VERIFICATION REPORT
ING BANK N. V.

VERIFICATION OF THE
"UTILIZATION OF COAL MINE METHANE AT THE COAL MINE SUKHODILSKA-SKHIDNA"

REPORT NO. UKRAINE-VER/0636/2012

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Date of first issue:	Organizational unit:
20/09/2012	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
ING BANK N.V.	Stephen Hibbert

Summary:

Bureau Veritas Certification has made the 3rd periodic verification of the "Utilization of Coal Mine Methane at the Coal Mine Sukhodilska-Skhidna", JI Registration Reference Number UA100003, project of PJSC "Krasnodon Coal" located in in the Krasnodon region of the Luhansk oblast which is situated in the eastern part of Ukraine, and applying the methodology ACM0008 version 04, 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 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 Action Requests, Forward Action Requests (CL, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design document. 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 GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 63652 tonnes of CO_2 equivalent for the monitoring period from 26/07/2010 to 30/06/2012.

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

Report No.:	Subject Group:
Ukraine-ver/0636/2012	JI

Project title:
"Utilization of Coal Mine Methane at the Coal Mine Sukhodilska-Skhidna"

Work carried out by:
Svitlana Gariyenchyk - Team Leader, Lead Verifier
Sergii Verteletskyi – Team member, Verifier
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Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

ING BANK N.V. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "Utilization of Coal Mine Methane at the Coal Mine Sukhodilska-Skhidna" (hereafter called "the project") at Krasnodon region of the Luhansk oblast which is situated in the eastern part of 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.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity 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 and 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:

Svitlana Gariyenchyk Bureau Veritas Certification	Team Leader, Climate Change Verifier
Sergii Verteletskyi Bureau Veritas Certification	Climate Change Verifier
Dmytro Balyn	Technical Specialist

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Vladimir Lukin 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 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 Global Carbon B.V. and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Approved CDM methodology , Host party criteria, 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 version(s) 02 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 28/08/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Global Carbon B.V. and lease enterprise "Sukhodilska-Skhidna Coal Mine" were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Lease enterprise "Sukhodilska-Skhidna Coal Mine"	– Project implementation status – Organizational structure – Responsibilities and authorities – Personnel training – Quality management procedures and technology – Records of equipment installation – Control of metering equipment – Metering record keeping system, database – Cross-check of the information provided in the MR with other sources
Global Carbon B.V.	– Baseline methodology – Monitoring plan – Monitoring report – Deviations from 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 actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction 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, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 15 Corrective Action Requests, 04 Clarification Requests, and 0 Forward Action 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

FAR 01 (from previous verification). In order to meet the JISC requirements on data saving and archiving, an Order on archiving of all project related documentation for two years after the last ERU transmission should be developed and included to the Emission Monitoring Manual. All persons responsible for data collection and monitoring should be aware of the provisions of this Order.

Conclusion for FAR01: During site visit the new version of Emission Monitoring Manual (hereafter called “EMM”) has been presented to the AIE as supporting document. Page # 9 of the EMM closes the JISC requirements on data saving and archiving, thus FAR01 is closed.

FAR 02 (from previous verification). The training plans and procedures should be described in Monitoring Manual.

Conclusion for FAR02: During site visit the new version of EMM has been presented to the AIE as supporting document. Page # 11 of the EMM includes data training plans and procedures, thus FAR02 is closed.

FAR 03 (from previous verification). Job descriptions and working instructions for data collection should be part of the monitoring manual.

Conclusion for FAR03: During site visit the new version of EMM has been presented to the AIE as supporting document. Page # 9 of the EMM includes job descriptions and working instructions for data collection, thus FAR03 is closed.

FAR 04 (from previous verification). In monitoring manual a specific frequency of crosschecking and the staff responsible for this must be provided.

Conclusion for FAR04: During site visit the new version of EMM has been presented to the AIE as supporting document. Page # 9 of the EMM includes job descriptions and working instructions for data collection, thus FAR04 is closed.

3.2 Project approval by Parties involved (90-91)

Written project approvals by the Netherlands and Ukraine have been issued by the DFPs of those Parties when submitting the first verification report for registration. (They are listed among Category 1 Documents in the Reference section of this report)

The abovementioned written approval is unconditional.

