VERIFICATION AND CERTIFICATION REPORT

Mitsubishi Corporation

Kaifeng Jinkai N_2O Abatement Project

Monitoring Period: 11/09/2007 – 31/12/2007

SGS Climate Change Programme
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Kaifeng Jinkai N_2O Abatement Project	
Organisation:	**Client:**
SGS United Kingdom Limited	Mitsubishi Corporation
Publication of Monitoring Report:	
Monitoring Period:	11/09/2007 – 31/12/2007
First Monitoring Report version and Date:	Version 01, dated 04-01-2008
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Summary:

SGS United Kingdom Ltd has performed the preliminary and the 1st periodic verification for the CDM project 'Kaifeng Jinkai N_2O Abatement Project', UNFCCC Reference Number 0837. The verification includes confirming the implementation of the monitoring plan of the registered PDD, UNFCCC Reference Number 0837 and the application of the monitoring methodology as per AM0028 version 3. Site visit was conducted respectively for the preliminary verification to verify the monitoring and management system and for the 1st periodic verification to verify the data and activities submitted in the monitoring report.

The project is to reduce N_2O emissions in the tail gas of the registered medium-pressure HNO_3 production line at Jinkai plant by installation and operation of a tertiary catalytic DeN_2O system which has no interference with the HNO3 production process. The technologies are provided by Sumiko Eco-Engineering and N.E. Chemcat.

In Jinkai plant, a SCR DeNOx unit was already in place prior to the DeN_2O project and is kept using in order to comply with the NO_X regulation in China. In this project, some amount of natural gas is used not as reducing agent but as fuel for reheating the tail gas before entering the DeN_2O unit; electricity is used not as reheating energy but as power source for equipments such as fans.

SGS confirms that the project is implemented in accordance with the validated and registered Project Design Document. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the implementation of the project has resulted in **46,262** tCO2e emission reductions during period 11/09/2007 to 31/12/2007.

Subject:

CDM Verification

Verification Team:

Linda Hu Mudan – Lead Assessor
Julian Zhou Jun – Assessor

Technical Review:	**Trainee Technical Reviewer:**
Date: 11/11/2008 Name: Siddharth Yadav	Date: 16/09/2008 and 22/10/2008 Name: Qi Yang

Authorised Signatory:

Name: Siddharth Yadav
Date: 20th November 2008

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Abbreviations

AMS	Automated Measuring System
AOR	Ammonia Oxidization Reactor
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
COP/MOP	Conference of Parties / Meeting of Parties
DAS	Data Acquisition System
DeN_2O	N_2O abatement
DeNOx	NO_x abatement
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board of the Clean Development Mechanism
EF	Emission Factor
EMS	Environmental Management System
GC	Gas Chromatograph
GHG	Greenhouse Gas
GWP	Global Warming Potential
IETA	International Emission Trading Association
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
MT	Metric Tonne
NDIR	Non-dispersion infrared absorption analyzer
NG	Natural Gas
NIR	New Information Request
PDD	Project Design Document
PP	Project Participants
PPMV	Volumetric Part per Million
SGS	Société Générale de Surveillance
UNFCCC	United Nations Framework Convention on Climate Change
atm	Atmospheric pressure

Table of Content

1. Introduction

1.1 Objective

SGS United Kingdom Ltd has been contracted by Mitsubishi Corporation to perform an independent verification of its CDM project 'Kaifeng Jinkai N_2O Abatement Project'. CDM projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The emissions report conforms with the requirements of the monitoring plan in the registered PDD and the approved methodology; and
- The data reported are complete and transparent.

1.2 Scope

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on the validated and registered project design document and the monitoring report. The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

SGS has, based on the recommendations in the Validation and Verification Manual, employed a risk-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

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 design.

1.3 Project Activity and Period Covered

This engagement covers emissions and emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the following project and period.

Title of Project Activity:	Kaifeng Jinkai N_2O Abatement Project
UNFCCC Registration Number:	0837
Monitoring Period Covered in this Report	11/09/2007 to 31/12/2007
Project Participants	Kaifeng Jinkai Chemical Industry Co., Ltd
	Mitsubishi Corporation
Location of the Project Activity:	The west section of Xinsong Road, Kaifeng City, Henan Province, People's Republic of China

The project is to reduce N_2O emissions in the tail gas of the registered medium-pressure HNO_3 production line at Jinkai plant by installation and operation of a tertiary catalytic DeN_2O system which has no interference with the HNO3 production process. The technologies are provided by Sumiko Eco-Engineering and N.E. Chemcat.

In Jinkai plant, a SCR DeNOx unit was already in place prior to the DeN_2O project and is kept using in order to comply with the NO_X regulation in China. In this project, some amount of natural gas is used not as reducing agent but as fuel for reheating the tail gas before entering the DeN_2O unit; electricity is used not as reheating energy but as power source for equipments such as fans.

2. Methodology

2.1 General Approach

SGS' approach to the verification is a two-stage process.

In the first stage, SGS completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

At the end of this stage, SGS produced a Periodic Verification Checklist which, based on the risk assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

Using the Periodic Verification checklist, SGS verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the monitoring report. This verification report describes the findings of this assessment.

2.2 Verification Team for this Assessment

Name	Role	SGS Office
Linda Hu Mudan	Lead Assessor	SGS China
Julian Zhou Jun	Assessor	SGS China

2.3 Means of Verification

2.3.1 Review of Documentation

The validated PDD, the monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 8 of this report.

