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# Validation Report

AGCERT INTERNATIONAL LIMITED, IRELAND

## Validation of the AWMS Methane Recovery Project BR06- S -28, Santa Catarina, Brazil

**Report No.869372, rev. 0**

**January 08, 2007**

TÜV SÜD Industrie Service GmbH  
Carbon Management Service  
Westendstr. 199 - 80686 Munich – GERMANY



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<b>Executing Operational Unit:</b>		TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 - 80686 Munich Federal Republic of Germany		
<b>Contact:</b>		<a href="http://www.tuev-sued.de">www.tuev-sued.de</a>		
<b>Client:</b>		AgCert International PLC, Ireland Sandyford Business Park The Apex Building Dublin 18, Ireland		
<b>Contract approved by:</b>		Werner Betzenbichler		
<b>Report Title:</b>		Validation of the AWMS Methane Recovery Project BR06-S-28, Santa Catarina, Brazil		
<b>Number of pages</b>		17 (excluding annexes and cover page)		
<p>Summary:</p> <p>The Certification Body "Climate and Energy" has been ordered by AgCert International PLC, Ireland (AgCert International) to perform a validation of the above mentioned project.</p> <p>In summary, it is TÜV SÜD's opinion that the project "AWMS Methane Recovery Project BR06-S-28, Santa Catarina, Brazil", as described in the revised project design document of January 30, 2007 meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board and that the project furthermore meets all relevant host country criteria and correctly applies the baseline and monitoring methodology Type III, Other Project Activities, Category III.D., Methane Recovery, version 11 for small-scale projects.</p> <p>Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.</p> <p>Additionally the assessment team reviewed the estimation of the projected emission reductions. TÜV SÜD confirms that the indicated amount of emission reductions of 29,594 tonnes CO<sub>2e</sub> over a crediting period of seven years, resulting in a calculated annual average of 4,228 tonnes CO<sub>2e</sub> represents a reasonable estimation using the assumptions given by the project documents.</p>				
<b>Work carried out by:</b>		Markus Knödseder Johann Thaler	Internal Quality Control by:	Werner Betzenbichler

## Abbreviations

AgCert Brazil	AgCert Do Brasil Solucoes Ambientais Ltda.
AgCert International	AgCert International PLC, Ireland
AWMS	Animal Waste Management Systems
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DOE	Designated Operational Entity
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
MP	Monitoring Plan
PDD	Project Design Document
SSC	Small Scale Project
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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Annex 1: Validation Protocol

Annex 2: Information Reference List

# 1 INTRODUCTION

## 1.1 Objective

AgCert International PLC, Ireland (AgCert International) has commissioned TÜV Industrie Service GmbH TÜV SÜD Gruppe (TÜV SÜD) to validate the AWMS Methane Recovery Project BR06-S-28, Santa Catarina, Brazil. The validation serves as design verification and is a requirement of all CDM projects. The purpose of a validation is to have an independent third party assess of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakech Accords.

## 1.2 Scope

The validation 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. TÜV SÜD has, based on the recommendations in the Validation and Verification Manual employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The audit team has been provided with the first PDD-version in August 2006. Based on this documentation a document review and a fact finding mission in form of an on site audit has taken place. The demanded additional information is addressed in annex 1. Requested information was given and the PDD was updated accordingly. That final PDD version 3 was submitted on 30 Jan. 2007 and serves as the basis for the final assessment presented herewith. The changes were not significant as only some information was added and adapted to the final PDD, thus the global stakeholder process was not repeated.

Studying the existing project documentation, it was obvious that the competence and capability of the validation team has to cover at least the following aspects:

- Knowledge of Kyoto Protocol and the Marrakech Accords
- Environmental and Social Impact Assessment
- Skills in environmental auditing (ISO 14000, EMAS)
- Quality assurance
- Agricultural operations especially regarding manure management
- Technical aspects of gas flaring and bio digester operation
- Monitoring concepts
- Political, economical and technical random conditions in host country

According to these requirements TÜV SÜD has assembled a project team in accordance with the appointment rules of the TÜV certification body “climate and energy”:

**Markus Knödlseider** is an auditor for climate change projects and GHG emission inventories at the department “Carbon Management Service” in the head office of TÜV SÜD in Munich. He has been involved in the topic of environmental auditing, baselining, monitoring and verification due to the requirements of the Kyoto Protocol since Oct. 2001. His main focus lies on renewable energies.

**Johann Thaler** graduated as Master of environmental Economy at the University of Augsburg. During his study he got first experiences in environmental management systems. His master thesis was about a fuel switch program in Brazil as a CDM project. Based in Brazil he has been working for TÜV SÜD as a GHG auditor on freelance basis since March 2005.

In order to have an internal quality control of the project, a team of the following persons has been composed by the certification body “climate and energy”:

Werner Betzenbichler (Head of Certification Body, GHG lead auditor)

### 1.3 GHG Project Description

This project proposes to apply to multiple swine Confined Animal Feeding Operations (located in Santa Catarina, Brazil) a GHG mitigation methodology which is applicable to intensive livestock operations. The proposed project activities will mitigate AWMS GHG emissions in an economically sustainable manner, and will result in other environmental benefits, such as improved water quality and reduced odor. The project proposes to move the designated farms from a high-GHG AWMS practice; an open air lagoon, to a lower-GHG AWMS practice; an ambient temperature anaerobic digester with the capture and combustion of the resulting biogas. The concluding purpose of this project is to mitigate animal effluent related GHG by improving AWMS practices. In total 2 farms with 2 sites are contracted in the State of Santa Catarina, Brazil.

Project participant is AgCert Do Brasil Solucoes Ambientais Ltda. Host Party of the project activity is Brazil.