3.3 Project implementation (92-93)

The purpose of this project is to decrease the methane emissions into the atmosphere at the Coal Mine “Sukhodilska-Skhidna”. There are three sources of the Coal Mine Methane (CMM) emissions at the Mine: from the surface wells, through the underground drainage system and from ventilation. Only the surface well CMM is considered. The CMM, produced by the surface wells at Sukhodilska, is used to replace heat previously produced by the coal boilers. After the project implementation two CMM fired boilers supply heat to the mine. The existing on-site coal boilers (except one for emergency reasons) were shut down.
The boiler house is constructed according to standard parameters and conditions. The designing documents were completed at the end of 2005. The assembly and installation of one new CMM boiler replacing existing coal boilers started in the beginning of 2006. Commissioning and pre-launch adjustments were carried out during the winter-summer of 2006. During this testing period, new boiler supplied heat and hot water to the mine. The official put into operation of the first boiler took place on the 7th of August 2006. The second CMM boiler started operation in November 2011. The Complex testing of second boiler was carried out 15-19 November 2011. As per conclusion of the Complex testing, the boiler

and its auxiliary equipment operate without faults, the further exploitation is permitted.

Status of implementation including time table for major project parts:

Implementation plan of the project

Activity	Date
Installation and testing of the new CMM fuelled boiler	January 2006-July 2006
Decommissioning of two coal fired boilers	June 2006
Commissioning of one new CMM fired boiler	August 7, 2006
Commissioning of the second CMM fired boiler	November 2011

Since the last verification new CMM boiler has been implemented in November 2011.

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, key factors, such as CEF for methane, amount of combusted and un-combusted methane, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions, such as methane flow meters, temperature meters and pressure meters are clearly identified, reliable and transparent. All measuring equipment is calibrated as per calibration schedule.

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.

