which is produced in the power system of Ukraine, will lead to the decrease of fossil fuel combustion for electricity production, and as a result to the greenhouse gas emission reductions (t CO_2). The mission of the project is sustainable development of the city by implementation of energy saving technologies.

The reconstruction measures under the project include:

- Replacement of energy intensive pumps by new energy efficient ones;
- Optimization of the technological process of water pumping;
- Introduction of automatic air valves on water mains for pressure decrease and improvement of discharge capacity;
- Replacement of water-supply networks;
- Installation of a new group of metering devices;
- Introduction of new devices for concealed leak detection;
- Installation of frequency regulators.

The project activity started at the end of 2007 with the first measures on optimization of the technological process of water pumping. Because of the fact that implementation of measures under the project commenced in 2007, which was determined as a baseline year, in view of conservative approach the emission reductions generated due to these measures were not accounted in the project.

Measures, that were implemented in the period of January 1, 2012 – May 31, 2012, are the following:

Table 2 Project implementation progress status in the period of 01/08/2011 – 31/12/2011

№	Project measures	Number of units of works performed for the period 01/01/2012 – 31/05/2012	Starting date of project measure implementation	Expected date of completion of project measure implementation
1	Replacement of pumping equipment	11 units	01/01/2012	31/05/2012

The project measures are mainly implemented according to the implementation schedule presented in the determined PDD ver.02.

Detailed information about implemented measures and installed equipment during the reporting period of January 1, 2012 – May 31, 2012 by departments and divisions is provided in Annex 4 to the Monitoring report.

The starting date of the crediting period did not change and remains the date of the first generated emission reduction units, namely: January 01, 2008.

The Monitoring System is in place and operational.

The monitoring equipment such as electricity meters, water meters are installed and comply with the industrial standards of Ukraine. All monitoring equipment is covered by the detailed verification (calibration) plan and is verified with periodicity, established by its manufacturer.

The project implementation doesn't provide for any negative impacts on the environment. The only impact on the environment is dismantled equipment, which will be further used as secondary material.

"Luganskvoda Ltd." has all necessary reports, permissions, limits and licenses required by Ukrainian legislation, including:

- permit for "Special water use";

- Form 2-TP (water industry), Report on water use;
- Form 11 MTP, Report on the results of fuel, heat energy and electric energy use.

Implementation of this project allows the company to improve servicing of water consumers. Experience of “Luganskvoda Ltd.” employees and adherence to the norms “On drinking water and drinking water supply” allows the company to minimize occurrence of emergency situations in the course of this project implementation.

The identified areas of concern as to the project implementation, project participants responses and Bureau Veritas Certification’s conclusions are provided in Appendix A to this report (refer to CAR 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.

For calculating the emission reductions, key factors such as volume of water to be supplied to the customers, applicable tariffs for water supply and drainage, state policies in potable water and potable water supply sector, experience in implementation of measures planned under the project, existing practice in Ukraine in this sphere, financial costs and experience as well as sectoral reforms policy in the water supply sphere and legislation influencing the baseline emissions and the activity level under the project and the project emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions such as appropriately calibrated metering equipment, the study of carbon dioxide emission factors are clearly identified, reliable and transparent.

Emission factors used for emission reduction calculations were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. Carbon dioxide emission factors (EF) for electricity consumption were set in accordance with Order # 75 of the National Environmental Investment Agency of Ukraine "On approval of carbon dioxide emission factors in 2011" dated 12/05/2011.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.

The monitoring periods per component of the project are clearly specified in the monitoring report and do not overlap with those for which verifications were already deemed final in the past.

The identified areas of concern as to the compliance of the monitoring plan with the monitoring methodology, project participants responses and Bureau Veritas Certification's conclusions are provided in Appendix A to this report (refer to CAR 03, CAR 04, CAR 05, CAR 06, CL 01).

3.5 Revision of monitoring plan (99-100)

The project participants provided an appropriate justification for the proposed revision.

The proposed revision improves the accuracy and 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.