The category of the project activity is in Scope 13 - Waste Handling and Disposal, and Scope 10 – Fugitive emissions from fuels (solid, oil and gas). The approved and applied baseline and monitoring methodology is Type III, Other Project Activities, Category III.D Methane Recovery for small scale project activities, version 11. According to the PDD and involved parties the starting date of the project activity is 03/03/2005. The crediting period is committed as a 7 years renewable crediting period and it starts on 01/06/2007.

## 2 METHODOLOGY

The validation of the project consists of the following three phases:

- Desk review
- Follow-up interviews
- Resolution of clarification and corrective action requests

In order to ensure transparency, a validation protocol was customized for the project, according to the Validation and Verification Manual. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in Figure 1.

The completed validation protocol is enclosed in Annex 1 to this report.

<b>Validation Protocol Table 1: Mandatory Requirements</b>			
<b>Requirement</b>	<b>Reference</b>	<b>Conclusion</b>	<b>Cross reference</b>
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Validation report.	Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.

<b>Validation Protocol Table 2: Requirement checklist</b>				
<b>Checklist Question</b>	<b>Reference</b>	<b>Means of verification (MoV)</b>	<b>Comment</b>	<b>Draft and/or Final Conclusion</b>
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification is used when the validation team has identified a need for further clarification.

<b>Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests</b>			
<b>Draft report clarifications and corrective action requests</b>	<b>Ref. to checklist question in table 2</b>	<b>Summary of project owner response</b>	<b>Validation conclusion</b>
If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the validation team should be summarized in this section.	This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Figure 1 Validation Protocol Tables

## 2.1 Review of Documents

The project design document submitted by the client and additional background documents related to the project design and baseline were reviewed. The audit team has been provided with the first PDD-version issued on August 19, 2006 which had been made public on [www.netinform.de](http://www.netinform.de). The project design document was assessed by some revisions addressing changes to the baseline and monitoring methodology requested by the CDM Executive Board and clarification requests issued by TÜV SÜD. The final updated PDD version 3, issued on January 30, 2007 serves as the basis for the assessment presented herewith.

## 2.2 Follow-up Interviews

In November 2005 and September 2006, see ref. 2, TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the farms and AgCert Do Brasil Solucoes Ambientas Ltda were interviewed. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

<b>Interviewed organization</b>	<b>Interview topics</b>
Representatives of the farms	<ul style="list-style-type: none"> <li>• Project design</li> <li>• Technical equipment</li> <li>• Sustainable development issues</li> <li>• Additionality</li> <li>• Crediting period</li> <li>• Monitoring plan</li> <li>• Management system</li> <li>• Environmental impacts</li> <li>• Stakeholder process</li> </ul>
AgCert Brasil	<ul style="list-style-type: none"> <li>• Project design</li> </ul>

	<ul style="list-style-type: none"><li>• Technical equipment</li><li>• Sustainable development issues</li><li>• Baseline determination</li><li>• Additionality</li><li>• Crediting period</li><li>• Monitoring plan</li><li>• Environmental impacts</li><li>• Stakeholder process</li><li>• Approval by the host country</li></ul>
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### 2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which needed to be clarified for TÜV SÜD's positive conclusion on the project design. The Corrective Action Requests (CAR) and Clarification Requests (CR) raised by TÜV SÜD were resolved during communications between the Client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are summarized in chapter 3 below and documented in more detail in the validation protocol in Annex 1.

The validation 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.

### 3 VALIDATION FINDINGS

In the following sections the findings of the validation are stated. The validation findings for each validation subject are presented as follows:

- 1) The findings from the desk review of the project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Validation Protocol in Annex 1.
- 2) Where TÜV SÜD had identified issues that needed clarification or that represented a risk to fulfil project objectives, a Clarification Request or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Annex 1. The validation of the project resulted in eight Clarification Requests.
- 3) Where Clarification or Corrective Action Requests have been issued, the exchanges between the Client and TÜV SÜD to resolve these Clarification or Corrective Action Requests is summarized.
- 4) The final conclusions for validation subject are presented.

The validation findings relate to the project design as documented and described in the final project design documentation.

#### 3.1 General Description of Project Activity

##### 3.1.1 Discussion

The project participant is AgCert Do Brasil Solucoes Ambientais Ltda. The project is developed by AgCert International PLC, Ireland. Brazil as the host Party meets all relevant participation requirements.

The objective of the project "AWMS Methane Recovery Project BR06-S-28, Santa Catarina, Brazil" is to apply to the farm GHG mitigation measures which will mitigate GHG emissions in an economically sustainable manner. The project foresees to replace the open air lagoons by positive pressure covered lagoon cells, creating ambient temperature anaerobic digesters.

The project design does reflect current good practice. The design has been professionally developed. A validation of the compatibility of the single components carried out by the project developer resulted in a positive conclusion. The project does moreover apply state of the art equipment.

The project boundaries are clearly defined. The project bundles 2 farms with installations of digesters at 2 sites being contracted in the State of Santa Catarina, Brazil. During this assessment TÜV SÜD contacted and visited all 2 sites indicated on the Information Reference List. As the project participant is operating/developing several similar CDM projects in the same or neighboring region, the validation process has shown that no farm of this project is included in any other existing PDD.

The project equipment can be expected to run for the whole project period and it can not be expected that it will be replaced by more efficient technologies.

Initial training and maintenance efforts are required. In the PDD and during the visit on site the project developer confirmed that such training has taken place and/or is envisaged. Documentation on executed and/or planned training activities has been submitted.

The project is currently in line with the relevant legislation and plans in the host country. The required environmental licenses are valid and have been submitted to the validation team.

The project is considered to be in line with the sustainable development policies of Brazil as improvements to manure management as well as energy supply are relevant issues in the national Brazilian policy. The final letter of approval by the Brazilian DNA confirms the opinion of the DOE.

