VERIFICATION REPORT

ING BANK N.V.

VERIFICATION OF THE

"Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine"

REPORT NO. UKRAINE-VER/0166/2010

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Report No: UKRAINE-ver/0166/2010

VERIFICATION REPORT

Date of first issue: 09/12/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: ING Bank N.V..	Client ref.: Stephen Hibbert

Summary:
Bureau Veritas Certification has made the periodic verification of "Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine", project of OJSC Krasnodonvugillya located in the town of Molodogvardiysk, Krasnodon district, Luhansk Oblast, 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 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 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 (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 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 GHG emission reduction is calculated without material misstatements, and the ERUs issued totalize 32873 tons of tCO2eq for the monitoring period from 01.04.2009 to 31.07.2010 (for 2009 13854 tCO2eq, for 2010 19019 tCO2eq).
Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0166/2010	Subject Group: JI	
Project title: "Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine".		
Work carried out by: Kateryna Zinevych - Team Leader, Lead Verifier Rostislav Topchiy - Team Member, Verifier Igor Antipko – Team Member, Technical Specialist		
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer		
Work approved by: Ivan Sokolov - Operational Manager		
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Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

ING Bank N.V. commissioned Bureau Veritas Certification to determinate its JI project "Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine" (hereafter called "the project") of OJSC Krasnodonvugillya (belongs to Metinvest Holding) located at the town of Molodogvardiysk, Krasnodon district, Luhansk Oblast, Ukraine. The project was developed by GreenStream Network GmbH.

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 and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective 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:

Kateryna Zinevych
Bureau Veritas Certification Team Leader, Climate Change Verifier

Rostislav Topchiy
Bureau Veritas Certification, Team Member, Climate Change Verifier

Igor Antipko

Bureau Veritas Certification, Team Member, Technical Specialist

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 01.1 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) “Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine” project version 01 dated 30/08/2010 submitted by GreenStream Network GmbH and additional background documents related to the project design and baseline, i.e. country Law, and/or Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, prior to and following the site-visit PPs revised the MR and resubmitted it as version 02 on 25/11/2010.

To address Bureau Veritas Certification Internal Technical Review requests, PPs revised the MR and resubmitted it as version 03 on 28/12/2010, which is considered final.

The verification findings presented in this report relate to the Monitoring Reports versions 01,02 and 03.

2.2 Follow-up Interviews

On October 24, 2010 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 Coal Mine Samsonivska-Zakhidna and GreenStream Network GmbH were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Coal Mine Samsonivska-Zakhidna	• 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
GreenStream Network GmbH	• 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 reports and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should

raise these issues and inform the project participants of these issues in the form of:

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

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

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

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

3 VERIFICATION CONCLUSIONS

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

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

The Clarification, Corrective and Forward Action Requests are stated, where applicable, 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, 8 Clarification Requests, and 5 Forward Action Requests.

3.1 Project approval by Parties involved (90-91)

Written project approval by the Netherlands has been issued by the DFP of that Party when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines,at the latest.

The abovementioned written approval is unconditional.

3.2 Project implementation (92-93)

Project description.

Samsonivska-Zakhidna is an underground coal mine; its operation has started in 1999. As of 2007, 2967 people were employed at the mine. The current production capacity of Samsonivska-Zakhidna mine is 1 250 000 tons of coal per year. The mine covers the territory of 105.1599 hectares.

Balance reserves of Samsonivska-Zakhidna mine is 154 377 million tons of coal. Thickness of beds, which are being developed, is 1.25 meters. The type of the coal is “Zh” coking coal according to the Ukrainian coal quality scale. Ash content of coal is 37.4. Sulfur content is 1.7%. The average content of methane in coal is 27 m3/t of coal.

The primary means of coal mining in the mine is long coalfaces development. The current number of producing faces is three. A typical width of one coalface is 270 m. The number of shafts is 5: the main shaft (length - 960 m), auxiliary shaft №1 (857 m), intake shaft (1020 m), air shaft №2 (888 m). Coal beds are mined with long-pillars with increase method. The length of the drifts is 250-270 m.