Due to the fact that the original monitoring plan provided for calculation of project and baseline emissions as well as emission reductions on an annual basis, it has been reviewed to allow of the monitoring process on a monthly basis. Formulae to calculate emissions have been adapted to the monitoring period of 1 month instead of 1-year period, which was established in the original monitoring plan specified in the PDD. This allowed of making calculations for 5 months (from January 2012 to May 2012 inclusive). To improve the accuracy of calculations of emission reductions, and to consider the fact that the volume of water supply to some extent depends on the season, the calculation of value of baseline parameter PPER (specific consumption of electricity per unit of water) for each month of 2007 was made, and these historical monthly values were used to determine baseline emissions for each month of the reporting period. New formulae are provided in the Monitoring Report, version 02 as of 04/06/2012.
One more deviation from the original monitoring plan consists in the use of carbon dioxide emission factor for electricity consumption in calculations that was set in accordance with Order # 75 of the National Environmental Investment Agency of Ukraine "On approval of carbon dioxide emission factors in 2011" dated 12/05/2011.

Changes that have been implemented do not affect conservativeness of the approach to the emission reduction calculations and procedures of data collection and archiving.

The Management and Operational Systems are eligible for reliable project monitoring according to the proposed revision.

3.6 Data management (101)

The data and their sources, provided in the monitoring report, are clearly identified, reliable and transparent.

The implementation of data collection procedures is in accordance with the PDD and the revised monitoring plan, including the quality control and quality assurance procedures.

The function of the monitoring of equipment, including its calibration status, is in order.

According to the effective Law "On metrology and metrological activity" all metering equipment in Ukraine shall conform to stated requirements of corresponding standards and is subject to periodic calibration. Flow meters were calibrated by Lugansk Center of Meter Standardization, Metrology and Certification. Verification of commercial electricity meters of “Luganskvoda Ltd.” was executed by SE Luganskstandardmetrology. The project complies with legal requirements to the calibration and verification.

The actual data and records used for the monitoring are maintained in a traceable manner.
The data collection and management system for the project is in accordance with the PDD and the revised monitoring plan.

The project and baseline emissions subject to monitoring relate to the electricity consumption by the pumping equipment used for water transportation as this is the only emission source related to the project. The baseline emissions are determined based on historical value of specific electricity consumption per water unit for each month of 2007 (considered as a baseline year) and actual monitored value of water amount supplied to consumers in the reporting period.

The monitoring procedure provides for:

1) Control of electricity consumption by “Luganskvoda Ltd.”;
2) Control of water lifted by “Luganskvoda Ltd.”.

Parameters which are subject to monitoring are metered for each separate water supply system (19 separate sub departments are united into 13 independent water supply systems).

Based on the obtained data that are subject to metering and control “Luganskvoda Ltd.” prepares the following documents:

- Electricity consumption report under the form 11-MTP, that is signed by “Luganskvoda Ltd.” director and submitted to Lugansk regional state administration;

- Report 2-TP (water industry) is made on the basis of monthly statements and is submitted every three, six and twelve months to the Lugansk Administration of Water Resources. Payment for water transferred to consumers is made according to such report.

"Luganskvoda Ltd." collects and keeps the data relating to electric energy consumed and acquired water for water-supply in the forms of electric energy and acquired water bills.
Monitoring data collection at "Luganskvoda Ltd." is carried out as follows:

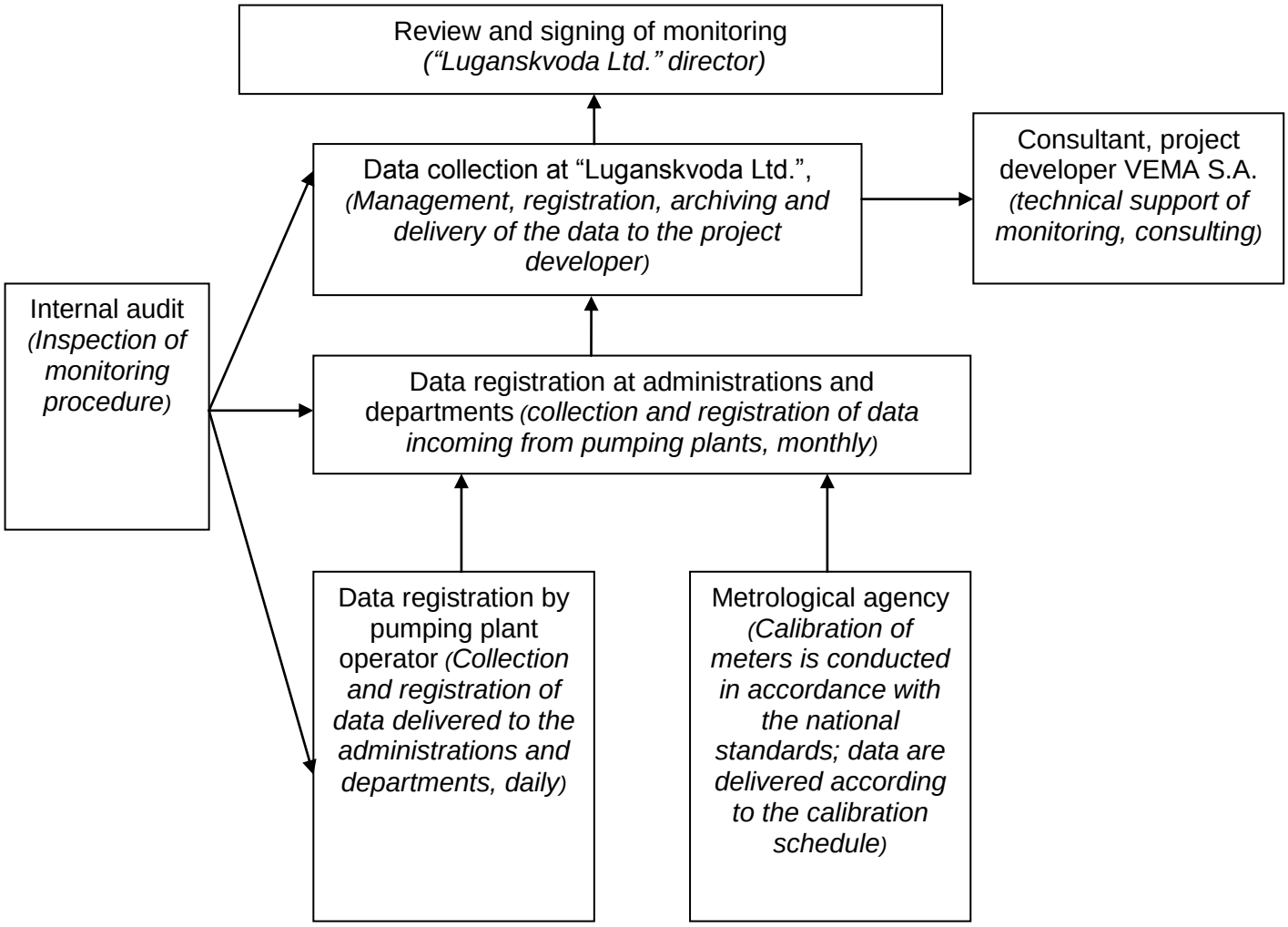

Figure 1 Structure of monitoring data collection

All necessary information for monitoring of GHG emission reductions is stored in paper or/and electronic formats and will be saved till the end of the crediting period and for two years after the last operation with ERUs generated by the project.

The Monitoring Report version 02 provides sufficient information on the assigned roles, responsibilities and authorities for implementation and maintenance of monitoring procedures including data management. The verification team confirms effectiveness of the existing management and operational systems and found them eligible for reliable project monitoring.

The identified areas of concern as to the data management, project participants responses and Bureau Veritas Certification's conclusions are provided in Appendix A to this report (refer to CAR 07, CAR 08, CAR 09, CAR 10, CL 02).