2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed

Location: Kaifeng Jinkai Chemical Industry Co., Ltd	
Date: 28/06/2007-29/06/2007	
Coverage: Preliminary Verification	**Source of information / Persons interviewed**
Review on installation chart of the entire CDM project Visual inspection on key physical components and spatial configuration of the operating and monitoring system of the entire CDM project Collection and review on: interlock settings; data collection, transmission, processing, archiving schemes for each parameter; data emergency plan; inventory and calibration certificates of measurement instruments; staff training and competency etc.	Mr. Niu Hongkuan, General Manager of Kaifeng Jinkai Chemical Industry Co., Ltd Mr. Zhang Shihao, CDM project manager of Jinkai Mr. Liu Guohui, plant operation manager of Jinkai Mr. Gong Jiahong, CDM monitoring supervisor Mr. Kenji Matsubayashi, Assistant General Manager of Mitsubishi Corporation Mr. Lau Tingsing, Department Manager of Mitsubishi Corporation Mr. He Tengwei, Engineer of ABB

Location: Kaifeng Jinkai Chemical Industry Co., Ltd	
Date: 22/01/2008-23/01/2008	
Coverage: 1st periodic verification	**Source of information / Persons interviewed**
Interview with project participants, review of monitoring and operation status in this monitoring period. Review on DCS data and curves, daily event log and monthly statistics. Visual check on physical and spatial configurations of the project activity. Collection of calibration certificates and maintenance records of concerned measurement instruments. Inspection on established practices.	Mr. Zhang Shihao, CDM project manager of Jinkai Ms. Qiao Chunli, QA/QC manager of Jinkai Mr. Liu Guohui, CDM operation manager of Jinkai Mr. Gong Jiahong, CDM monitoring supervisor Mr. Wang Kege, CDM maintenance supervisor Mr. Lau Tingsing, Department Manager of Mitsubishi Corporation

2.4 Reporting of Findings

As an outcome of the verification process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the team shall raise a New Information Request (NIR) specifying what additional information is required.

Where a non-conformance arises the team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

I. the verification is not able to obtain sufficient evidence for the reported emission reductions or part of the reported emission reductions. In this case these emission reductions shall not be verified and certified;

II. the verification has identified misstatements in the reported emission reductions. Emission reductions with misstatements shall be discounted based on the verifiers ex-post determination of the achieved emission reductions

The verification process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification actors. These have no impact upon the completion of the verification activity.

Corrective Action Requests and New Information Requests are detailed in Periodic Verification Checklist. The Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

2.5 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment Team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3. Verification Findings

3.1 Project Documentation and Compliance with the Registered PDD

The project was registered on 07/04/2007 with the crediting period as from 11/09/2007 to 10/09/2014. This is the 1st periodic verification covering the period of 11/09/2007 – 31/12/2007.

The project was registered against AM0028 version 3. The monitoring methodology has been correctly applied and the documents for this periodic verification are complete and transparent. QA/QC procedures stipulated in the Monitoring Plan have been followed.

The physical and spatial configuration of the project has been checked during site visits. The project boundary was consistent with one identified in the registered PDD.

3.2 Monitoring Results

NIR 1 from the preliminary verification was raised asking PP to provide the procedure for monitoring of N_2O concentration during malfunction of an online Non-dispersion infrared absorption analyzer (NDIR). PP in response clarified that for a failure of the monitoring system, the maintenance team will call out ABB specialist while informing the monitoring team that they should use the backup gas chromatograph to start to record analysis values until the automatic monitoring system can be repaired and brought back on line. The emergency plan during malfunction of NDIR has been provided and documented in the CDM Monitoring manual. NIR 1 was closed out.

NIR 2 from the preliminary verification was raised asking clarification on the frequency of checking NDIR by sampling with Gas Chromatography (GC) as per methodology. PP in response clarified that as per AM0028 version 3, calibration was required by a third part to determine a) uncertainty, b) variability. This calibration check was performed after initial commissioning by 3rd party and then every month with GC by monitoring team. The test for the analysers has to be carried out against the standard reference method in this case a gas chromatograph and standard flow monitoring device. Sample points have been installed for this purpose into the process plant. NIR 2 was closed out.

Down times, anomalies and malfunctions of the DeN_2O unit and/or measurement instruments and/or Data Acquisition System (DAS) were reported in detail in a spreadsheet entitled 'Raw data and CER calculation' (hereinafter referred to as 'the spreadsheet') attached to this report. As demonstrated in the spreadsheet, conservative calculation of emission reduction was carried out for respective periods as per AM0028 version 3.

The Monitoring Report version 1 (MR version 1) did not provide sufficient information on actual activities and data occurred in this monitoring period, the data acquisition of each parameter and calculation approach of baseline emission, project emission, leakage was also unclear. So CAR 1 from the 1st periodic verification was raised asking restructure the MR and elaborate on the actual situation in this monitoring period instead of repeating contents in the PDD, i.e. a clear technical description and flow chart of the N_2O abatement project, indicating the location and configuration of the Automated Measuring System; the monitoring results of each parameter stipulated in the registered Monitoring Plan; a clear description on how the baseline emission, project emission, leakage and emission reduction was acquired from the monitored data etc. CAR 1 was closed out after the actual activities and data in this monitoring period correctly reflected in the revised MR version 2 and the data and calculation in the spreadsheet verified as appropriate.

CAR 2 from the 1st periodic verification was raised asking PP to correct the various typo and wording issues in the MR version 1, e.g. project title inconsistent with the one in the PDD etc. CAR 2 was closed out with the typo and wording issues were corrected in the revised MR version 2.

NIR 1 from the 1st periodic verification was raised asking PP to provide the performance certificate pf components of the Automated Measuring System (AMS) according to EN14181 QAL1 as per AM0028 version 3. NIR 1 was closed out with the requested QAL1 certificates provided and verified as appropriate.

NIR 2 from the 1st periodic verification was raised asking PP to provide the continuous data of Tg, Pg, Aor and information on the supplier and composition of the ammonia oxidization catalyst in this monitoring period.

NIR 2 was closed out with the raw DAS data of Tg, Pg, Aor and the supplier and composition of the ammonia oxidization catalyst in this monitoring period has been provided and described in the revised MR version 2, and verified as in line with the description in the MR version 2.

NIR 3 from the 1st periodic verification was raised asking PP to calculate the SE_{N2O} of this monitoring period as a reference for future monitoring periods as per AM0028 version 3. SE_{N2O} of this monitoring period was calculated as 13.2kgN_2O/tHNO_3 in the revised MR version 2 and as a reference for future monitoring periods. NIR 3 was closed out.