3.5 Revision of monitoring plan (99-100)

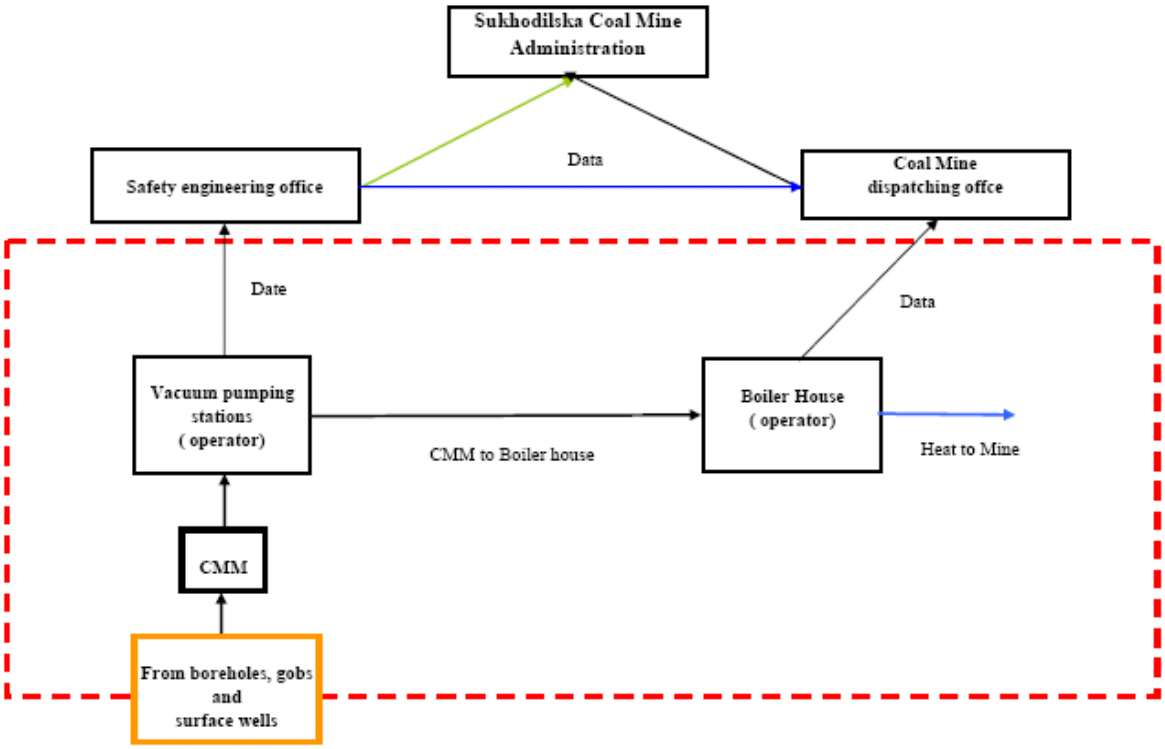
Not applicable

3.6 Data management (101)

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

The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. These procedures are mentioned in the section “References” of this report.

Data collection procedure is described below:



The general project management is implemented by the Coal Mine Director: Melnik S.A. through supervising and coordinating activities of his subordinates, such as Chief engineer, Leading engineer for JI projects, Chief of gas safety unit, chief power engineer, and chief heating engineer. On-site day-to-day management is implemented by the chief heating engineer, chief of the boiler-house and two shift operators responsible for boiler-house performance. A special technician is responsible for preventive measures and maintenance of all technological equipment, measuring instruments as well as of automation tools. On-line information is transmitted directly to the head of the boiler-house shift. The boiler-house is in 24 hours operation. Three shifts by eight hours have been established.

Main responsibilities are divided as follows:

- VPS operator controls data before VPS and after VPS including CMM flow parameters;
- Two boiler-house operators control data at the inlets of boilers, work process parameters, and heat output;

The information is channeled to the boiler-house computer monitoring system and monitored on-line by the head of the shift that is responsible for ensuring the correct operation of the equipment. He is also in charge of maintaining a separate paper-form logbook where all the necessary parameters are recorded on an hourly basis.

Daily and monthly reports are prepared by the boiler-house computer monitoring system. These reports are the basis for the annual19 calculation of monitored variables and subsequent emission reductions calculations. The general supervision of the monitoring system is executed by the Sukhodilska-Skhidna Coal Mine administration under the existing control and reporting system.

The function of the monitoring equipment, including its calibration status, is in order. State enterprise “Luhansk regional scientific production center for standardization, metrology and certification “is involved in the calibration of the sensors and meters

The evidence 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 monitoring plan.

3.7 Verification regarding programmes of activities (102-110)

Not applicable

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the initial 3rd periodic verification of the “Utilization of Coal Mine Methane at the Coal Mine Sukhodilska-Skhidna” Project in Ukraine, which applies the methodology ACM0008 version 04. 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 lease enterprise “Sukhodilska-Skhidna Coal Mine” 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. 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 as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. 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 deviations of emission reductions in the Monitoring Report version 02 and those in the registered PDD version 4.9 are caused by the following factors:

1) The commissioning of the second CMM boiler was delayed which effected the amount of CMM utilized;

2) The Sukhodilska Mine operates not at full performance and the volume of CMM output and its utilization level is decreased;

3) The CMM output and methane concentration levels vary in broad range due to high uncertainty level.

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 26/07/2010 to 31/12/2010

Baseline emissions	: 12893	tonnes of CO_2 equivalent.
Project emissions	: 1371	tonnes of CO_2 equivalent.
Emission Reductions (Year 2010)	: 11522	tonnes of CO_2 equivalent.

Reporting period: From 01/01/2011 to 31/12/2011

Baseline emissions	: 33456	tonnes of CO_2 equivalent.
Project emissions	: 3558	tonnes of CO_2 equivalent.
Emission Reductions (Year 2011)	: 29898	tonnes of CO_2 equivalent.

Reporting period: From 01/01/2012 to 31/12/2012

Baseline emissions	: 24879	tonnes of CO_2 equivalent.
Project emissions	: 2647	tonnes of CO_2 equivalent.
Emission Reductions (Year 2012)	: 22232	tonnes of CO_2 equivalent.
Total Emission Reductions	: 63652	tonnes of CO_2 equivalent.

5 REFERENCES

Category 1 Documents:
Documents provided by Global Carbon B.V. that relate directly to the GHG components of the project.