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 6th periodic verification for the period of January 1, 2012 – May 31, 2012 of the "Reconstruction of water supply and drainage system "Luganskvoda Ltd." project in Ukraine, which applies 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 monitoring report against 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 Plan indicated in the final PDD version 02 and the revised monitoring plan. The development and maintenance of records and reporting procedures are 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 January 1, 2012 – May 31, 2012 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.

The ex-post volume of water lifted in the project months (that is used to calculate the baseline emissions) and the amount of electricity consumed in the project months (that is used to calculate project emissions) obtained as a result of project monitoring differ from the values that were specified in the PDD. This happened due to the fact that during the development of PDD ex-ante values of the plan for the period of 2012 were provided and it was impossible to accurately determine them prior to the project. The difference between ex-ante and ex-post values of these two parameters also resulted in differences in the number of estimated and actually received emission reductions from the project.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or 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, with a reasonable level of assurance, the following statement:

Reporting period: From 01/01/2012 to 31/05/2012

Baseline emissions	: 245 712	tonnes of CO_2 equivalent.
Project emissions	: 109 737	tonnes of CO_2 equivalent.
Emission Reductions	: 135 975	tonnes of CO_2 equivalent.

5 REFERENCES

Category 1 Documents:
Documents provided by project participants that relate directly to the GHG components of the project.

/1/	Monitoring Report of JI project "Reconstruction of water supply and drainage system "Luganskvoda Ltd." for the period from 01/01/2012 to 31/05/2012, version 01, dated June 01, 2012
/2/	Monitoring Report of JI project "Reconstruction of water supply and drainage system "Luganskvoda Ltd." for the period from 01/01/2012 to 31/05/2012, version 02, dated June 014, 2012
/3/	Annex 1 to Monitoring Report "Parameters of the Monitoring Plan"
/4/	Annex 2 to Monitoring Report "Project and monitoring equipment" (Excel file)
/5/	Annex 3 to Monitoring Report "Calculation of GHG emission reductions due to electric energy saving in the water supply and drainage systems of "Luganskvoda Ltd." (Excel file)
/6/	Annex 4 to Monitoring Report "Measures that were implemented under the project" (Excel file)
/7/	Annex 5 to Monitoring Report "Monitoring values of the parameters used for GHG emissions calculation" (Excel file)
/8/	PDD "Reconstruction of water supply and drainage system "Luganskvoda Ltd.", version 02 dated 04/10/2010
/9/	Determination Report issued by Bureau Veritas Certification Holding SAS No. UKRAINE/0138/2010 "Reconstruction of water supply and drainage system "Luganskvoda Ltd.", version 01 dated 04/10/2010
/10/	Letter of Approval of the joint implementation project "Reconstruction of water supply and drainage system "Luganskvoda Ltd." #1808/23/7 issued by the National Environmental Investment Agency of Ukraine dated 09/11/2010.
/11/	Letter of Approval of the project under article 6 of the Kyoto protocol (JI) "Reconstruction of water supply and drainage system "Luganskvoda Ltd." # J294-0485 issued by the Federal Department on the Environment (FOEN) of Switzerland dated 26/10/2010

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

/1/	Report on electricity consumption at "Luganskvoda Ltd." in 2012

/2/	Equipment commissioning certificate dated 10/05/2012 (pump 300-LNN-750)
/3/	Equipment commissioning certificate dated 17/02/2012 (pump S252 B/1, frequency converter)
/4/	Equipment commissioning certificate dated 17/02/2012 (submerged pump SaerFP-98E/13)
/5/	Equipment commissioning certificate dated 04/04/2012 (pump NR 151 E/8, frequency converter Kaskad PCh 15)
/6/	Equipment commissioning certificate dated 23/03/2012 (submerged pump SaerNP-E/24)
/7/	Equipment commissioning certificate dated 23/03/2012 (pump NR 151 E/11, frequency converter Kaskad PCh 110)
/8/	Equipment commissioning certificate dated 23/03/2012 (pump NR595E/24, frequency converter Kaskad PCh 55)
/9/	Equipment commissioning certificate dated 23/03/2012 (pump NR 201 C/3)
/10/	Equipment commissioning certificate dated 24/01/2012 (pump NR 201 C/3)
/11/	Equipment commissioning certificate dated 24/01/2012 (pump S 181 B/4)
/12/	Equipment commissioning certificate dated 24/01/2012 (pump S 181 B/4)