One of the main sources of methane emissions to the atmosphere is coal mining. Methane, which is released into the atmosphere due to operation of Samsonivska-Zakhidna mine, has two main sources: ventilation methane and methane captured by degassing system. Due to extremely low concentrations of methane in the ventilation system, this component is not taken into account in the calculations.

The proposed project at the Samsonivska-Zakhidna mine consists of the following measures aimed at prevention of methane emissions and utilization of the CMM energy content:

1) Installation of three flaring systems for CMM combustion

A positive conclusion from the Donetsk Technical Expertise center regarding the use of KGUU-5/8 was received on April 22nd, 2008. This date is considered the date of the project activity start. The first KGUU-5/8 flare was installed onsite and started operation in the testing mode on April 1st, 2009. A temporary state permit has been issued for the testing operation of the KGUU-5/8 unit on September 14th, 2009. The other two KGUU-5/8 units are to be installed upon the successful testing phase.

2) Switching of existing coal boilers KE-10/14 and KVTS-20-150 to methane;

The management of the Samsonivska-Zakhidna mine has commissioned CJSC ‘Kotloenergoproekt’ for developing the technical design for the KE-10/14 boiler switch to CMM in 2004.

3) Installation of three gas engines for the CMM utilization.

The technical design for power production by gas engines using CMM as fuel was prepared by CJSC ‘Kotloenergoproekt’ in 2008.

CMM degasification activities

Drainage system consists of a mine degassing pipelines network and a vacuum pumping station which is located on the surface. CMM is removed from coal beds and surrounding rocks through drainage systems.

The following ventilation shafts are taken into account in the calculation of methane emissions:

Surface degasification: 2 channels; channel I – surface vacuum-pump station PPVNS-1 (eastern inclined longwall), methane flow is 0.141 m3/sec, channel II – surface vacuum-pump station PPVNS-2 (sixth eastern inclined longwall) flow of methane is 0.116 m3/sec;

Degasification: vacuum-pump station (VPS) (central industrial site), 1 channel - flow of methane 0.525 m3/sec; Underground degasification; 2 channels, channel I (first eastern inclined longwall, flow of methane is 0.187 m3/sec), channel II (sixth eastern inclined longwall, flow of methane is 0.338 m3/sec).

Introduction of gas engines for CMM utilization

It is planned to install three GE Jenbacher J 420 units with 1.416 MW of installed power capacity for each unit. Power efficiency of GE Jenbacher J 420 is 42.48%. Generated electricity will be supplied to the mine and will partially cover the electricity demand of the mine.

CMM flares installation

Flares KGUU-5/8 are enclosed flares with a nominal capacity of 5 MW; maximum capacity is 8 MW. Flaring process is controlled automatically by the unit's computer. Minimum flaring temperature is 850℃; minimum flaring efficiency is 99.9%. It is planned to install three KGUU-5/8 at Samsonivska-Zakhidna mine.

Switching of existing coal boilers KVTS-20-150 and KE-10/14 to methane

Thermal energy for the needs of Samsonivska-Zakhidna mine is currently produced by two coal boilers KE-10/14 (efficiency 87%) and KVTS-20-150 (efficiency 89%). Another KVTS-20-150 boiler is mothballed and not operated.

Existing coal boilers KVTS-20-150 and KE-10/14 will be reconstructed with subsequent switching to the use of methane as primary fuel. Burners on the side walls of the combustion chamber will be reconstructed; air and methane-air mixture supply to the burners will be improved; air regulating valves will be installed on air lines group that supplies air under the grate; screens reconstruction in boilers burners will be made, explosive valves will be installed on the boilers and economizers. As a result of the reconstruction, efficiency of both boilers will increase to 93%. After the reconstruction both boilers can work solely on CMM supplied from the mine's degassing system.