It can be expected that the project will create additional environmental benefits by reducing emissions of Volatile Organics Compounds (VOCs). The project does moreover improve the quality of the fertilizer produced as a by-product to the farming activities.

The funding for the project does not lead to a diversion of official development assistance, as according to the information obtained by the audit team, ODA does not contribute to the financing of the project.

The project starting date and the operational lifetime are clearly defined. The crediting period is clearly defined.

### 3.1.2 Findings

#### Clarification Request 1:

Chapter A.4.2. of the PDD does mention the use of an “efficient flare”. The validation team asks for more detailed information if the project uses an open or enclosed flare. The type of flare is fundamental for the flare efficiency and hence calculation of the amount of CER credits.

#### Answer:

The enclosed flaring combustion system is automated to ensure that all biogas that exits the digester and passes through the flare (and flow meter) is combusted. Pressure control devices within the gas handling system maintain proper biogas flow to the combustion system. A continuous ignition system ensures methane combustion whenever biogas is present at the flare. Two (2) sparking electrodes provide operational redundancy. If biogas is present in the flare, it is immediately ignited by the sparking system. If biogas is not present, the igniter sparks harmlessly. This continuous ignition system is powered by a robust solar module (solar-charged battery system) that operates independently from the power grid. The component parts are tested and verified functional on a periodic basis in accordance with manufacturer and other technical specifications.

#### Clarification Request 2:

Concerning Fazenda Kapakeffa it has not been presented any evidence to the validation team that training has been taken place, even though the biodigester had been already in use during the on-site visit. AgCert should provide evidences to the validation team that training has taken place at Faz. Kapakeffa.

#### Answer:

The training schedule has been posted to the portal.

#### Clarification Request 3:

It has to be indicated in the PDD date of completion in *DD/MM/YYYY* and contact information and indicate if the person/entity is also a project participant as listed in Annex 1.

Answer:

In Section B.5. of the PDD, it states: The final draft of this baseline section was completed on 19/08/2006. The name of entity determining the baseline is AgCert. AgCert is a project participant, as well as the project developer.

In Annex 1, it says the Project Participant and Developer is Agcert do Brasil Soluções Ambientais Ltda.

Clarification Request 5:

It has to be explained by AgCert why 3<sup>rd</sup> of December 2004 is considered as project start. The first contract was signed on March 03, 2005. Therefore the validation team considers this date as project start.

Answer:

The project start has been changed according to validation team's observation.

### **3.1.3 Conclusion**

All Clarification Requests are considered to be resolved.

Further details to that conclusion are documented in annex 1 of that validation report.

## **3.2 Baseline Methodology**

### **3.2.1 Discussion**

The project is based on the approved methodology: "Type III, Other Project Activities, Category III.D., Methane Recovery for small-scale projects, version 11" . The methodology has been approved by the CDM Executive Board. The selected methodology has been designed for this project and hence the project is part of the methodology on which it is build upon. Therefore the respective baseline methodology is deemed to be the most applicable one for this project. The PDD responds convincingly to each of the applicability criteria which are outlined in the baseline methodology.

The application of the methodology and the discussion and determination of the baseline are transparent. The application follows exactly each of the steps outlined in the methodology and answers the corresponding sections in a proper manner.

The baseline is been determined using reliable assumptions. The parameter "population" as one of the decisive parameters for the quantitative prognosis is determined by using reliable data and is moreover based on date obtained from a year period in the past. During the visit on site the availability of such comprehensive data could be observed predominantly. Hence plausible data has been provided from traceable sources ensuring the reliability of the parameter.

The baseline has been based on project specific data and does sufficiently take into account policies and developments regarding legal, economic and social issues. There is no legal requirement to capture and combust greenhouse gases produced by swine manure in AWMS. There is currently also no planned legislation that is directed towards the emission of GHG as related to AWMS. The open air lagoon is hence considered the common AWMS practice in Brazil.

The project demonstrates via the description of barriers that it is not the baseline scenario. Each step of the respective section of the methodology has hereby been applied in a correct manner. The elaborations in the PDD got substantiated by an external expert review. Concluding it has been made clear that the continuation of the AWMS by operating open air lagoons would be the

most attractive course of action and hence the baseline scenario. During the visit on site the project owner substantiated these arguments by describing the financial result of the operations in the last two years.

The economic performance, the legal constraints and the common practice have been identified as potential risks to the baseline. The subsequent evaluation resulted in the assessment that no major risks to the baseline exist. This assessment is considered as being plausible.

References have been made to all data sources used.

### 3.2.2 Findings

#### Clarification Request 4:

a. It is not clear to the validation team, why AgCert does not provide anymore the exact project emission and baseline emission information for each farm in table form (table E2 respectively E3 in former PDDs) in the PDD. AgCert should explain why it is not mentioned anymore such information and/or provide this information into the PDD.

b. Concerning Agropecuaria Barriga Verde it has not been presented any evidence about the use of North-American and/or European swine genetics. This information should be provided to the validation team.

#### Answer:

- a) The tables are provided in the latest version of the PDD.
- b) As Barriga Verde was taken out of this project activity, it is not relevant anymore for project activity BR 06-S-28.

### 3.2.3 Conclusion

The Clarification Request is considered to be resolved. Concluding it can be stated that it has been made plausible that the chosen baseline scenario is the one deemed most realistic under the given frame conditions.

Further details to that conclusion are documented in annex 1 of that validation report.

## 3.3 Duration of the Project / Crediting Period

### 3.3.1 Discussion

Both the starting date of the project activity and the crediting period are clearly determined as well as the lifetime of the project activity and the length of the renewable crediting period of 7 years.