/1/ Monitoring Report "Utilization of Coal Mine Methane at the Coal Mine Sukhodilska-Skhidna", version 1.0 dated 02/08/2012
/2/ PDD "Utilization of Coal Mine Methane at the Coal Mine Sukhodilska-Skhidna"version 4.9, dated 21 October 2008
/3/ Determination Report "Utilization of Coal Mine Methane at the Coal Mine Sukhodilska-Skhidna", dated 07 November 2008 issued by TÜV SÜD Industrie Service GmbH
/4/ Monitoring Report "Utilization of Coal Mine Methane at the Coal Mine Sukhodilska-Skhidna", version 2.0 dated 19/09/2012
/5/ Emission reduction calculation spreadsheet file, version 1.0 dated 02/08/2012
/6/ Emission reduction calculation spreadsheet file, version 1.0 dated 19/09/2012
/7/ CDM methodology ACM0008 Version 043 "Consolidated baseline methodology for coal bed methane and coal mine methane capture and use for power (electrical or motive) and heat and/or destruction by flaring"
/8/ Letter of Approval No 1145/32/7 dated 24 December 2008 issued by National Environmental Investment Agency of Ukraine
/9/ Declaration of Approval dated 25 February 2009 issued by Netherlands' Ministry of Economic Affaires
/10/ Determination and Verification Manual, version 01
/11/ National inventory report of Ukraine for 1990 – 2010
/12/ Monitoring Manual issued on 14/09/2012

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

/1/ Passport # 19.02 on waste disposal dated 17/12/2002
/2/ Report on air protection for 2011
/3/ Report on air protection for 2010
/4/ Report on air protection for 2009
/5/ Report on usage of fuel, heat energy, electric energy for 2011
/6/ Report on usage of fuel, heat energy, electric energy for December 2010
/7/ Report on usage of fuel, heat energy, electric energy for December 2009
/8/ Report on usage of fuel, heat energy, electric energy for December 2011
/9/ Report on producing of industrial goods for 2011

/10/ Passport on gas analyzer type АГ-0012, serial # 940
/11/ Passport on gas analyzer type АГ-0012, serial # 880
/12/ Logbook on vacuum water-packed pump type BBH2-150M, serial # 23010/1
/13/ Quality certificate on vacuum water-packed pump type BBH2-150M, serial # 23010/1
/14/ Logbook on vacuum water-packed pump type BBH2-150M, serial # 071
/15/ Book on performance records of vacuum-pump house# 1,2
/16/ Report on producing of industrial goods for 2010
/17/ Passport on ventilator type ВЦД, serial # 030203
/18/ Passport on mine lifting machine, serial # 2096
/19/ Passport on ventilator type ВЦД – 31.5 М2С, serial # 93011
/20/ Passport on ventilator type ВДД – 47,5 У, serial # 8701012
/21/ Passport on ventilator type ВДД – 47,5 У, serial # 8701011
/22/ Passport on ventilator type ВЦД – 31.5 М2С, serial # 930211
/23/ Passport on ventilator type ВЦД – 31.5 М2, serial # 030102
/24/ Passport on mine machine with gear type ЦО2-220, i-10,5
/25/ Passport on mine lifting machine, serial # 913
/26/ Passport on mine lifting machine, serial # 1609
/27/ Passport on mine lifting machine, serial # 2076
/28/ Information on mined coal dated 30/06/2012
/29/ Information on mined coal dated 17/06/2012
/30/ Information on mined coal dated 15/05/2012
/31/ Information on mined coal dated 23/04/2012
/32/ Passport on steam boiler, serial # 44646
/33/ Quality certificate on boiler, serial # 12099
/34/ Quality certificate issued by producer on decontamination machine type GBH 1/89/12
/35/ Permit # 2244.06.30-29.52.1 on operational start of facility
/36/ Logbook on drifter, serial # 11916
/37/ Logbook on drifter, serial # 11915
/38/ Logbook on drifter, serial # 11914
/39/ Logbook on drifter, serial # 11902
/40/ Logbook on drifter, serial # 11913
/41/ Logbook on drifter, serial # 18205
/42/ Logbook on drifter, serial # 10642
/43/ Logbook on drifter, serial # 2405
/44/ Permission # 171.03.30-29.52.1 on usage of production facilities
/45/ Logbook on drifter type СБГ-1М, serial # 2540
/46/ Logbook on drifter type СБГ-1М, serial # 2559
/47/ Permit # 2335.05.30-29.52.1 on operational start of facility
/48/ Quality certificate on boiler, serial # 5730
/49/ Permit # 0715.07.14-45.21.1 on conducting work with high risk for the health
/50/ Passport on boiler serial # 45807
/51/ Logbook of boiler # 6