The implementation status of the project:

For the monitoring period from 01.04.2009 to 31.07.2010 the project has been implemented with deviations from the PDD regarding which the determination has been performed, and the starting date of operation is 01/04/2009.

The implementation schedule of the measures envisaged within the project is given in the Table below:

Table. Schedule of project activities implementation (according to the PDD version 2.01 dated 06.04.2010)

№	Activity	Designing start	Build start	Putting into operation
1	**CMM flaring system installation**			
1.1	Flare №1 installation	December 2008	June 2008	April 2009
1.2	Flare №2 installation	December 2008	June 2009	January 2010
1.3	Flare №3 installation	December 2008	June 2009	April 2010
2	**Gas engine installation**			
2.1	Unit №1 installation (GE Jenbacher J420, 1.416 MW)	December 2008	June 2010	January 2011
2.2	Unit №2 installation (GE Jenbacher J420, 1.416 MW)	December 2008	June 2010	January 2011
2.3	Unit №3 installation (GE Jenbacher J420, 1.416 MW)	December 2008	June 2010	January 2011
3	**Switching of existing coal boilers to methane**	December 2008	June 2010	January 2011

The following changes in the implementation schedule have happened during the monitoring period compared to the registered PDD version 2.01:

Installation of the flare #2 is postponed by 9 months; the flare #3 is postponed by 12 months. The new expected commissioning dates for flares #2 and #3 are October 2010 and January 2011 respectively. The main reason for the delays in the implementation schedule PPs explained by the lack of financing available.

These deviations in implementation schedule and reduced period of operation resulted in less emission reductions comparatively to those envisaged in the PDD (see also CL 02 and FAR 03):

2009	PDD:	27901 tCO2-e,
	according MR:	13854 tCO2-e
2010	PDD (calculated for 7 months):	59676 tCO2-e,
	according MR:	19019 tCO2-e.

The verification team got open access to all required plans, data, records, drawings and to all relevant facilities. Commissioning of the equipment is evidenced by statements of work completion (see list of verified documents).

Outstanding issues related to the Project implementation, PP's response and BV Certification's conclusion is described in Appendix A (refer to CL 01-02).

3.3 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 performed.

For calculating the emission reductions key factors 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. The exhaustive description and justification of the key factors is provided in Section B.1. of the PDD version 2.01 dated 06 April 2010.

Data sources used for calculating emission reductions, such as:

- Methane flow to flares (m3);
- Methane pressure at flares (bar);
- Methane temperature at flares (^{o}C);
- Methane concentration in the captured gas (%).
- Carbon emission factor of NMHC (tCO2e/tNMHC)
- Proportion of the non-methane hydrocarbon substances in the gas collected (%),

are clearly identified, reliable and transparent.

Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. List of fixed default values is presented in Section D.1 of the Monitoring report.

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

Level of uncertainty of data collected is established in the measuring equipment certificates and verified according to established calibration schedules.
During calculation of the GHG emissions the level of uncertainty is taken into account according to the Article 10 part 1 of “Law of Ukraine on Metrology and Metrological Activity”, which states the level of uncertainty.
All the calibration procedures are performed according to the detailed calibration plan. On the date of verification, calibration records of the measuring and monitoring equipment have been verified on site. The list of all monitoring equipment with all the serial numbers and calibration dates is presented in the Monitoring Report version 03 as well as in the Appendix C of the present Verification Report.

Outstanding issues related to the Compliance of the monitoring plan with the monitoring methodology, PP’s response and BV Certification’s conclusion is described in Appendix A (refer to CAR 01, FAR 01).

3.4 Revision of monitoring plan (99-100)

Not applicable.