### 3.3.2 Findings

#### Clarification Request 6:

It is almost sure according to information found on-site and given by AgCert staff, that the biodigester operation at Granja Tome Meurer will only begin in February 2007. The starting date of the crediting period is on December 01, 2006. AgCert has to be aware of the fact that in that case CER credits will be lower than in the PDD predicted.

#### Answer:

While AgCert notes TUV's observation, the company has decided to establish a Crediting Period Start Date in order to begin earning credits at the earliest date possible as 2 of the farms' biodigesters in the project have been reducing emissions since 2005.

### **3.3.3 Conclusion**

As the start of the crediting period has been changed to June 01, 2007, the Clarification Request may be considered as resolved.

Further details to that conclusion are documented in annex 1 of that validation report.

## **3.4 Monitoring Plan**

### **3.4.1 Discussion**

The project is based on the approved monitoring methodology "Type III, Other Project Activities, Category III.D., Methane Recovery for small-scale projects, version 11". The methodology has been approved by the CDM Executive Board. The selected methodology has been designed for this project and hence the project is part of the methodology it is build upon. Therefore the respective monitoring methodology is deemed to be the most applicable one for this project. The PDD responds convincingly to each of the applicability criteria which are outlined in the monitoring methodology.

Details of the methodology as parameters to be obtained, recording frequency and archiving methods are considered being reasonable and appropriate.

The methodology and its application are described in detail and in a transparent manner. During the visit on site the implementation of the operations and maintenance manual and the data management system in order to ensure a proper implementation of the monitoring plan could be evidenced.

The monitoring plan does include all relevant parameters to determine baseline and project emissions and it is possible to monitor and/or measure the currently specified GHG indicators. The indicators which are not measured can be obtained from IPCC documents. The parameters defined allow calculating the baseline and projecting emissions in a proper manner.

According to the methodology no leakage calculation is required.

The project is considered to have no negative environmental, social and economic effects and a monitoring of such data is also not required by the applied monitoring methodology. This approach is deemed sufficient.

The PDD in combination with the Operations and Maintenance Manual does clearly indicate the authority and responsibilities within the given project structure. During the visit on site it has been described in detail how the respective organizational structure is already implemented and/ or planned. During the visit on site the validation team moreover realized that the project owner is well aware of the tasks and responsibilities.

The overall management responsibility is with AgCert International, Ireland. The company operates also trained staff in Brazil. The farm owner or representatives supports the AgCert staff during the on site audits and carries out the daily supervision of the project components and their performance. The responsibilities for each task are clearly defined and allocated to the Farm owners, AgCert and the service providers.

The quality and environmental management system (QMS and EMS), currently under implementation within AgCert, will help to support the project participants in operating the respective organizational structure.

### 3.4.2 Findings

#### Clarification Request 7:

- a. According to information given by AgCert staff during the on-site visit the flow meter has not to be calibrated according to the manufacturer. How does AgCert make sure that accuracy is guaranteed and that high quality data is delivered?
- b. During on-site visit the validation team has identified that there is no seal of the flow-meter. How does AgCert guarantee that the farmer or anybody else does not open and manipulate the flow meter?

#### Answer:

**CR7a** - Details of the metering equipment have been posted to the PDD supporting documents portal.

**CR7b** - Agcert has a rigorous QA/QC system that ensures data security and data integrity. Agcert performs spot audits on all data collection activities.

### 3.4.3 Conclusion

The QA/QC manual for all involved staff and their responsibility regarding monitoring is ruled sufficiently. Signed contracts are submitted to the validation team. The validation team can not identify any risks due to inadequate management structure or quality assurance. The above mentioned requests are answered sufficiently.

The Clarification Request is considered to be resolved.

Further details to that conclusion are documented in annex 1 of that validation report.

## 3.5 Calculation of GHG Emissions by Source

### 3.5.1 Discussion

The project spatial boundaries are clearly described and limited to the farm site. An exact and correct description of the project boundaries is included in chapter B.4 of the PDD. The PDD hereby also reflects correctly that emissions from barn systems and barn flushing systems are not considered as these emissions are not affected by the proposed practice change.

The projects components are clearly defined in the PDD and described in figure B1 of the PDD. During the visit on site the given information has been confirmed.

Details of direct and indirect emissions are discussed in the PDD in an appropriate manner. All aspects are covered by the current approach. All methane (CH<sub>4</sub>) emissions have been considered.

The calculations resulting in the final numbers have been submitted. The formulae used are correctly applied. A leakage calculation is not necessary according to the methodology.

Since most estimates are derived from accepted international sources, it seems reasonable to assume that they are accurate. The project emissions are taking as ex-ante only if the installed equipment is the same as the mention in the PDD; if not the project emissions will be measured and confirmed by the verifier. The approach is deemed sufficient.

Concluding it can be stated that the project emissions will be reduced compared to the baseline scenario by 29,594 tonnes CO<sub>2</sub>e over a crediting period of seven years, resulting in a calculated annual average of 4,228 tonnes CO<sub>2</sub> over a renewable crediting period of seven years.

### 3.5.2 Findings

None

### 3.5.3. Conclusion

The calculation of GHG emissions and used data are according to applied methodology and its requirements. Further details to that conclusion are documented in annex 1 of that validation report.

## 3.6 Environmental Impacts

### 3.6.1 Discussion

The environmental impacts can be seen as being low. These low impacts have been sufficiently described in the PDD.

The legislation does not require an EIA for this type of project. But an environmental license for the site is necessary. This requirement for approval has been fulfilled.

Negative environmental effects are not expected to be created by the project. Given the nature of the project design this seems to be reasonable.

Transboundary effects are not expected as the project site is far from the national boundary.

As no significant environmental impacts are expected, such impacts have not influenced the project design.