According to AM0028 version 3, 'The value adopted for Quantity of N_2O at the inlet of the destruction facility should be calculated considering conservatively the error included in the measurement'. Thus, NIR 4 from the 1st periodic verification was raised asking clarify how this requirement was fulfilled in the calculation of inlet N_2O. PP in response clarified that the value adopted for Quantity of N_2O at the inlet of the destruction facility was corrected considering conservatively the error in the measurement based on the combined uncertainty of the applied monitoring equipments at the inlet of the destruction facility (identified by QAL2 test). It is verified as conservative as per the methodology AM0028 version 3. NIR 4 was thus closed out.

Leakage is excluded from consideration in the PDD by saying 'the amount of leakage is excluded as monitoring would lead to unreasonable costs as defined in AM0028 version 3.' However, the AM0028 version 3 also stipulates that ''Leakage emissions need be analyzed if the project activity does not involve any energy recovery from the tail gas. If an installation for energy utilization at the end of the pipe is missing, leakage is given by: LEy = LEs,y + LE_{TGU},y + LE_{TGH},y.' NIR 5 from the 1st periodic verification was raised asking clarification on the actual project circumstance to substantiate the exclusion of leakage emissions. PP in response clarified that not any net change for steam export, tail gas utilization and tail gas heating activity between the baseline and project scenario, hence leakage was calculated to be zero. The elaboration on leakage was reflected in the revised Monitoring Report (Section 5.2: Project Boundary and Section 9: GHG Calculation). NIR 5 was closed out.

3.2.1 $F_{TE,i}$: Volume flow rate at the exit of the destruction facility (m^3/h)

This parameter is measured continuously by a volume flow meter installed at outlet of the DeN_2O unit with instantaneous temperature and pressure compensating to normalized condition (0°C, 1atm). The DAS records cumulative data hourly and gives the actual volume in each hour. The hourly volume is to be multiplied with the corresponding N_2O concentration at DeN_2O unit outlet ($CO_{N2O,i}$) as discussed in section 3.2.2 below to get the hourly N_2O emission at the exit of the destruction facility, which can be accumulated for any selected period.

The raw hourly $F_{TE,i}$ is exported from the onsite DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence.

The flow meter was calibrated by an officially accredited entity on 15/08/2007 and the calibration is valid for 12 months. Malfunction of the flow meter during this monitoring period is explicitly described in the spreadsheet and conservative calculation was carried out for respective periods and verified as appropriate.

3.2.2 $CO_{N2O,i}$: N_2O concentration at destruction facility outlet (tN_2O/m^3)

This parameter is measured continuously by an online Non-dispersion infrared absorption analyzer (NDIR) at outlet of the DeN_2O unit with a measuring range set as 0~500ppmv. The DAS records the instantaneous concentration and gives the average value in each hour. The hourly concentration is to be multiplied with the corresponding volume flow rate ($F_{TE,i}$) as discussed in section 3.2.1 above to get the hourly N_2O emission at the exit of the destruction facility, which can be accumulated for any selected period. And as per AM0028 version 3, Gas Chromatography (GC) was used to check the NDIR by sampling monthly.

The raw hourly $CO_{N2O,i}$ is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence.

The NDIR was calibrated by an officially accredited entity on 18/08/2007 and the calibration is valid for 12 months. Malfunction of the NDIR during this monitoring period is explicitly described in the spreadsheet and conservative calculation was carried out for respective periods and verified as appropriate.

3.2.3 $P_{product,y}$: plant output of HNO_3 ($tHNO_3/yr$)

This parameter is derived from volumetric flow measured by flow meter, density measured by densimeter and concentration measured by titration instruments. The DAS records cumulative flow data hourly and gives the actual volume in each hour. The volume, density and concentration are multiplied together to get the hourly pure HNO_3 production, which can be accumulated for any selected period.

The raw hourly flow data is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence.

The flow meter was calibrated on 23/07/2007 and the calibration is valid for 12 months. The flow meter was in good condition in this monitoring period. The density and concentration analysis was performed by experienced operators.

Nitric acid produced from the registered medium pressure line is not for sell but used as raw material for the subsequent production of ammonium nitrate, nitro phosphate, sodium nitrate etc. wthin the company, thus there is no marketing data in this project. Daily nitric acid consumption by the subsequent production processes and the stock change in the buffering tank is measured and recorded in daily internal transaction records, which were provided for verification during site visit. The daily consumed nitric acid and stock change data are used for crosscheck with the direct measured value of CDM pant output of HNO_3.

3.2.4 $F_{TI,i}$: volume flow rate at the inlet of the destruction facility (m^3/h)

AM0028 version 3 states that the presence of a SCR DeNOx unit tends to increase the N_2O emissions, this fact has been proved during site visit by comparison of historical N_2O concentration data at inlet and outlet of the SCR DeNOx unit (outlet>inlet). Therefore the measurement of N_2O flow and concentration at the inlet of the SCR DeNOx unit represents a conservative determination of the baseline N_2O emissions.

This parameter is measured continuously by a volume flow meter installed at inlet of the SCR DeNOx unit with instantaneous temperature and pressure compensating to normalized condition (0^oC, 1atm). The DAS records cumulative data hourly and gives the actual volume in each hour. The hourly volume is to be multiplied with the corresponding N_2O concentration ($CI_{N2O,i}$) as discussed in section 3.2.5 below to get the hourly N_2O quantity at inlet of the SCR DeNOx unit, which can be accumulated for any selected period.

The raw hourly $F_{TI,i}$ is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence.

The flow meter was calibrated by an officially accredited entity on 15/08/2007 and the calibration is valid for 12 months. Malfunction of the flow meter during this monitoring period is explicitly described in the spreadsheet and conservative calculation was carried out for respective periods and verified as appropriate.

3.2.5 $CI_{N2O,i}$: N_2O concentration at destruction facility inlet (tN_2O/m^3)

This parameter is measured continuously by an online Non-dispersion infrared absorption analyzer (NDIR) installed at inlet of the SCR DeNOx unit with a measuring range set as 0~3000ppmv. The DAS records the instantaneous concentration and gives the average value in each hour. The hourly concentration is to be multiplied with the corresponding volume flow rate ($F_{TI,i}$) as discussed in section 3.2.4 above to get the hourly N_2O quantity at inlet of the SCR DeNOx unit, which can be accumulated for any selected period. And as per AM0028 version 03, Gas Chromatography (GC) was used to check by sampling monthly.