3.5 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 specified in sections C and D of the MR and are also mentioned among the Category 2 Documents in Section 5 “References” of this report.
Data necessary for the CO2 emission reductions calculation are clearly defined in the monitoring report, Monitoring Manual and are implemented on-site. The scheme of data flow and a description of reporting procedures are introduced in Monitoring Report version 03 from 28/12/2010.
All operators are responsible for data administration. All relevant data are summarized every two hours and archived in register records. It is possible to track the work through the remote access.
Flares KGUU-5/8 are equipped with the meters of the gas volume, the meters of the gas pressure, the meters of the gas temperature sent to the flare. The relevant data is being recorded daily in the work journal and afterwards combined into the monthly report.
Flares KGUU-5/8 are equipped with the meters of the methane concentration of CMM sent to the flare. Gas analyzer converts the volume of CMM to 100% methane. The relevant data is being recorded daily in the work journal and afterwards combined into the monthly report.

The company maintains the elaborated calibration plan for the project equipment. The audit team verified the calibration status of all the equipment at the sites sampled for the audit and found them to be in compliance with the plan.
Calibration procedure is conducted by State Center of Metrology and Standardization. The documents that confirmed calibration were provided for the verification team.
The company complies with all legal and statutory requirements of Ukraine. All procedures and routines relating to the quality of emission reductions are properly documented in the specially designed and implemented “Monitoring Manual” which has been constantly updated and improved to ensure a successful operation of the project and credibility and verifiability of the ERs achieved.
The”MONITORING MANUAL for Coal Mine Samsonivska-Zakhidna” developed at the enterprise, which contains:

- General
- Formation of databases
- Data flow and storage system
- Emergencies
- Qualifications of staff

    - o Annexes
        - Operational scheme of the UKG-5/8
        - Instruction on health and safety
        - Job Description

Plant operates in automatic mode. Data are sent to the FTP-server by a wireless GPRS-channel then they are registered in the local database. The archive contains data about 30 values: gas temperature, pressure, concentration of CH4, O2, CO2, mass and volume and the accumulation of a mixture of pure methane, etc.
To work with the data archive special software "Data Converter UKG-5/8" applies. You can upgrade and browse the database for the entire period of plant operation using this software.
Currently, the described software is available only for Chief miner for support of projects under the Kyoto Protocol JSC “Krasnodonvugillya”. It is planned to install the software on site that serve to UKG-5/8.
The responsibilities and authorities are described for each individual in job description and work instruction as required statutorily. The required training was identified in advance and was successfully delivered that was checked onsite.
The methods used to determine GHG emissions reflect the chosen methodology content and are documented in the “Monitoring report”. The calculation of the emission reduction is correct.
MR comprises information as for environmental and/or social indicators, which could be necessary to monitor for the success of the project activity.

Outstanding issues related to the Data management, PP's response and BV Certification's conclusion is described in Appendix A (refer to CAR 01, CL 02-06, FAR 02-04)

3.6 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the first periodic verification of the "Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine" located at the town of Molodogvardiysk, Krasnodon district, Luhansk Oblast, Ukraine.. The verification was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

Bureau Veritas Certification verified the Project Monitoring Report version 03 dated 28/12/2010 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

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

Reporting period: From 01/04/2009 to 31/07/2010

Baseline emissions	:	38046	t CO2 equivalents.
Project emissions	:	5173	t CO2 equivalents.
Emission Reductions	:	32873	t CO2 equivalents.

Emission Reductions for 2009: 13854 t CO2 equivalents.

Emission Reductions for 2010: 19019 t CO2 equivalents.

5 REFERENCES

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

/1/ PDD “Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna” version 2.01, dated 06 April 2010

/2/ Determination Report “Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna”, dated 12 April 2010 issued by Bureau Veritas Certification Holding SAS

/3/ Letter of Approval No 1535/23/7 dated 06 October 2010 issued by National Environmental Investment Agency of Ukraine

/4/ Declaration of Approval dated 13 August 2010 issued by Netherlands’ Ministry of Economic Affaires

/5/ MR “Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine” project version 01 dated 30/08/2010

/6/ MR “Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine” project version 02 dated 25/11/2010

/7/ MR “Coal Mine Methane Capture and Utilization at Samsonivska-Zakhidna Mine” project version 03 dated 28/12/2010