### 3.6.2 Findings

#### Clarification Request 8

a. Concerning Agropecuaria Barriga Verde it has neither been presented a valid environmental licence nor a protocol to the validation team on-site. AgCert should provide one of those documents to the validation team.

b. Concerning Fazenda Kapakeffa it seems that the farm was taken out of PDD 8 due to a missing environmental licence. AgCert should confirm that assumption of the validation team or explain why Fazenda Kapakeffa has been already part of another PDD and taken out of it that time. Besides, AgCert should provide a valid environmental licence or a protocol for Fazenda Kapakeffa.

#### Answer:

- a) As Agropecuaria Barriga Verde was taken out of the PDD, part a) of the CR is not relevant anymore for this project activity BR 06-S-28.
- b) Environmental protocol has been posted to the PDD supporting documents portal.

### 3.6.3 Conclusion

The project does comply with the environmental requirements. All environmental licences respectively environmental protocols have been submitted to the validation team.

## **3.7 Comments by Local Stakeholders**

### **3.7.1 Discussion**

A formal consultation process with local stakeholders has taken place and corresponding information has been submitted to the audit team. The stakeholders consulted included people from the local community and also the representatives of the local communities and the states. In addition neighbours to the site have been interviewed.

The stakeholders have been invited to meetings via post and electronic mail and which has also been published in local and regional newspapers.

The comments to the project design have been recorded and provided. As all comments have been positive, the project design has not been changed due to stakeholder comments.

### **3.7.2 Findings**

None

### **3.7.3 Conclusion**

The comments of the stakeholders were without exception positive. The project does comply with the requirements.

Further details to that conclusion are documented in annex 1 of that validation report.

## **4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

TÜV SÜD published the project documents on its website from August 24, 2006 until September 22, 2006 and invited comments within 30 days, by Parties, stakeholders and non-governmental organizations.

Published:

[http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=1997&Ebene1\\_ID=26&Ebene2\\_ID=572&mode=1](http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=1997&Ebene1_ID=26&Ebene2_ID=572&mode=1)

During the commenting period there have been no comments received.

## 5 VALIDATION OPINION

The Certification Body "Climate and Energy" has been ordered by AgCert International LLC, Ireland (AgCert International) to validate the project AWMS Methane Recovery Project BR06-S-28, Santa Catarina, Brazil.

By avoiding GHG emissions from open air lagoons, the project results in reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the investment, technological and legal barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

Additionally the assessment team reviewed the estimation of the projected emission reductions. TÜV SÜD confirms that the indicated amount of emission reductions of 29,594 tonnes CO<sub>2e</sub> over a renewable crediting period of seven years, resulting in a calculated annual average of 4,228 tonnes CO<sub>2e</sub> represents a reasonable estimation using the assumptions given by the project documents.

It is opinion of TÜV SÜD that the project as described in the final project design document issued on 30 Jan, 2007 meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board; furthermore that the project meets all relevant host country criteria and correctly applies the baseline and monitoring methodology "Type III, Other Project Activities, Category III.D., Methane Recovery for small-scale projects, version 11".

Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.

Prior to the submission of this validation report to the CDM Executive Board, TÜV SÜD will have to receive the written approval of the DNA of involved parties, including confirmation by the DNA of Brazil that the project assists in achieving sustainable development.

The validation is based on the information made available to us and the engagement conditions detailed in this report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Munich, 25.04.2007



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**Werner Betzenbichler**  
Head certification body  
"climate and energy"

Munich, 25.04.2007



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**Markus Knödseder**  
Project Manager

Document: Validation Report BR 06-S-28\_25042007.doc

Validation of the AWMS Methane Recovery Project BR06-S-28, Santa Catarina, Brazil



## **Annex 1: Validation Protocol**

**Table 1 Project's Environment**

REQUIREMENT	REFERENCE	Comment	CONCLUSION
1. The host country shall be a Party to the Kyoto Protocol	Marrakech Accords, CDM Modalities §30	Brazil has ratified the Kyoto Protocol on August 23, 2002.	<input checked="" type="checkbox"/>
2. Parties participating in the CDM shall designate a national authority for the CDM	Marrakech Accords, CDM Modalities §29	Brazil as participating party has designated a national authority.	<input checked="" type="checkbox"/>
3. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof.	Kyoto Protocol Art. 12.2, Marrakech Accords, CDM Modalities §40a	The project will assist Brazil in achieving a sustainable development. The issuance of the LoA will demonstrate that.	<input checked="" type="checkbox"/>
4. The project shall have the written approval of voluntary participation from the designated national authorities of each party involved.	Kyoto Protocol Art. 12.5a, Marrakech Accords, CDM Modalities §40a	The confirmation by the host country has not been submitted to the validation team and the certification body "Climate and Energy". <i>Before submitting the project for registration the project owner has to provide an eligible Letter of Approval from involved Parties.</i>	<b>Open</b>
5. The project shall assist Parties included in Annex I in	Kyoto Protocol	As the given project is a unilateral pro-	<input checked="" type="checkbox"/>



REQUIREMENT	REFERENCE	Comment	CONCLUSION
achieving compliance with part of their emission reduction commitment under Art. 3. A letter of approval for participants originating from Annex-I-Countries should be available.	Art.12.2	ject, this issue is not relevant.	
6. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available	Marrakech Accords, CDM Modalities, §40	The global stakeholder process has taken place from August 24, 2006 until September 22, 2006. There have been no comments received so far.	<b>Open</b>
7. The project design document shall be in conformance with the UNFCCC CDM-PDD format	Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The PDD is in conformance with the UNFCCC CDM-PDD format.	<input checked="" type="checkbox"/>
8. The project participants shall submit a letter on the modalities of communication (MoC) before submitting a request for registration	EB-09 F_CDM_REG form	The letter on MoC will be submitted before submitting a request for registration. <i>Before submitting the project for registration the project owner has to provide an eligible Letter of Approval from involved Parties.</i>	<b>Open</b>