The raw hourly $CI_{N2O,i}$ is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence.

The NDIR was calibrated by an officially accredited entity on 18/08/2007 and the calibration is valid for 12 months. Malfunction of the NDIR during this monitoring period is explicitly described in the spreadsheet and conservative calculation was carried out for respective periods and verified as appropriate.

3.2.6 T_g: actual operating temperature of the ammonia oxidation reactor (^oC)

According to the AM0028 version 3, this parameter is monitored to avoid manipulation in the operation of the nitric acid production plant to increase the N_2O generation. If the actual average daily operating temperature in the ammonia oxidation reactor (Tg) is outside the “permitted range” identified in the registered PDD, the baseline emissions are calculated for the respective period based on lower value between (a) the

conservative IPCC default values as 4.5kgN_2O/tonne of nitric acid (b) $SE_{N2O,y}$ and (c) any related value as a result of legal regulations.

This parameter is measured continuously by a thermocouple, the DAS records the online temperature and gives hourly and daily average value. The raw daily Tg is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence. All the daily Tg were within the "permitted range" as 823 ^oC~850 ^oC in the registered PDD.

The thermocouple was calibrated on 06/08/2007 and the calibration is valid for 12 months. The thermocouple was in good condition in this monitoring period.

3.2.7 P_g: actual operating pressure of the ammonia oxidation reactor (Pa*)*

Same as Tg, this parameter is monitored to avoid manipulation in the operation of the nitric acid production plant to increase the N_2O generation. If the actual average daily operating pressure in the ammonia oxidation reactor (Pg) is outside the "permitted range" identified in the registered PDD, the baseline emissions are calculated for the respective period based on lower value between (a) the conservative IPCC default values as 4.5kgN_2O/tonne of nitric acid (b) $SE_{N2O,y}$ and (c) any related value as a result of legal regulations.

This parameter is measured continuously by a pressure transmitter, the DAS records the online pressure and gives hourly and daily average value. The raw daily Pg is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence. All the daily Pg were within the "permitted range" as 0.23MPa~0.317MPa in the registered PDD.

The pressure transmitter was calibrated on 09/02/2007 and the calibration is valid for 12 months. The transmitter was in good condition in this monitoring period.

3.2.8 G_{sup}: supplier's name of the ammonia oxidization catalyst

It is monitored to avoid manipulation in the operation of the nitric acid production plant to increase the N_2O generation. The purchase contracts of previous campaigns and last replacement on 05/09/2007 have been provided, the supplier was always the same as given in the registered PDD.

Hence no limitation of N_2O baseline emissions is needed for this monitoring period.

3.2.9 G_{com}: composition of the ammonia oxidization catalyst (%)

It is monitored to avoid manipulation in the operation of the nitric acid production plant to increase the N_2O generation. The quality certificates of previous campaigns and last replacement on 05/09/2007 as the first composition used for the crediting period have been provided, the composition of the ammonia oxidization catalyst was always in the same range as given in the registered PDD, this avoids gaming at the beginning of the project activity.

Hence no limitation of N_2O baseline emissions is needed for this monitoring period.

3.2.10 $A_{or,d}$: actual ammonia flow rate to the ammonia oxidation reactor (tNH_3/day)

It is monitored to avoid manipulation in the operation of the nitric acid production plant to increase the N_2O generation. If the actual daily ammonia flow rate exceeds the upper limit on maximum historical daily permitted ammonia flow rate, the baseline emissions for this operating day are calculated based on the conservative IPCC default values and are limited by the legal regulations.

This parameter is measured continuously by a volume flow meter installed at the ammonia feeding pipeline with instantaneous temperature and pressure compensating to normalized condition (0^oC, 1atm). The DAS records cumulative data hourly and gives the actual volume in each hour. The daily volume is then derived from the hourly data.

The raw hourly $A_{or,d}$ is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence. All the daily $A_{or,d}$ were below the "upper limit" as 86.5t/d in the registered PDD.

The flow meter was calibrated by an officially accredited entity on 23/07/2007 and the calibration is valid for 12 months. The flow meter was in good condition in this monitoring period.

3.2.11 $Q_{NG,y}$: natural gas input (m^3)

Some amount of natural gas is used in this project as fuel for reheating the tail gas before entering the DeN_2O unit. The NG input is measured continuously by a volume flow meter installed at inlet of the DeN_2O unit with instantaneous temperature and pressure compensating to normalized condition (0^oC, 1atm). The DAS records cumulative data hourly and gives the actual volume in each hour, which can be accumulated for any selected period.

The raw hourly $Q_{NG,y}$ is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence.

The flow meter was calibrated by an officially accredited entity on 24/05/2007 and the calibration is valid for 12 months. The flow meter was in good condition in this monitoring period.

3.2.12 $Q_{HC,y}$: natural gas, with two or more molecules of carbon input (m^3)

This parameter is used in the calculation of project emissions in form of CO_2. It is derived from the flow rate and the methane concentration of the natural gas, calculation as: $Q_{HC,y} = Q_{NG,y} *(1–C_{CH4,y}/100)$. The value of $C_{CH4,y}$ (methane concentration of the natural gas) is verified as 95.439% as per the ingredient report provided by the NG supplier.

3.2.13 $Q_{CH4,y}$: methane used (m^3)

This parameter is used in the calculation of project emissions in form of both CO_2 and CH_4. It is derived from the flow rate and the methane concentration of the natural gas, calculation as: $Q_{CH4,y} = Q_{NG,y}*(C_{CH4,y}/100)$. The value of $C_{CH4,y}$ (methane concentration of the natural gas) is verified as 95.439% as per the ingredient report provided by the NG supplier.