/52/ Photo – pump type КВН 1,5 .50 № 3
/53/ Photo – gas collector for decontamination
/54/ Photo – pump type КВН 1,5 .50 № 2
/55/ Photo – vacuum pump type КВН 50/1,5, serial # 00028
/56/ Photo – induction motor type ВАО2, serial # 51421
/57/ Photo– control box, serial # 187
/58/ Instruction on labor protection for 2009
/59/ Photo level analyzer type СУ200 МАИ
/60/ Photo – temperature meter, serial # 4696 (last calibration date - second quarter of 2012)
/61/ Logbook on gas boiler type КЕ 10/14С
/62/ Photo – boiler house monitoring system
/63/ Photo – gas detector panel, type ЩИТ-3
/64/ Photo - scheme of gas supply
/65/ Phot – regime map on boiler type КЕ-10-14
/66/ Photo – gas analyzer type ГАММА - 100
/67/ Photo – pressure transmitter type Сапфир 22Д, serial # 568830
/68/ Photo – pressure meter type Сапфир, serial # 014573
/69/ Photo – pressure transmitter type Сапфир 22Д, serial # 464228
/70/ Photo – pressure meter type Метран, serial # 207581
/71/ Photo – pressure meter type Метран, serial # 307567
/72/ Passport on boiler type КЕ 10/14, serial # 2793
/73/ Permit № 505.06.09 – 40.30.0 on continuation of carrying-out of work with high risk for the health
/74/ Working commission acceptance certificate dated 15/05/2012 on final completion
/75/ Passport on boiler type КЕ 10/14, serial # 7948
/76/ Permit # 4411470700-13 dated 19/05/2011 on stationary sources air pollution
/77/ Permit # 4411470700-13 dated 05/11/2008 on stationary sources air pollution
/78/ Permit # 4411470700-14 dated 19/05/2011 on stationary sources air pollution
/79/ Permit # 4411470700-16 dated 19/05/2011 on stationary sources air pollution
/80/ Permit # 4411470700-12 dated 19/05/2011 on stationary sources air pollution
/81/ Report on air protection for 2nd quarter of 2012
/82/ Report on air protection for 1st quarter of 2012
/83/ Report on air protection for 2011
/84/ Report on air protection for 3rd quarter of 2012
/85/ Report on air protection for 2011
/86/ Measuring equipment calibration certificate # 1485 dated 21/05/2012 on gas analyzer type Гамма – 100, serial # 418
/87/ Measuring equipment calibration certificate # 1485 dated 15/02/2011 on gas analyzer type Гамма – 100, serial # 294
/88/ Measuring equipment calibration certificate # 4557 dated

19/12/2011 on gas analyzer type Гамма – 100, serial # 302
/89/ Measuring equipment calibration certificate # 782 dated 19/12/2011 on resistance temperature detector type ТСПУ – 002, serial # 4617
/90/ Measuring equipment calibration certificate # 2425 dated 19/12/2011 on resistance temperature detector type ТСПУ – 002, serial # 5276
/91/ Measuring equipment calibration certificate # 782 dated 19/12/2011 on resistance temperature detector type ТСПУ – 002, serial # 4617
/92/ Measuring equipment calibration certificate # 939 dated 21/10/2011 on interferometer type ШИ – 12, serial # 600515
/93/ Measuring equipment calibration certificate # 420 dated 26/04/2012 on interferometer type ШИ – 12, serial # 700783
/94/ Passport on pressure meter type Метран – 100, serial # 307567
/95/ Measuring equipment calibration certificate # 49 valid till 20/04/2011 on resistance temperature meter ТКП – 100, serial # 4696
/96/ Passport on pressure meter type Сапфир – 22, serial # 703568
/97/ Passport on pressure meter type Сапфир – 22, serial # 339358
/98/ Passport on pressure meter type Сапфир – 22, serial # 464228
/99/ Agreement with energy supply company # 4 dated 05/12/2003
/100 Quality certificate on methane dated 28/10/2011
/101 Agreement # 1931010763 on creation of scientific and technical goods
/102 Quality certificate on methane dated 23/11/2010
/103 Agreement # 4129 on conducting of metrological works dated 23/01/2012
/104 Inquiry on amount of methane used by boilers for 2012
/105 Inquiry on amount of methane used by boilers for 2011
/106 Inquiry on amount of methane used by boilers for 2010