Table 2 PDD

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>A. General Description of Project Activity</b>					
<b>A.1. Project Title</b>					
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	2,3,4	DR,I	The project title is clearly enough to identify the unique CDM activity.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.2. Are there an indication of a revision number and the date of the revision?	3,4	DR	Yes, there is an indication of a revision number and the date of the revision.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.3. Is this in consistency with the time line of the project's history?	1,2,3,4	DR,I	Yes, it is consistent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.2. Description of the project activity</b>					
A.2.1. Is the description delivering a transparent overview of the project activities?	2,3,4	DR,I	The description is delivering a transparent overview of the project activities.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.2. Is all information provided in compliance with actual situation or planning?	2,3,4	DR,I	All information is provided in compliance with actual situation or planning.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.3. Are proofs available evidencing all information with relevance for the validity, for the determination of baseline and project emissions and for emission projections?	2,3,4	DR,I	Proofs are available evidencing all information with relevance for the validity, for the determination of baseline and project emissions and for emission projections.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.4. Is all information provided in consistency with details provided by further chapters of the PDD?	3,4	DR	Yes. All information is provided in consistency with details provided by further chap-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			ters of the PDD.		
<b>A.3. Project Participants</b>					
A.3.1. Is the form required for the indication of project participants correctly applied?	3,4	DR	The form for the indication of project participants is correctly applied.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.2. Is the voluntary participation of all listed entities or Parties confirmed by each of them?	1,2,3,4	DR,I	The signed contracts between AgCert and the farmers is the confirmation of the voluntary participation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.3. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	3,4	DR	Yes. All provided information is in consistency.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.4. Technical description of the project activity</b>					
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	2,3,4	DR,I	Yes. The information provided on the location of the project activity allows for a clear identification of the site.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	1,2,3,4,5	DR,I	Yes. The project participant has concluded contracts with the sites allowing him the implementation of the project at the sites.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3. Is the category(ies) of the project activity correctly identified?	3,4	DR	The category is correctly identified.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.4. Does the project design engineering reflect current good practices?	3,4	DR	Yes, the project design does reflect current good practice. The design has been profes-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			sionally developed.		
A.4.5. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	2,3,4,8,11,12,13,21,22	DR, I	The description of the technology to be applied mainly provides sufficient and transparent input to evaluate its impact on the greenhouse gas balance. <u>Clarification Request 1:</u> Chapter A.4.2. of the PDD does mention the use of an “efficient flare”. The validation team asks for more detailed information if the project uses an open or enclosed flare. The type of flare is fundamental for the flare efficiency and hence calculation of the amount of CER credits.	CR 1	<input checked="" type="checkbox"/>
A.4.6. Is the brief explanation how the project will reduce greenhouse gas emission transparent and suitable?	3,4	DR	Yes, the brief explanation how the project will reduce greenhouse gas emission is transparent and suitable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.7. Is all information provided in compliance with actual situation or planning as available by the project participants?	2,3,4	DR, I	Yes. All information is provided in compliance with actual situation or planning as available by the project participants.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.8. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2,3,4,8,11,12,13,21,22	DR, I	Yes, the project does apply state of the art equipment.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.9. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2,3 ,4,8, 11, 12, 13,2 1,22	DR, I	No. The project equipment can be expected to run for the whole project period and it can not be expected that it will be replaced by more efficient technologies, but additional components could be added using biogas to generate heat and produce electricity	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.10. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1,2,3 ,4,10	DR,I	Yes, initial training and maintenance efforts are required. During the visit at the project sites the project developer and the farm owners confirmed that such training has taken place and/or is envisaged.  <u>Clarification Request 2:</u>  Concerning Fazenda Kapakeffa it has not been presented any evidence to the validation team that training has been taken place, even though the biodigester had been already in use during the on-site visit. AgCert should provide evidences to the validation team that training has taken place at Faz. Kapakeffa.	CR 2	<input checked="" type="checkbox"/>
A.4.11. Does the project make provisions for meeting training and maintenance needs?	1,2,3 ,4,10 ,14	DR,I	See A.4.10.	See CR 2	<input checked="" type="checkbox"/>
A.4.12. Is a schedule available on the implementation of the project and are there any risks for delays?	1,2,3 ,4,5	DR,I	There is a schedule available for all farm sites of the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.13. Is the form required for the indication of projected emission reductions correctly applied?	3,4	DR	The form required for the indication of projected emission reductions is correctly applied.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.5. Public Funding</b>					
A.5.1. Is all information on public funding provided in compliance with actual situation or planning as available by the project participants?	1,2,3,4	DR,I	No public funding is involved in the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.5.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 2)?	3,4	DR	Yes. All information is consistent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.6. Bundling/Debundling</b>					
A.6.1. Is there all information provided which shows that the project activity is not a debundled component of a larger project activity?	3,4	DR	All projects are plotted using "Google Earth" to ensure locations are not creating a debundling issue.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B. Baseline Methodology</b>					
<b>B.1. Choice and Applicability</b>					
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	3,4,29	DR	The baseline methodology "III.D Methane recovery in agricultural and agro industrial activities/version 11" for small scale project activities has been approved by the CDM Methodology Panel on July 28, 2006.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.1.2. Is the choice of the methodology correctly justified by the PDD?	3,4,2	DR	The choice of the methodology is correctly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	9		justified by the PDD.		