3.2.14 ρ_{HC} : density of the natural gas, with two or more molecules of carbon (t/m^3)

This parameter is used in the calculation of project emissions in form of CO_2. It is the value in normalized condition (0^oC, 1atm), calculated from the ingredient of the natural gas, the calculation process and result is explicitly demonstrated in the spreadsheet and verified as correct.

3.2.15 ρ_{CH4} : density of methane (t/m^3)

This parameter is used in the calculation of project emissions in form of both CO_2 and CH_4. It is the value in normalized condition (0^oC, 1atm) and is a constant as $0.000714 t/Nm^3$.

3.2.16 $CO_{CH4,i}$: methane concentration at destruction facility outlet (ppmv)

This parameter is used in the calculation of $OXID_{CH4,I}$ as discussed in section 3.2.17 below. It is measured continuously by an online Non-dispersion infrared absorption analyzer (NDIR) at outlet of the DeN_2O unit with a measuring range set as 0~100ppmv. The DAS records the instantaneous concentration and gives the average value in each hour. The hourly concentration is to be multiplied with the corresponding stack volume flow rate ($F_{TE,i}$) as discussed in section 3.2.1 above to get the hourly CH_4 emission at the outlet of the destruction facility.

The raw hourly $CO_{CH4,i}$ is exported from the DAS into the spreadsheet with presence of SGS assessors and saved as raw data evidence.

The NDIR was calibrated by an officially accredited entity on 18/08/2007 and the calibration is valid for 12 months. Malfunction of the NDIR during this monitoring period is explicitly described in the spreadsheet and conservative calculation was carried out for respective periods and verified as appropriate.

3.2.17 $OXID_{CH4,i}$: oxidation factor of methane (%)

This parameter is used in the calculation of project emissions in form of both CO_2 and CH_4. It is the value in normalized condition (0^oC, 1atm), calculated from $CO_{CH4,i}$, $Q_{CH4,y}$ and $F_{TE,i}$ as: $OXID_{CH4} =(1-\sum_{i=1}^{n} [F_{TE,i} * CO_{CH4,i} *(16/22.4)*10^{-6}*M_i]/Q_{CH4})*100$, the calculation process and result is explicitly demonstrated in the spreadsheet and verified as correct.

3.2.18 EF_{HC} : emission factor of the natural gas, with two or more molecules of carbon (tCO_2/tHC)

This parameter is used in the calculation of project emissions in form of CO_2. It is calculated from the ingredient of the natural gas, the calculation process and result is explicitly demonstrated in the spreadsheet and verified as correct.

3.2.19 EF_{CH4} : emission factor of methane (tCO_2/tCH_4)

This parameter is used in the calculation of project emissions in form of both CO_2. It is a constant as $2.75tCO_2/tCH_4$ as per methane oxidation equation.

3.3 Remaining Issues, CAR's, NIR's from Previous Validation or Verification

No remaining issues, CARs or NIRs from validation process, it is the first periodic verification.

3.4 Project Implementation

Project was implemented and equipments installed as described in the validated PDD; the catalytic N_2O destruction is stable with expected performance when it is operating while some malfunctions of measurement instruments and data transmission system have occurred during this starting phase of the project activity which has been explicitly described in the spreadsheet and conservative approaches were carried out for respective period.

3.5 Completeness of Monitoring

The reporting procedures reflect the content of the monitoring plan. The monitoring mechanism and data emergency plan is effective and reliable.

Kaifeng Jinkai Chemical Industry Co., Ltd has dedicated staffs for the routine inspection and maintenance of the monitoring system. Permanent quality assurance and assurance of reliable and correct operation of the monitoring equipment are conducted by the operating staffs which are well trained by ABB (supplier of the monitoring system). All the inspection and maintenance activities are recorded in the CDM instruments maintenance log which has been provided for verification during site visit.

Regarding the regular controls of zero point, span, drift, the ABB monitoring instruments firstly have the function of automatic daily zero and span check which ensures permanent accuracy during their normal operation; in addition, zero and span check is also manually regularly conducted by site operator and recorded in the CDM instruments maintenance log.

In case of a failure / anomaly of monitoring instrument / system, Kaifeng Jinkai immediately informed ABB specialist to come on site to solve the problem. ABB's service reports for each time have been provided for verification during site visit.

QAL2 calibration was performed by TUV SUD in Dec 2007 according to AM0028 version 3 and EN14181. The starting date of the operation of this project is 11/09/2007. Up to the end of first monitoring period (11/09/2007 – 31/12/2007), only four months passed. There was no annual functionality test performed during this monitoring period.

3.6 Accuracy of Emission Reduction Calculations

The calculation of emission reductions is found to be correct in the MR version 2. One CAR was raised regarding the accuracy of emission reduction calculations. The details of the reported and the verified values for all parameters are listed in section 1.

The QAL2-Calibration according EN14181 of the AMS was conducted by an accredited quality and the calibration report was provided for verification. The combined uncertainty of the N_2O analyzer and flow meter at inlet of the destruction facility was deducted from the actual amount of N_2O at the inlet in accordance with the requirement of AM0028 version 3 that 'the value adopted for Quantity of N_2O at the inlet of the destruction facility should be calculated considering conservatively the error included in the measurement.'.

3.7 Quality of Evidence to Determine Emission Reductions

All parameters used for the determination of the Emission Reductions are discussed in section 3.2 and section 4. All raw data evidences are in accordance with the final monitoring report.

3.8 Management System and Quality Assurance

CDM activity was managed as per the PDD and QA/QC procedure for each parameter was strictly followed according to the monitoring plan.

3.9 Data from External Sources

The external data for this project are:

(1) GWP_N_2O: 310 according to AM0028 version 3.

(2) GWP_CH_4: 21 according to AM0028 version 3.

(3) $OXID_{HC}$: 100% for conservativeness in calculating CO_2 emissions.