Persons interviewed:

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

/1/ Yana Pushkar - leading engineer for JI projects of lease enterprise “Sukhodilska-Skhidna Coal Mine”.
/2/ Iurii Petruk - JI consultant of Global Carbon B.V.
/3/ Antipov Vladislav – leader of carbon content projects, representative of Metinvest Holding
/4/ Rvacheva Elena – operative of gas-fired boiler, “Sukhodilska-Skhidna Coal Mine”

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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?	CAR01 Please add in section A.3 information on LoAs issued by host Party and by the Party of buyer CAR02 Please specify sectoral scope of the project as per : http://ji.unfccc.int/JIITLProject/DB/3ZB2MAIQDXW59TH4RXNN2JLBQR0VL8/details or clarify why sectoral scopes on UNFCCC website differ from that stated in MR	CAR01 CAR02	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	All intended deviations were discussed in the Second Periodic JI Monitoring Report and were verified and approved by the AIE.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	deemed final and is so listed on the UNFCCC JI website?	New CMM boiler has been implemented on 15/11/2011. The CMM monitoring system of the new boiler consists of temperature, pressure and concentration sensors (common for the two CMM boilers), flow meter and a computing unit (common for the two CMM boilers) to obtain the normalized8 value of CMM flow.		
93	What is the status of operation of the project during the monitoring period?	The project has been operating during all monitoring period	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?	There are no deviations to the monitoring plan since last verification.	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?	The exhaustive description and justification of the key factors is provided in Section B.1. of the PDD version 4.9. dated 21 October 2008 which is deemed final.	OK	OK
95 (b)	Are data sources used for calculating	Yes, all data sources used for calculating emission	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	emission reductions or enhancements of net removals clearly identified, reliable and transparent?	reduction are clearly identified, reliable and transparent.		
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?	Emission factors, including default emission factors are presented in Section B.2.1. of the MR. CAR03 **FAR 01. (from previous verification)** In order to meet the JISC requirements on data saving and archiving, an Order on archiving of all project related documentation for two years after the last ERU transmission should be developed and included to the Emission Monitoring Manual. All persons responsible for data collection and monitoring should be aware of the provisions of this Order.	CAR03	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 of net removals is based on conservative assumption and the most plausible scenarios in a transparent manner. CL01 Please clarify why normal condition for methane is taken not 20℃, but 0℃. CAR04 Please provide reference in MR on source that	CL01 CAR04 CAR05	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		contains physical values of methane. CAR05 Reference to previous MR method of calculation is not sufficient source for current verification. Please provide full calculation procedure in actual excel spreadsheet.		
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	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			
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?	N/A	N/A	N/A
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?	CAR06 Please for all figures 1-3 in the MR provide full description of items described on them. CAR07 There is gap in references numbering from	CAR06 CAR07 CAR08 CAR09 CAR10 CAR11	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		reference # 5 till reference # 8 CAR08 **FAR 02 (from previous verification).** The training plans and procedures should be described in Monitoring Manual. CAR09 **FAR 03 (from previous verification).** Job descriptions and working instructions for data collection should be part of the monitoring manual. CAR10 Please provide order on creation of special monitoring group. CAR11 Please provide document that supports date when new boiler was implemented (15/11/2011).		
101 (b)	Is the function of the monitoring equipment, including its calibration status, in order?	Yes, the function of the monitoring equipment, including its calibration status, is in order CAR12 **FAR 04 (from previous verification).** In monitoring manual a specific frequency of crosschecking and the staff responsible for this must be provided.	CAR12 CL02 CL03	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CL02 Please clarify how you are going to estimate emission reduction in case if any of measuring equipment is broken for some period of time. CL03 Please clarify how differential pressure sensor Sapfir 22D, serial 703568 is capable of measuring the quantity of methane (see Table 2 Equipment used for monitoring activities).		
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. CAR13 Please correct monitoring duration in excel calculation spreadsheet CAR14 Please correct date of calculation spreadsheet	CAR13 CAR14	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	All data will be archived electronic and paper. Electronic photo copies of manual logbooks are contained in the supporting document SD36. CL04 Please clarify what kind of document are SD36 document and other documents with abbreviation SD** CAR15 Please provide documents on both creation of	CL04 CAR15	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		special monitoring group and documets storage for at least 2 years.		
Verification regarding programmes 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: (i) For each verification that uses a sample-based approach, the sample	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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 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 Corrective Action and Clarification Requests