B.1.3. Is the baseline methodology the one deemed most applicable for this project?	2,3,4 ,29	DR,I	The baseline methodology is the most applicable for this project. The project consists of a small-scale project, therefore and under consideration of all other aspects the chosen baseline methodology III.D. methane recovery in agricultural and agro industrial activities is the most applicable for this project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.1.4. Is the project in conformance with all applicability criteria of the applied methodology?	2,3,4 ,29	DR,I	The project is in conformance with all applicability criteria of the applied methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.2. Application of the Baseline Methodology / Identification of the Baseline Scenario</b>					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	2,3,4 29	DR,I	Yes. The application of the methodology is transparent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.2. Does the application consider all potential baseline scenarios in the discussion?	3,4,2 9	DR	Yes. The application considers all potential baseline scenarios in the discussion.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.3. Is conservativeness addressed in the way of identifying the baseline?	3,4	DR	Conservativeness is addressed in all issues in the way of identifying the baseline.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.4. Has the baseline been established on a project-specific basis?	1,2,3 ,4	DR	The baseline has been established on a project-specific basis.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral poli-	1,2,3 ,4	DR, I	The baseline scenario does sufficiently take into account relevant national and/or sec-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
cies, macro-economic trends and political aspirations?			total policies, macro-economic trends and political aspirations.		
B.2.6. Is the baseline determination compatible with the available data?	2,3,4,7,31	DR,I	The baseline determination is compatible with the population data of each farm and other data.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.7. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	3,4	DR	Yes. The selected baseline represents the most likely scenario.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.8. Does the PDD follow the approach for identifying the baseline scenario as given by the approved methodology?	3,4	DR	Yes. The PDD follows the approach for identifying the baseline scenario as given by the approved methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.9. Is all literature and sources clearly referenced?	3,4	DR	Yes. All Literature and sources are clearly referenced.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.3. Additionality</b>					
B.3.1. Is the discussion of how emission reductions are achieved by the project scenario in comparison to the identified baseline scenario provided in a transparent manner?	2,3,4	DR,I	Yes. The discussion of how emission reductions are achieved by the project scenario in comparison to the baseline scenario is provided in a transparent manner through a barrier analysis. The indicated barriers are plausible and could be partly verified on-site by the validation team.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.3.2. In case of using calculation models in order to demonstrate emission reductions: Are all formulae and input data based on provable records?	3,4	DR	For demonstrating the additionality no computer models have been applied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.3.3. Does the PDD clearly demonstrate the additionality using the approach as given by the methodology?	3,4,2 9	DR	Yes. The PDD clearly demonstrate the additionality using the approach as given by the methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.3.4. In case of using the additionality tool: Are all steps followed in a transparent and provable manner?	--	--	Not relevant, because the additionality tool has not been used.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.3.5. Does the discussion sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	1,2,3 ,4	DR,I	Yes. The discussion mentions some national and sectoral policies and macro-economic trends.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.3.6. Does the CDM registration have any impact on the implementation of the project?	1,2,3 ,4	DR,I	Without the CDM registration the project would not be implemented. The CDM registration plays a key role for the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.3.7. Is the approach for demonstrating additionality provided by the most recent (or still applicable) methodology correctly applied?	3,4,2 9	DR	The approach for demonstrating additionality is correctly applied by the most recent methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.3.8. Are other proofs than anecdotal evidence for all assumptions and statements used by the additionality discussion?	3,4	DR	According to common practise and experience of the validation team it seems to be obvious that the operation of open lagoon system is the baseline scenario and that the farmers will not switch to bio digesting without the investment from AgCert.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>B.4. Project Boundary</b>					
B.4.1. Are all emission related to the baseline scenario clearly identified and described in a complete manner?	2,3,4	DR,I	Yes. All emission related to the baseline scenario is clearly identified and described in a complete manner.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.2. In case of grid connected electricity projects: Is the relevant grid correctly identified due to the EB guidance and the underlying methodology?	--	--	This question is not applicable to the project, as it is not a grid connected electricity project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.3. Are all emission related to the project scenario clearly identified and described in a complete manner?	2,3,4	DR, I	Yes. All emission related to the project scenario are clearly identified and described in a complete manner.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.4. Are all emission related to leakage clearly identified and described in a complete manner?	--	--	Not applicable as a leakage calculation is according to the methodology not required.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.5. Detailed Baseline Information</b>					
B.5.1. Is there any indication of a date when determine the baseline?	3,4	DR	It is not indicated in the PDD when the baseline was determined.  <u>Clarification Request 3:</u> It has to be indicated in the PDD date of completion in <i>DD/MM/YYYY</i> and contact information and indicate if the person/entity is also a project participant as listed in Annex 1.	CR 3	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.5.2. Is this in consistency with the time line of the PDD history?	3,4	DR	See B.5.1.	See CR 3	<input checked="" type="checkbox"/>
B.5.3. Is all data required provided in a complete manner by annex 3 of the PDD?	3,4	DR	Not applicable as annex 3 does not refer to baseline information, but to the monitoring plan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.4. Is all data given in compliance with the methodology?	3,4,29	DR	Yes. All data is in compliance with the methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.5. Is all data evidence by official data sources or replicable records?	3,4	DR	<p><u>Clarification Request 4:</u></p> <p>1. It is not clear to the validation team, why AgCert does not provide anymore the exact project emission and baseline emission information for each farm in table form (table E2 respectively E3 in former PDDs) in the PDD. AgCert should explain why it is not mentioned anymore such information and/or provide this information into the PDD.</p> <p>2. Concerning Agropecuaria Barriga Verde it has not been presented any evidence about the use of North-American and/or European swine genetics. This information should be provided to the validation team.</p>	CR 4	<input checked="" type="checkbox"/>