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

#	Name	Organization	Title
/1/	Anchyshkin A.H.	“Luganskvoda Ltd.”	Head of energy and mechanical services
/2/	Tsyhoiev A.M.	“Luganskvoda Ltd.”	Chief power engineering specialist
/3/	Tkachenko O.M.	“Luganskvoda Ltd.”	Deputy chief power engineering specialist
/4/	Pavlenko E.M.	“Luganskvoda Ltd.”	Engineer

/5/	Movchan S.V.	“Luganskvoda Ltd.”	Head of Production and Technical Department
/6/	Shynhareva I.I.	“Luganskvoda Ltd.”	Hydro geologist
/7/	Slieta U.N.	“Luganskvoda Ltd.”	Lead engineer
/8/	Ivanova H.V.	“Luganskvoda Ltd.”	Lead engineer
/9/	Priadko V.B.	“Luganskvoda Ltd.”	Head of Slavianoserbsk division
/10/	Vandin A.I.	“Luganskvoda Ltd.”	Operator of Slavianoserbsk pumping plant
/11/	Mozhniakov D.N.	“Luganskvoda Ltd.”	Chief Engineer of Lutuhinskyi division
/12/	Priadko V.B.	“Luganskvoda Ltd.”	Head of Krasnolymanska pumping plant
/13/	Kashyntsev A.V.	“Luganskvoda Ltd.”	Operator of Krasnolymanska pumping plant
/14/	Didenko A.P.	“Luganskvoda Ltd.”	Head of Slavianoserbsk pumping plant of the third lift
/15/	Bashlakova S.L.	“Luganskvoda Ltd.”	Operator of Slavianoserbsk pumping plant
/16/	Artsev A.V.	“Luganskvoda Ltd.”	Head of Slavianoserbsk lift of pumping plant of the fourth lift
/17/	Shchetynina I.V.	“Luganskvoda Ltd.”	Operator of Slavianoserbsk pumping plant
/18/	Apostolaka S.B.	“CEP” LLC	JI Consultant of VEMA S.A.
/19/	Vorobiov Ye.V.	“CEP” LLC	JI Consultant of VEMA S.A.