/8/ CDM methodology ACM0008 version 04 “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”

/9/ “Tool for the demonstration and assessment of additionality” version 02

/10/ “Tool to determine project emissions from flaring gases containing Methane” version 1

/11/ Monitoring Manual issued on 10/05/2010

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

/1/ Photo 1: Monitoring Manual (10/05/2010)

/2/ Photo 2: Gas volume meter SITRANS 7MF1564-3AA01-1AA1

/3/ Photo 3: Methane concentration meter ULTRAMAT 23

/4/ Photo 4: Pressure meter Siemens 7MF1564

/5/ Photo 5: Temperature Sensor TSPU

/6/ Description of IT-system

/7/ Information about environmental management system

/8/ "Respirator" Institute Accreditation Certificate (up to 09/12/2014) №ВЛ -001-2009

/9/ Addition to the “Assessing the impact on the environment” of

09/12/2010
/10/ Schedule of planned preventive works on KGUU-5/8

/11/ A schedule of internal audits to OHSAS for 1-4 quarters of 2010.

/12/ Standard ecological form 2TP-Air for 2009
/13/ Standard ecological form 2TP-Air for 1 quarter 2010
/14/ Standard ecological form 2TP-Air for 2 quarter 2010
/15/ Metrological certificate " Sitrans.P № N1-W130-9688556" (up to 23/02/2011)
/16/ Metrological certificate " Siemens 7MF1564 № AZB/W 4117222 (up to 23/02/2011)
/17/ Passport ULTRAMAT №02-07 (metrological checking of 23/02/2010)
/18/ Passport PT100-80-F670 №07955 (metrological checking of 23/02/2010)
/19/ Letter from the State Committee for Industrial Safety, Labour Protection and Mining Supervision № 16-23/2734 of 23/11/2009 on the testing KGUU-5/8
/20/ Expert opinion № 14.-02.-18.-2704.-09 on compliance programs and pre-acceptance test KGUU-5/8
/21/ The act of acceptance testing KGUU-5/8 of 20/11/2009
/22/ Verification of knowledge on the operation of KGUU-5/8 of 30/09/2009
/23/ The training program: “Operation and maintenance of the installation KGUU-5/8” of 8/10/2008

/24/ KGUU-5/8 Work with data instructions
/25/ Logbook KGUU-5/8
/26/ Calculation of average monthly measurements for 2010
/27/ Instruction manual KGUU-5/8
/28/ Certificate № 158 “Testing the knowledge of labor protection” issued by the engineer Palkina LA
/29/ Report of completion of the installation KGUU-5/8 of 12/06/2010
/30/ Act of the repairs to the KGUU-5/8 of 01.09.2010

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/ Yevgen Groza – director “GreenStream Network GmbH” Ukraine
/2/ Marina Frolova – Chief miner for support of projects under the Kyoto Protocol JSC “Krasnodonvugillya”
/3/ Pachin Dmitriy - Acting Chief Engineer “Coal Mine Department Samsonivska-Zakhidna”
/4/ Tuliakov Valeriy – acting chief PRTB section “Coal Mine Department Samsonivska-Zakhidna”
/5/ Chehov Vitaliy – mechanic PRTB “Coal Mine Department

Samsonivska-Zakhidna"

/6/ Shlapak Inna – chief ecologist "Coal Mine Department Samsonivska-Zakhidna"

/7/ Palkina Lidiya – machinist pumping units "Coal Mine Department Samsonivska-Zakhidna"

APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	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?	Written project approvals by the Netherlands and Ukraine have been issued by the DFPs of those Parties when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines. (They are listed among Category 1 Documents in the Reference section of this report)			OK
91	Are all the written project approvals by Parties involved unconditional?	The above mentioned written approvals are unconditional constituting the authorization by the DFPs of the legal entity to participate			OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		in the JI project under consideration			
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?	There are delays in the project implementation compared to the schedule determined in the PDD version 2.01. The main reason for the delays in the implementation schedule is the lack of financing available. Installation of the flare #2 is postponed by 9 months; the flare #3 is postponed by 12 months. The new expected commissioning dates for flares #2 and #3 are October 2010 and January 2011 respectively.			OK
93	What is the status of operation of the project during the monitoring period?	On the whole project started as defined in the PDD version			OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		2.01 dated 06 April 2010 and the implementation is evidenced by statements of work completion (see list of verified documents).			
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?	No changes in monitoring plan.	**FAR 05.** FAR is opened concerning registration of operation time.		To be checked under the subsequent periodic verification
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 2.01 dated 06 April 2010 which is deemed final.			OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	All operators are responsible for data administration. All relevant data summarized every two hours and archived in register	**CAR 01.** Section A Monitoring Report does not contain the name of the project indicating the sectoral scope. **CAR 02.** Section A Monitoring	Section A was amended accordingly. Section A was	OK OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		records.	Report does not contain information about the Monitoring period. Are the first and last days included in a monitoring period?	amended accordingly Monitoring period: 01.04.2009 – 31.07.2010 (including the first and the last date)	
			CAR 03. It is not described whether there are any differences between the PDD and monitoring reports. The direct link to the PDD is not given.	Please refer to Section B.1: The following changes in the implementation schedule have happened during the monitoring period compared to the registered PDD version 2.01: Installation of the flare #2 is postponed by 9 months; the flare #3 is postponed by 12 months. The new expected commissioning dates for flares #2 and #3 are October 2010 and January 2011 respectively. The	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				main reason for the delays in the implementation schedule is the lack of financing available from the project owner. However, the delay with commissioning of the two KGUU-5/8 flares has no significant impact on the project's additionality, since the flares are only able to generate profit by selling emission reductions.	
			CAR 04. Cyrillic shouldn't be present in MR. It is present in the Annex A.	The document in Ukrainian was removed from Annex A.	OK
			CAR 05. There are no direct links to sources of data and parameters in the Section D1.	Data sources were added to all parameters in the Section D.1 Formulae were	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
			CAR 06. The formula used on the report are not numbered.	numbered through the report.	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	Emission factors, including default emission factors are presented in Section F of PDD.	**FAR 01.** 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.	The Monitoring Manual will be updated accordingly.	To be checked under the subsequent periodic verification
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	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	N/A
97 (b)	*If the determination was conducted on the*	N/A	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	basis of an overall monitoring plan, have the project participants submitted a common monitoring report?				
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	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?	N/A	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	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?	All data necessary for the CO2 emission reductions calculation is collected. The scheme of data flow and a description of			