4. Calculation of Emission Reductions

Item	Reported Value	Verified Value
[1] $F_{TE,i}$ (m^3/h)	N/A	Hourly data used for calculation in the attached spreadsheet
[2] $CO_{N2O,i}$ (tN_2O/m^3)	N/A	Hourly data used for calculation in the spreadsheet
[3] $P_{product,y}$ ($tHNO_3$)	N/A	12137
[4] $F_{TI,i}$ (m^3/h)	N/A	Hourly data used for calculation in the spreadsheet
[5] $CI_{N2O,i}$ (tN_2O/m^3)	N/A	Hourly data used for calculation in the spreadsheet
[6] T_g (^oC)	N/A	Daily data used for comparison with 'permitted range' in the spreadsheet
[7] P_g (Pa)	N/A	Daily data used for comparison with 'permitted range' in the spreadsheet
[8] G_{sup}	N/A	China Chemical Industry Supply & Sales Taiyun Precious Metal Co., Ltd.
[9] G_{com} (%)	N/A	Pt: 92.45(%); Rh: 3.62(%); Pd: 3.93(%)
[10] $A_{or,d}$ (tNH_3/day)	N/A	Daily data used for comparison with 'permitted range' in the spreadsheet
[11] $Q_{NG,y}$ (m^3)	N/A	29712
[12] $Q_{HC,y}$ (m^3)	N/A	1355
[13] $Q_{CH4,y}$ (m^3)	N/A	28357
[14] ρ_{HC} (t/m^3)	N/A	0.001678
[15] ρ_{CH4} (t/m^3)	N/A	0.000714
[16] $CO_{CH4,i}$ (ppmv)	N/A	Hourly data used for calculation in the spreadsheet
[17] $OXID_{CH4,i}$ (%)	N/A	Daily data used for calculation in the spreadsheet
[18] EF_{HC} (tCO_2/tHC)	N/A	1.91
[19] EF_{CH4} (tCO_2/tCH_4)	N/A	2.75

$ER_y = BEy – PE_y – L_y$

= 49,817 – (3,458 + 42 + 55) – 0

= 46,262 $tCO2_e$

5. Recommendations for Changes in the Monitoring Plan

No recommendation.

6. Overview of Results

Assessment Against the Provisions of Decision 17/CP.7:

Is the project documentation in accordance with the requirements of the registered PDD and relevant provision of decision 17/CP.7, EB decisions and guidance and the COP/MOP?

Yes. The results of the compliance assessment are recorded in the verification checklist which is used as an internal report only.

Have on-site inspections been performed that may comprise, inter alia, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observations of established practices and testing of the accuracy of monitoring equipment?

Yes. Linda Hu Mudan and Julian Zhou Jun visited the site and undertook interviews, collected data, audited the implementation of procedures, checked calibration certificates and checked data, inter alia.

The results of the site visit are recorded in the verification checklist which is used as an internal report only.

The evidences have been checked and collected. The revised monitoring report is attached with this verification report.

Has data from additional sources been used? If yes, please detail the source and significance.

Yes, external data for this project are: (1) GWP_N_2O as 310 according to AM0028 version03; (2) GWP_CH_4 as 21 according to AM0028 version03; (3) $OXID_{HC}$ as 100% for conservativeness in calculating CO_2 emissions. Only the GWP_N2O is deemed to be significant to determine the emission reductions by this project.

Please review the monitoring results and verify that the monitoring methodologies for the estimation of reductions in anthropogenic emissions by sources have been applied correctly and their documentation is complete and transparent.

Yes. The monitoring methodology has been correctly applied and the monitoring report and supporting references are complete and transparent.

Have any recommendations for changes to the monitoring methodology for any future crediting period been issued to the project participant?

No.

Determine the reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CDM project activity, based on the data and information using calculation procedures consistent with those contained in the registered project design document and the monitoring plan.

*The data used in anthropogenic emission reduction calculation is consistent with those contained in the registered PDD and monitoring plan. The actual emission reduction has been verified as **46,262 tCO2** for the period 11/09/2007 to 31/12/2007.*

Identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Project participants shall address the concerns and supply relevant additional information.

No such non conformity of the actual project activity and its operation with the registered project design document has been observed.

Post monitoring report on UNFCCC website

Yes, the monitoring report is available at ref. 0837 on UNFCCC website

http://cdm.unfccc.int/Projects/DB/DNV-CUK1167377857.62/iProcess/SGS-UKL1199783610.58/view

7. Verification and Certification Statement

SGS United Kingdom Ltd has been contracted by Mitsubishi Corporation to perform the verification of the emission reductions reported for the CDM project 'Kaifeng Jinkai N_2O Abatement Project', UNFCCC reference number 0837 in the period 11/09/2007 to 31/12/2007.

The verification is based on the validated and registered project design document and the monitoring report for this project. Verification is performed in accordance with section I of Decision 3/CMP.1, and relevant decisions of the CDM EB and CoP/MoP. The scope of this engagement covers the verification and certification of greenhouse gas emission reductions generated by the above project during the above mentioned period, as reported in 'Monitoring Report No.1 of Kaifeng Jinkai N_2O Abatement Project', version 2 dated 15/05/2008.

The management of Mitsubishi Corporation is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Monitoring Report version 2 dated 15/05/2008. Calculation and determination of GHG emission reductions from the project is the responsibility of the management of the 'Kaifeng Jinkai N_2O Abatement Project'. The development and maintenance of records and reporting procedures are in accordance with the monitoring report.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 11/09/2007 to 31/12/2007 based on the reported emission reductions in the Monitoring Report version 2 dated 15/05/2008 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, SGS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

SGS confirms that the project is implemented as described in the validated and registered project design documents. Based on the information we have seen and evaluated, we confirm the following:

Project Title:	Kaifeng Jinkai N_2O Abatement Project
UNFCCC Reference Number:	0837
Registered and Approved PDD used for Verification:	Version 13, dated 23/01/2007
Methodology used for Verification:	AM0028 version 3
Applicable Period:	11/09/2007 - 31/12/2007
Total GHG Emission Reductions Verified:	46,262 tCO_2e

Signed on behalf of the Verification Body by Authorized Signatory

Signature:

Name: Siddharth Yadav

Date: 20th November 2008

8. Document References

/1/ AM0028 version 3
/2/ Registered PDD version13 dated 23/01/2007
/3/ Monitoring Report No.1 version 1 dated 04/01/2008
/4/ Monitoring Report No.1 version 2 dated 15/05/2008
/5/ Detailed installation chart of the CDM project
/6/ Inventory of monitoring instruments involved in the CDM project
/7/ Specification and calibration certificates of above instruments
/8/ Accreditation certificates of the calibration entities
/9/ CDM Monitoring Manual
/10/ Detailed data collection, transmission, processing, archiving scheme for each parameter
/11/ Interlock settings of the N_2O decomposition facility
/12/ Data Emergency Plan in case of malfunctions of monitoring instruments and/or DAS
/13/ Training records and qualification of relevant staffs
/14/ Daily event log of this monitoring period
/15/ Raw DAS data and historical curve of relevant parameters, in combination with the event log
/16/ Raw data and CER calculation spreadsheet
/17/ QAL1 Certificates of the AMS components
/18/ QAL2: Calibration according EN14181 of the AMS
/19/ The purchase contracts and quality certificates of the ammonia oxidization catalyst
/20/ Monitoring Reports of NOx concentration in the effluent gas of the CDM project
/21/ Procedure for survey on regulation and restriction on N_2O emissions in China
/22/ CDM Instruments Maintenance Log covering the period from 11/09/2007 to 31/12/2007
/23/ Automatic daily zero & span check of ABB instruments
/24/ ABB's service reports for each time covering the period from 11/09/2007 to 31/12/2007
/25/ Crosscheck of HNO3 production from registered medium pressure line

A.1 Annex 1: Overview of Findings

I. Findings from the preliminary verification:

Date:	02/07/2007			Raised by:	Julian Zhou		
No.:	01	Type:	NIR 1	Issue:	Monitoring of N_2O concentration during failure of NDIR	Ref.:	B. 6
Lead Assessor Comment					Date: 02/07/2007		
Please provide the procedure for monitoring of N_2O concentration during malfunction of NDIR.							
Project Participant Response:					Date: 20/06/2008		
For a failure of the monitoring system the maintenance team will call out ABB specialist while informing the monitoring team that they should use the back up gas chromatograph to start to record analysis values until the automatic monitoring system can be repaired and brought back on line.							
Acceptance and Close out by Lead Assessor:					Date: 07/08/2008		
Information Provided: 1) CDM Monitoring Manual 2) Data Emergency Plan Information Verified: As above					Verified Document Reference: /9/,/12/		
Reasoning for not acceptance or acceptance and close out: The emergency plan during malfunction of NDIR is provided and is documented in the CDM Monitoring manual. NIR 1 is closed out.							

Date:	02/07/2007			Raised by:	Julian Zhou		
No.:	02	Type:	NIR 2	Issue:	Check NDIR by sampling with GC	Ref.:	Parameter 2 and Parameter 5
Lead Assessor Comment					Date: 02/07/2007		
Please clarify the frequency of checking NDIR by sampling with GC as per methodology.							
Project Participant Response:					Date: 20/06/2008		
According to the methodology AM0028 version 3, calibration is required by a third part to determine a) uncertainty, b) variability. This calibration check is to be performed after initial commissioning by 3rd party and then every month with GC by monitoring team. The test for the analysers has to be carried out against the standard reference method in this case a gas chromatograph and standard flow monitoring device. Sample points have been installed for this purpose into the process plant.							
Acceptance and Close out by Lead Assessor:					Date: 07/08/2008		
Information Provided: 1) CDM Monitoring Manual Information Verified: As above					Verified Document Reference: /9/		
Reasoning for not acceptance or acceptance and close out: The requested information is clarified in accordance with the methodology. NIR2 is closed out.							

II. Findings from the 1st periodic verification:

Date:	15/01/2008			Raised by:	Linda Hu		
No.:	01	Type:	CAR 1	Issue:	Monitoring Report version01	Ref.:	Section 3

Lead Assessor Comment	Date: 15/01/2008
The Monitoring Report version01 (MR version 01) did not provide sufficient information on actual activities and data occurred in this monitoring period, the data acquisition of each parameter and calculation approach of baseline emission, project emission, leakage is also unclear. Please restructure the MR and elaborate on the actual situation in this monitoring period instead of repeating contents in the PDD. This may include, inter alia, a clear technical description and flow chart of the N_2O abatement project, indicating the location and configuration of the Automated Measuring System; the monitoring results of each parameter stipulated in the registered Monitoring Plan; a clear description on how the baseline emission, project emission, leakage and emission reduction is acquired from the monitored data etc.	
Project Participant Response:	Date: 20/06/2008
Information regarding the technical description, flow chart of the N_2O abatement project, location and configuration of the Automated Measuring System is described in the revised Monitoring Report. (Please see the flow diagram in Annex 2 of the revised Monitoring Report.)	
Acceptance and Close out by Lead Assessor:	Date: 07/08/2008
Information Provided: 1) MR version 2 2) Raw data and CER calculation spreadsheet Information Verified: As above.	Verified Document Reference: /4/, /16/
Reasoning for not acceptance or acceptance and close out: The MR version02 is verified to be reflecting the actual activities and data in this monitoring period, the data and calculation in the spreadsheet is also verified as appropriate. CAR1 is thus closed out.	

Date:	15/01/2008			Raised by:	Linda Hu		
No.:	02	Type:	CAR 2	Issue:	Expressions: typo, wordings, structure	Ref.:	Section 3

Lead Assessor Comment	Date: 15/01/2008
Various typo and wording issues in the MR version 1 need to be corrected, e.g. project title inconsistent with the one in PDD, future tense used for what has happened etc.	
Project Participant Response:	Date: 20/06/2008
Corrections in terms of tpyo, wording, tense, project title consistency and etc. have been made in the revised Monitoring Report.	
Acceptance and Close out by Lead Assessor:	Date: 07/08/2008
Information Provided: 1) MR version 2 Information Verified: As above.	Verified Document Reference: /4/

Reasoning for not acceptance or acceptance and close out: Corrections have been made in MR version02, CAR2 is closed out.