APPENDIX A: COMPANY PROJECT 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 DFPs 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 Host Party (Ukraine) and the party – buyer of the emission reduction units (Switzerland). The Letters of Approval were issies by DFPs of Parties involved. Both Letters of Approval were available as of the start of the first verification. **CAR 01.** Name of the authority which issued the Letter of Approval from Ukraine is stated incorrectly.	**CAR 01**	OK
91	Are all the written project approvals by Parties involved unconditional?	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?	The ex-post volume of water lifted in the project months (that is used to calculate the baseline emissions) and the amount of electricity consumed in the project months (that is used to calculate project emissions) obtained as a result of project monitoring differ from the	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		values that were specified in the PDD. This happened due to the fact that during the development of PDD ex-ante values of the plan for the period of 2012 were provided and it was impossible to accurately determine them prior to the project. The difference between ex-ante and ex-post values of these two parameters also resulted in differences in the number of estimated and actually received emission reductions from the project.		
93	What is the status of operation of the project during the monitoring period?	Mainly the project measures are implemented according to the implementation schedule. During the implementation of the reconstruction and modernization activities at "Luganskvoda Ltd." Pumping plants there were minor deviations from the project, namely: - Change of power of installed pumps. This was due to the change of volume of water which must be provided to consumers. **CAR 02.** Please, provide information regarding implementation status of activities in the monitoring period in the MR.	**CAR 02**	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?	Due to the fact that the original monitoring plan provided for calculation of project and baseline emissions as well as emission reductions on an annual basis, it has been reviewed to allow of the monitoring process on a monthly basis. Formulae to calculate emissions have been adapted to the monitoring period of 1 month instead of 1-year period, which was	**CL 01** **CAR 03**	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		established in the original monitoring plan specified in the PDD. **CL 01.** Please, provide a link to NEIAU Order No. 75 in Section A.8. **CAR 03.** Please, provide data units for EF parameter in the description of the formulae in Section A.8.		
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?	For calculating the emission reductions, key factors such as volume of water to be supplied to the customers, applicable tariffs for water supply and drainage, state policies in potable water and potable water supply sector, experience in implementation of measures provided by the project, existing practice in Ukraine in this sphere, financial costs and experience, sectoral policies of reforms in the water supply sphere and legislation influencing the baseline emissions, the activity level of the project and the project emissions as well as risks associated with the project were taken into account, as appropriate.	OK	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Yes, data sources used for calculating emission reductions are clearly identified, reliable and transparent. **CAR 04**. Total values of pumped water and consumed electricity in the reporting period (01/01/2012 - 31/05/2012) for each department and section of "Luganskvoda Ltd." are calculated incorrectly. Please, recalculate the values. **CAR 05**. In Table 11 of the MR Section D.1.3. Incorrect data on electricity consumption are stated. Please,	**CAR 04** **CAR 05** **CAR 06**	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		state the correct data. **CAR 06**. In Annex 1 to the MR values of $M^3_{i,b}$ and $kWh_{b,i}$ are provided for a 12 month period of 2007, while the monitoring period covers only 5 months (01/01/2012-31/05/2012). Please delete unnecessary information.		
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, if used for calculating the emission reductions, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. In calculations carbon dioxide emission factor for electricity consumption in accordance with Order # 75 of the National Environmental Investment Agency of Ukraine "On approval of carbon dioxide emission factors in 2011" dated 12/05/2011 was used.	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
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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?	In the course of the 6th monitoring period (01/01/2012 – 31/05/2012) the original monitoring plan described in the registered PDD version 02 was changed by the project participants. The deviations relate to the periodicity of the emission reduction calculation which was changed from a year to a month in order to allow	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		of the five-month monitoring process (from January 1, 2012 to May 31, 2012). Relevant justification has been provided in Section A.8 of the Monitoring Report.		
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?	The proposed revision improves the accuracy and 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.	OK	OK
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 07.** Please, provide data about emergency situations in the monitoring period. **CAR 08.** Please, provide information on the possible personnel training planned under the project activity.	**CAR 07** **CAR 08**	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. According to the effective Law of Ukraine "On metrology and metrological activity" all metering devices in Ukraine shall conform to stated requirements of corresponding standards and be calibrated periodically. Flow meters were calibrated by	**CAR 09**	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Lugansk Centre of Meter Standardization, Metrology and Certification. Verification of commercial electrical meters of "Luganskvoda Ltd." was executed by SE "Luganskstandardmetrology". The project complies with legal requirements to the calibration and verification. **CAR 09.** Please, provide information on the level of error of measurement equipment used in the monitoring period.		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records used for the monitoring are maintained in a traceable manner. «Luganskvoda Ltd.» collects and keeps the data relating to electric energy and acquired water for water-supply in the forms of electric energy and acquired water bills. All information necessary for monitoring of GHGs emission reductions is stored in paper or/and electronic formats and will be kept till the end of the crediting period and for two years after the last transaction with ERUs from the project. **CAR 10.** Please, provide documentary evidence regarding the data and records used for the monitoring.	**CAR 10**	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 for the project is in accordance with the monitoring plan. The verification team confirms effectiveness of the existing management and operational systems and found them eligible for reliable project monitoring. **CL 02.** Please, check the numbering of the Tables and Figures in the MR.	**CL 02**	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	JI PoA not verified?			
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: (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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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
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	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			