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		reporting procedures introduced in Monitoring Manual from 10/05/2010 .			
		Training logbook and Results of operator training were presented to the verification team during the site visit.	**FAR 02 .** The training plans and procedures should be described in Monitoring Manual.	The Monitoring Manual will be updated accordingly.	To be checked under the subsequent periodic verification
		Position and roles of each person in the GHG data management process are clearly defined in the monitoring report, Monitoring Manual and are implemented on-site. Introduction of computerized control system allows for efficient on-line monitoring and periodical review of the data collection process	**CAR 07.** It does not indicate responsible persons for the formation of monitoring report in the A8 Monitoring report.	Please refer to Section A.8: The Chief Miner of the Scientific and Technical Direction of OJSC 'Krasnodonvugillya' Mrs. M. V. Frolova and Chief Degassing Miner of the Scientific and Technical Direction of OJSC 'Krasnodonvugillya' Mr. A. V. Galkin are responsible for gathering and processing of the data monitored. This monitoring report	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				was developed by GreenStream Network GmbH, responsible person – Mr. Y. G. Groza.	
			CAR 08. There is no indication of exact responsible persons in the mine in the Section QC and QA procedures subsection Roles and responsibilities.	Data source links were added to the text.	OK
			CAR 09. There is no detailed description of the data collection process and responsible persons for the collection, transmission, processing and storage / archiving in the MR Figure 1.	Figure 1 was updated accordingly.	OK
			CL 01. Please provide information why the concentration of CH4 was accepted as 100% in Sams ERUs 042009-072010 v4?	Flares KGUU-5/8 are equipped with the meters of the methane concentration of CMM sent to the flare. Gas analyzer converts the volume of CMM to 100%	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				methane. The relevant data is being recorded daily in the work journal and afterwards combined into the monthly report.	
			CL 02. Please explain the lack of data for November and December 2009 in the Sams ERUs 042009-072010 v4.	During November and December 2009 the mine was switching from 6th Eastern longwall to the 5th Eastern longwall. KGUU-5/8 was not in use due to the absence of CMM during the longwall switch process.	OK
			FAR 03. Please ensure registration of the operational time of the emission reduction related installations.		To be checked during the subsequent periodic verification.
			CAR 10. There are different values of accumulation of methane for April 2010 in the logbook of average values for a month (364,632 m3) and Sams ERUs 042009-072010 v4 (343,829 m3).	A mistake was made when copying the data from the mine's logbook into the excel table. The	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				input values were corrected and are presented in the updated excel model version 5.	OK
			CAR 11. There is no indication of exact responsible persons in the mine in the Section QC and QA procedures subsection Roles and responsibilities.	Chief Degassing Miner of the Scientific and Technical Direction of OJSC 'Krasnodonvugillya' Mr. A. V. Galkin / Chief of PRTB of the Coal Mine	OK
			CL 03. Please provide a certificate of accreditation NIIGD "Respirator".	Department Samsonivska-Zakhidna Mr. O.O. Bandurin is responsible for data	
			CL 04. Please provide information about the IT-system of the project (data collection, maintenance and repairs)	collection at the mine. Section A.8 updated accordingly.	OK
				Accreditation certificate is provided in a separate file.	
				IT system for the project is provided by	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				the equipment supplier VNII Kompressormash. A detailed description of the IT system is provided in a separate file.	
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	Calibration is conducted by State Center of Metrology and Standardization. The documents that confirmed calibration were provided for the verification team.	**FAR 04.** In monitoring manual a specific frequency of cross-checking and the staff responsible for this must be provided.	The Monitoring Manual will be updated accordingly.	To be checked under the subsequent periodic verification
			CAR 12. Table 3 in section C of Monitoring report does not specify factory / inventory numbers of used measuring devices.	Table 3 was amended to include the serial numbers of the measurement equipment.	OK
			CL 05. Please provide information about the parameter K9 of Table 8 in section D2 and calibration of measuring devices used in the analysis of it.	ULTRAMAT gas analyzer (see Table 3) is used to control the concentration of methane in CMM. Last calibration of the ULTRAMAT gas analyzer was done	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				on 23/02/2010.	
		It is stated in PDD version 2.01 that environmental performance of the project will be monitored in the framework of procedures existing at Mine.	**CAR 13.** In the monitoring report are no data about the impact of the project on the environment.	Please refer to Section A.1 During the monitoring period the project "COAL MINE METHANE CAPTURE AND UTILIZATION AT SAMSONIVSKA-ZAKHIDNA MINE" had positive effect on the environment. The level of greenhouse gas emissions at Samsonivska-Zakhidna mine was reduced compared to the baseline scenario due to introduction of technology for utilizing coal mine methane, being one of the greenhouse gases. Flaring of the coal mine methane during the monitoring period resulted in	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				reduced methane emissions from Samsonivska-Zakhidna mine and possible transboundary transmission of such emissions.	
			CL 06. Please provide information about the monitoring system of air emissions (responsible persons, frequency of measuring, recording of results).	Information regarding the system of air pollution control is provided.	OK
			CAR 14. Present emission reductions for each year.	Reductions for each year breakdown added; please refer to page 20, Table 13	
			CAR 15. Fill in empty cell in excel file (0 if not in operation etc.)	Excel sheet updated, see attached	
101 (c)	Are the evidence and records used for the	Data collection are	**CL 07.** Explain in more details	Please refer to	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	monitoring maintained in a traceable manner?	clearly defined in the monitoring report, Monitoring Manual and are implemented on-site.	difference between PDD reduction figures and real ones, take into account that in 2010 only 7 months are reported.	Section E5: Compared to reductions estimated in the registered PDD, project emission reductions have decreased by 14,047 tCO2e during the period of 01.04.2009 – 31.12.2009, and decreased by 36,782 tCO2e during the period of 01.01.2010 – 31.07.2010.	
			CL 08. Explain in the MR that methane concentration is measured and calculations are corrected for 100% CH4.	No changes made to MR. Please see page 14 (Table 8, K9) and page 15 (Table 9, K9): Gas analyzer converts the volume of CMM to 100% methane. The relevant data is being recorded daily in the work journal and afterwards combined into the	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				monthly report.	
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	All data necessary for the CO2 emission reductions calculation is collected. The scheme of data flow and a description of the management system is introduced in the Monitoring Manual of 10/05/2010.			OK
Verification regarding programs of activities (additional elements for assessment)					
102	Is any JPA that has not been added to the JI PoA not verified?	N/A	N/A	N/A	N/A
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/A	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	N/A
104	Does the monitoring period not overlap with previous monitoring periods?	N/A	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	N/A
Applicable to sample-based approach only					
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into	N/A	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	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 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	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	N/A	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	reasonable explanation and justification?				
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	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	N/A