Date:	15/01/2008			Raised by:	Linda Hu		
No.:	03	Type:	NIR1	Issue :	EN14181 QAL1 certificates	Ref.:	Section 3
Lead Assessor Comment					Date: 15/01/2008		
Please provide performance certificate of components of the Automated Measuring System according to EN14181 QAL1 as stipulated in AM0028 version 03.							
Project Participant Response:					Date: 20/06/2008		
The QAL1 certificate has been provided.							
Acceptance and Close out by Lead Assessor:					Date: 07/08/2008		
Information Provided: 1) QAL1 certificates of the NDIR analyzers Information Verified: As above.					Verified Document Reference: /17/		
Reasoning for not acceptance or acceptance and close out: Requested QAL1 certificates have been provided and verified as appropriate. NIR1 is closed out.							

Date:	15/01/2008			Raised by:	Linda Hu		
No.:	04	Type:	NIR2	Issue :	Operating conditions in this period	Ref.:	Section 3
Lead Assessor Comment					Date: 15/01/2008		
Please provide continuous data of Tg, Pg and Aor, and information on the supplier and composition of the ammonia oxidization catalyst in this monitoring period.							
Project Participant Response:					Date: 20/06/2008		
The continuous data of Tg, Pg and Aor has been provided. And the information on the supplier and composition of the ammonia oxidization catalyst is described in the revised Monitoring Report.							
Acceptance and Close out by Lead Assessor:					Date: 07/08/2008		
Information Provided: 1) Raw DAS data of Tg, Pg, Aor; 2) The purchase contracts and quality certificates of the ammonia oxidization catalyst Information Verified: As above.					Verified Document Reference: /15/, /19/		
Reasoning for not acceptance or acceptance and close out: Required information is provided and verified as appropriate. NIR2 is closed out.							

Date:	15/01/2008	Raised by:	Linda Hu

No.:	05	Type:	NIR3	Issue :	SE_{N2O} of this monitoring period	Ref.:	Section 3

Lead Assessor Comment	Date: 15/01/2008
Please calculate the SE_{N2O} of this monitoring period as a reference for future monitoring periods as per AM0028 version 03.	
Project Participant Response:	Date: 20/06/2008
This parameter should be used for cap of the baseline emission and calculated as follows based on monitored data (Pprodduct,i,$CI_{N2O,I}$,$F_{TI,i}$,$CO_{N2O,I}$,$F_{TE,I}$,,Aor,d, Tg, Pg) during RCS normal operation hours from 11/09/07 to 31/12/07. It is complemented data (conservatively) in malfunction of N_2O analyzer and tail gas flow meter at the inlet of the destruction facility. *SE_{N2O} =BEy/Pproduct,y/GWPN_2O* *As a result, SE_{N2O} is equal to 13.2kgN_2O/tHNO_3.*	
Acceptance and Close out by Lead Assessor:	Date: 07/08/2008

Information Provided:	Verified Document Reference:
1) MR version02 2) Raw data and CER calculation spreadsheet Information Verified: As above.	/4/, /16/
Reasoning for not acceptance or acceptance and close out: Required information is reflected in the MR version02. NIR3 is closed out.	

Date:	15/01/2008			Raised by:	Linda Hu		
No.:	06	Type:	NIR4	Issue :	Measurement error of inlet N_2O	Ref.:	Section 3

Lead Assessor Comment	Date: 15/01/2008
According to AM0028 version 03, 'The value adopted for Quantity of N_2O at the inlet of the destruction facility should be calculated considering conservatively the error included in the measurement'. Please clarify how this requirement is fulfilled in the calculation of inlet N_2O.	
Project Participant Response:	Date: 20/06/2008
Firstly, with malfunction of N_2O analyzer and tail gas flow meter at the inlet of the destruction facility, the baseline N_2O emissions during the period were conservatively complemented by the conservative default value (4.5kgN_2O/yHNO_3) because all the data during the period, 4.5kgN_2O/yHNO_3 is lower than the last measured by-product rate. *Next, for permitted conditions for AOR, all the time Tg, Pg and Aor,d was within the respective permitted condition (Tg,hist, Pg,hist or Aor,hist).* *Finally,the value adopted for Quantity of N_2O at the inlet of the destruction facility was calculated considering conservatively the error included in the measurement based on the combined uncertainty of the applied monitoring equipment at the inlet of the destruction facility (identified by QAL2 test).*	
Acceptance and Close out by Lead Assessor:	Date: 07/08/2008

Information Provided:	Verified Document Reference:
1) MR version02 2) Raw data and CER calculation spreadsheet 3) QAL2 report Information Verified: As above.	/4/, /16/, /18/
Reasoning for not acceptance or acceptance and close out: The error included in the measurement for the inlet N_2O is deducted from the actual measured quantity, it is conservative as per the methodology. NIR4 is closed out.	

Date:	15/01/2008			Raised by:	Linda Hu		
No.:	07	Type:	NIR5	Issue:	Exclusion of leakage emissions	Ref.:	Section 3

Lead Assessor Comment	Date: 15/01/2008
Leakage is excluded from consideration in the PDD by saying 'the amount of leakage is excluded as monitoring would lead to unreasonable costs as defined in AM0028 version03.' However, the AM0028 Ver03 also stipulates that ''Leakage emissions need be analyzed if the project activity does not involve any energy recovery from the tail gas. If an installation for energy utilization at the end of the pipe is missing, leakage is given by: LEy = LEs,y + LE_{TGU},y + LE_{TGH},y.' Further clarification on the actual project circumstance is thus required in the MR to substantiate the exclusion of leakage emissions.	
Project Participant Response:	Date: 20/06/2008
For this project activity, no leakage calculation is required because there is not any net change for steam export, tail gas utilization and tail gas heating activity between baseline and project scenario.. Hence, exclusion of leakage is reflected in the revised Monitoring Report (Section 5.2: Project Boundary and Section 9: GHG Calculation).	
Acceptance and Close out by Lead Assessor:	Date: 07/08/2008
Information Provided: 1) Justification as above. Information Verified: As above.	Verified Document Reference: /
Reasoning for not acceptance or acceptance and close out: The reason for excluding leakage from consideration is justified in line with AM0028 version 03. NIR5 is closed out.	

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