Draft report clarification and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR01 Please add in section A.3 information on LoAs issued by host Party and by the Party of buyer	90	The project received the Letter of Approval from Ukraine (Host Party) and the Letter of Approval from the Netherlands (Party of buyer). The Letters of Approval can be found at http://ji.unfccc.int/JIITLProject/DB/3ZB2MAIQDXW59TH4RXNN2JLBQR0VL8/details. The relevant information has been added to the Section A.3. of the MR version 2.0 dated 19/09/2012.	The information is added. The issue is closed
CAR02 Please specify sectoral scope of the project as per : http://ji.unfccc.int/JIITLProject/DB/3ZB2MAIQDXW59TH4RXNN2JLBQR0VL8/details or clarify why sectoral scopes on UNFCCC website differ from those stated in MR	90	Sectoral scopes: (10) Fugitive emissions from fuels (solid, oil and gas); (8) Mining/mineral production. The relevant information has been added to the Section A.2. of the MR version 2.0 dated 19/09/2012.	The issue is closed

CAR03 **FAR 01. (from previous verification)** In order to meet the JISC requirements on data saving and archiving, an Order on archiving of all project related documentation for two years after the last ERU transmission should be developed and included to the Emission Monitoring Manual. All persons responsible for data collection and monitoring should be aware of the provisions of this Order.	95(c)	Please see page 9 of the Emission Monitoring Manual. The new version of Emission Monitoring Manual has been presented to the AIE as Supporting document SD4_Monitoring manual.	The Emission Monitoring Manual is updated. The issue is closed
CL01 Please clarify why normal condition for methane is taken not 20℃, but 0℃.	95(d)	The characteristics of calculating system of consumed coal mine methane (CMM) gas, from which the volume of consumed methane is derived, allow obtaining the volume normalized only to the normal conditions. Thereby, the methane conditions applied are normal conditions (temperature of 0 ℃ and pressure of 101 325 Pa).	The issue is closed

CAR04 Please provide reference in MR on source that contains physical values of methane.	95(d)	Theoretical basics of thermal engineering, Thermal Engineering Experiment, Reference Guide, Book 2, Edited by Grigoryev V.A., Zoryn V.M., 2nd edition, Moscow, Energoatomizdat, 1988 page 367. (See supporting document SD1_Methane_concentration). The relevant information has been added as the reference to Section B.1. of the MR version 2.0 dated 19/09/2012.	The source on data is added. The issue is closed
CAR05 Reference to previous MR method of calculation is not sufficient source for current verification. Please provide full calculation procedure in actual excel spreadsheet.	95(d)	The reference to previous MR was mistaken. The reference to the current MR has been added. Please see Excel spreadsheet version 2.0 dated 19/09/2012.	The issue is closed