APPENDIX B: VERIFIERS CV'S

Work carried out by:

Kateryna Zinevych, M.Sci. (environmental science)

Climate Change Verifier

Bureau Veritas Ukraine Health, Safety and Environment Project Manager

Kateryna Zinevych has graduated from National University of Kyiv-Mohyla Academy with the Master Degree in Environmental Science. She has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. She has undergone a training course on Clean Development Mechanism /Joint Implementation and she is involved in the determination/verification of 26 JI projects.

Topchiy Rostislav, Ecology Specialist

Team Member, Climate Change Verifier
Bureau Veritas Ukraine Health, Safety and Environment Department, Project Manager.

Has received extensive training in the CDM and JI validation (determination) processes. He has an academic background in chemical and ecological engineering. He is also auditor for ISO 9000, ISO 14000 and OHSAS 18001.

Igor Antipko (Mining Electro-Mechanics)
Team Leader, Bureau Veritas Ukraine Technical Specialist, Climate Change Verifier

Graduated from Stahanov College of Mines, specialist in Mining Electro-Mechanics (Automation processes of production of minerals, development of the circuits of electrosupply of mines, management of chisel and explosive works in mines). Completed full course of the Labour protection and Safety, was employed at the position of the Mine mechanic on repair of the equipment, Mine underground electromechanic (service and repair of mechanisms and equipment, lines of transportation of the electric power in mine of extraction stone coal, service and repair of gas analyzer of methane, monitoring and repair mine of air control devices).

The verification report was reviewed by:

Ivan G. Sokolov, Dr. Sci. (biology, microbiology)
Climate Change Lead Verifier

Bureau Veritas Certification Holding SAS Operational Manager.

Ivan Sokolov has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead Auditor of Bureau Veritas Certification for Environment Management Systems (IRCA registered), Quality Management Systems (IRCA registered), Occupational Health and Safety Management Systems, and Food Safety Management Systems. Mr. I.Sokolov has performed over 140 audits since 1999. He is a Lead Tutor of IRCA registered ISO 14000 EMS Lead Auditor Training Course, Lead Tutor of IRCA registered ISO 9000 QMS Lead Auditor Training Course. Ivan Sokolov is also a Tutor of Join Implementation/Clean Development Lead Verifier Training Course and has performed determination/verification of more that 50 JI projects.