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. Name of the authority which issued the Letter of Approval from Ukraine is stated incorrectly.	90	The project obtained approval by Ukraine (the Host party) in November 2010 (Letter of Approval # 1808/23/7 issued by the National Environmental Investment Agency of Ukraine dated 09/11/2010). Relevant corrections were made in the latest MR version.	The issue is closed based on making appropriate corrections.
CAR 02. Please, provide information regarding implementation status of activities in the monitoring period in the MR.	93	During the monitoring period (01/01/2012-31/05/2012) 11 units of pumping equipment were replaced. Relevant information is provided in Section A.6. in the latest MR version.	The issue is closed based on provision of relevant information.
CAR 03. Please, provide data units for EF parameter in the description of the formulae in Section A.8.	94	EF - Carbon dioxide emission factors for electricity consumption set in accordance with Order # 75 of the National Environmental Investment Agency of Ukraine "On approval of carbon dioxide emission factors in 2011" dated 12/05/2011, t CO_2/MWh.	The issue is closed based on provision of necessary information.

CAR 04. Total values of pumped water and consumed electricity in the reporting period (01/01/2012 - 31/05/2012) for each department and section of "Luganskvoda Ltd." are calculated incorrectly. Please, recalculate the values.	95(b)	Recalculation was carried out. Refer to Section B.2.1. of the MR version 02.	The issue is closed based on making appropriate corrections.
CAR 05. In Table 11 of the MR Section D.1.3. Incorrect data on electricity consumption are stated. Please, state the correct data.	95(b)	Correct data on electricity consumption are stated in updated Table 11 of the MR.	The issue is closed based on provision of correct data.
CAR 06. In Annex 1 to the MR values of $M^3_{i,b}$ and $kWh_{b,i}$ are provided for a 12 month period of 2007, while the monitoring period covers only 5 months (01/01/2012-31/05/2012). Please delete unnecessary information.	95(b)	Unnecessary information was deleted. Values of $M^3_{i,b}$ and $kWh_{b,i}$ are provided for a 5 month period.	The issue is closed based on deleting unnecessary information.
CAR 07. Please, provide data about emergency situations in the monitoring period.	101(a)	There were no emergency situations at “Luganskvoda Ltd.” in the 5-month period from January 1, 2012 to May 31, 2012 inclusive. Relevant information is provided in Section B.4 of the MR version 02.	The issue is closed based on provision of relevant information.
CAR 08. Please, provide information on the possible personnel training planned under the project activity.	101(a)	Since the main activity of "Luganskvoda Ltd." has not changed in the process of the JI project implementation, special technical training for staff is not needed. Technical personnel of the enterprise has the appropriate knowledge and expertise for the project implementation and regular repair of equipment. Refer to Section C.1.2. of the MR version 02.	The issue is closed based on provision of relevant information.

CAR 09. Please, provide information on the level of error of measurement equipment used in the monitoring period.	101 (b)	Basically, this level is low. Electricity meter deviations is kept at the level that is not higher than 0.5%. Commercial electricity metering devices that were installed at "Luganskvoda Ltd." meet the criteria specified above. The level of deviation of water flowmeters is maintained at the level that is not higher than 2%. Automatic water accounting devices that are established at "Luganskvoda Ltd." meet the criteria specified above. Refer to Section B.7. of the MR version 02.	Relevant information was provided, the issue is closed.
CAR 10. Please, provide documentary evidence regarding the data and records used for the monitoring.	101 (c)	All necessary documents are provided to the Verification team.	The issue is closed based on provision of documentary evidence.
CL 01. Please, provide a link to NEIAU Order No. 75 in Section A.8.	94	Baseline, project emissions and GHG emission reductions are presented in Table 14 of the Monitoring report, version 02.	CL 01 is closed based on provided information.
CL 02. Please, check the numbering of the Tables and Figures in the MR.	101 (d)	Relevant corrections were made in the MR version 02.	Numbering of tables and figures was checked, the issue is closed.