CAR06 Please for all figures 1-3 in the MR provide full description of items described on them.	101(a)	The control panel with the display showing actual operation parameters is shown in Figure 1. The computer where the signals from the control panel are duplicated is shown in Figure 2. The boiler house logbook containing necessary monitoring parameters (methane concentration in CMM, flow rate, operation hours etc.) is shown in Figure 3. The relevant information has been added as a reference to Section B. of the MR version 2.0 dated 19/09/2012.	The issue is closed
CAR07 There is gap in references numbering from reference # 5 till reference # 8	101(a)	The gap in references has been fixed. Please see the MR version 2.0 dated 19/09/2012.	The issue is closed
CAR08 **FAR 02 (from previous verification).** The training plans and procedures should be described in Monitoring Manual.	101(a)	Please see page 11 of the Emission Monitoring Manual. The new version of Emission Monitoring Manual has been presented to the AIE as Supporting document SD4_Monitoring manual.	The Emission Monitoring Manual is updated. The issue is closed

CAR09 **FAR 03 (from previous verification).** Job descriptions and working instructions for data collection should be part of the monitoring manual.	101(a)	Please see page 9 of the Emission Monitoring Manual. The new version of Emission Monitoring Manual has been presented to the AIE as Supporting document SD4_Monitoring manual.	The Emission Monitoring Manual is updated. The issue is closed
CAR10 Please provide order on creation of special monitoring group.	101(a)	The order on creation of special monitoring group has been presented to the AIE as Supporting document SD5_Order for monitoring.	The order has been provided. The issue is closed
CAR11 Please provide document that supports date when new boiler was implemented (15/11/2011).	101(a)	The second CMM boiler started operation in November 2011. The Complex testing of second boiler was carried out 15-19 November 2011. As per conclusion of the Complex testing, the boiler and its auxiliary equipment operate without faults, the further exploitation is permitted. The relevant information has been added to Section A.3. of the MR version 2.0 dated 19/09/2012. The Complex testing statement has been presented to the AIE as Supporting document SD6_Complex testing statement.	The issue is closed

CAR12 **FAR 04 (from previous verification).** In monitoring manual a specific frequency of crosschecking and the staff responsible for this must be provided.	101(b)	Please see page 9 of the Emission Monitoring Manual. The new version of Emission Monitoring Manual has been presented to the AIE as Supporting document SD4_Monitoring manual.	The Emission Monitoring Manual is updated. The issue is closed
CL02 Please clarify how you are going to estimate emission reduction in case if any of measuring equipment is broken for some period of time.	101(b)	In case of failure of a particular measurement unit, it will be promptly replaced with the similar one, and the value of the monitoring parameter will be accepted based on conservative assumptions. The explanation has been added to Section C.4 of the MR version 2.0 dated 19/09/2012.	The procedure is added to section C.4 of the MR version 2.0 dated 19/09/2012

CL03 Please clarify how differential pressure sensor Sapfir 22D, serial 703568 is capable of measuring the quantity of methane (see Table 2 Equipment used for monitoring activities).	101(b)	The differential pressure sensor Sapfir 22D, serial 703568 is responsible for measurement of pressure difference in the CMM gas pipeline. The measurement method is based on creation of local flow narrowing in the special measurement pipeline. Thus, part of its potential energy passes into kinetic energy and the average flow speed in the narrow place is increasing; but the static pressure falls below the level of static pressure before the measurement pipeline. The greater flow is, the greater the pressure difference is; thus it can serve as a flow measure. (ISO 5167-1:2003) The standard ISO 5167-1:2003 has been presented to the AIE as Supporting document SD7_Flow measurement standard.	The issue is closed
CAR13 Please correct monitoring duration in excel calculation spreadsheet	101(c)	The monitoring duration has been corrected. Please see Excel spreadsheet version 2.0 dated 19/09/2012.	The monitoring duration is corrected. The issue is closed

CAR14 Please correct date of calculation spreadsheet	101(c)	The date of calculation spreadsheet has been corrected. Please see Excel spreadsheet version 2.0 dated 19/09/2012.	The issue is closed
CL04 Please clarify what kind of document are SD36 document and other documents with abbreviation SD**	101(d)	The documents with abbreviation SD are Supporting document, which are provided to the AIE to confirm or clarify project data.	The issue is closed
CAR15 Please provide documents on both creation of special monitoring group and documets storage for at least 2 years.	101(d)	The order on creation of special monitoring group has been presented to the AIE as Supporting document SD5_Order for monitoring.	The issue is closed