B.5.6. Is the vintage of the baseline data correct?	2,3,4	DR,I	Even though if for almost each farm the population data is indicated for different months because of different dates of assessment by AgCert, the data vintage may	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			be accepted by the validation team as for each farm the vintage of one year is guaranteed.		
<b>C. Duration of the Project / Crediting Period</b>					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	2,3,4	DR, I	It is not clear for the validation team why the projects starting date is on December 03, 2004. All signed contracts were verified. Hereby the first contract was signed for this project activity on March, 03, 2005 (Fazenda Kapakeffa). <u>Clarification Request 5:</u> It has to be explained by AgCert why 3 <sup>rd</sup> of December 2004 is considered as project start. The first contract was signed on March 03, 2005. Therefore the validation team considers this date as project start.	CR 5	<input checked="" type="checkbox"/>
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	3,4	DR	Yes. The crediting period is clearly defined with a renewable crediting period of 7 years. <u>Clarification Request 6:</u> It is almost sure according to information found on-site and given by AgCert staff, that the biodigester operation at Granja Tome Meurer will only begin in February 2007. The starting date of the crediting period is on December 01, 2006. AgCert has to be	CR 6	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			aware of the fact that in that case CER credits will be lower than in the PDD predicted.  <u>Recommendation:</u> AgCert should start the crediting period later on.		
<b>D. Monitoring Plan</b>					
<b>D.1. Monitoring Methodology</b>					
D.1.1. Is the monitoring methodology previously approved by the CDM Methodology Panel?	3,4,3 0	DR	Yes. The monitoring methodology "III.D Methane recovery in agricultural and agro industrial activities/version 11" has been approved by the CDM Methodology Panel on July 28, 2006.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.2. Is the choice of the methodology correctly justified by the PDD?	3,4,3 0	DR	Yes. The choice of the methodology is correctly justified by the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.3. Is the project in conformance with all applicability criteria of the applied methodology?	3,4,3 0	DR	The project is in conformance with all applicability criteria of the applied methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.4. Does the monitoring methodology provide a consistent approach in the context of all parameter to be monitored and further information provided by the PDD?	3,4,3 0	DR	Yes. The monitoring methodology provides a consistent approach in the context of all parameter to be monitored and further information provided by the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.5. Does the monitoring methodology apply consistently the choice of the option selected for monitoring?	3,4,3 0	DR	The applied and approved methodology does not specify the monitoring of project	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
toring both of project and baseline emissions?			emissions		
<b>D.2. Monitoring of Project Emissions (if applied)</b>					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	2,3,4 ,14,1 5	DR, I	Yes. The monitoring plan provides for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	2,3,4 ,10,1 4,15 30	DR,I	The choices of project GHG indicators are reasonable. According to the methodology project emissions do not have to be monitored.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.3. Will it be possible to determine the specified project GHG indicators?	2,3,4 , 10 14, 15, 34	DR,I	Yes. The necessary monitoring data and its accuracy will be guaranteed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.4. Will the indicators enable comparison of project data and performance over time?	2,3,4 ,10,1 4,15	DR,I	Yes. The indicators will enable comparison of project data and performance over time.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.5. Is the information given for each monitoring variable by the presented table sufficient to en-	2,3,4 ,10,1	DR,I	Yes. The information is sufficient to ensure the verification of a proper implementation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
sure the verification of a proper implementation of the monitoring plan?	4,15		of the monitoring plan.		
D.2.6. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	2,3,4 ,10,1 4,15	DR,I	The given information is sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.7. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	2,3,4 ,10,1 4,15	DR,I	Yes. The monitoring approach is in line with current good practice.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.8. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	2,3,4 ,10,1 4,15, 31	DR,I	All formulae used to determine project emission are clearly indicated and in compliance with the monitoring methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.3. Monitoring of Baseline Emissions (if applied)</b>					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions of the baseline emissions during the crediting period?	2,3,4 ,10,1 4,15	DR,I	All relevant data necessary for estimation or measuring the GHG emissions of the baseline emissions are given.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology ap-	2,3,4 ,10,1	DR,I	Yes. The choices of project GHG indicators are reasonable and in conformance with the requirements set by the approved method-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
plied?	4,15		ology.		
D.3.3. Will it be possible to determine the specified project GHG indicators?	2,3,4 ,10,1 4,15	DR,I	Yes, according to given information the required parameters will be able to be monitored.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	2,3,4 ,10,1 4,15	DR,I	Yes. The information is sufficient to ensure the verification of a proper implementation of the monitoring plan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	2,3,4 ,10,1 4,15	DR,I	The given information is sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	2,3,4 ,10,1 4,15	DR,I	Yes. The monitoring approach is in line with current good practice.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.7. Are all formulae used to determine baseline emission clearly indicated and in compliance with the monitoring methodology.	2,3,4 ,10,1 4,15, 31	DR,I	All formulae used to determine baseline emission are clearly indicated and in compliance with the monitoring methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.4. Direct Monitoring of Emission Reductions (if applied)</b>					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary	2,3,4	I,DR	All relevant data necessary for estimation or measuring the GHG emission reductions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
for estimation or measuring directly the greenhouse gas emissions reductions during the crediting period?	10, 14, 15		are provided.		
D.4.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	2,3,4 10, 14, 15	DR,I	Yes. The choices of project GHG indicators are reasonable and in conformance with the requirements set by the approved methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4.3. Will it be possible to determine the specified project GHG indicators?	2,3,4 10, 14, 15	DR,I	Yes. It will be possible to determine the specified project GHG indicators.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	2,3,4 10, 14, 15	DR,I	Yes. The information is sufficient to ensure the verification of a proper implementation of the monitoring plan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	2,3,4 10, 14, 15	DR,I	The given information is sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4.6. Is the monitoring approach in line with current	2,3,4	DR,I	Yes. The monitoring approach is in line with	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	10, 14, 15		current good practice.		
D.4.7. Are all formulae used to determine project emission reductions clearly indicated and in compliance with the monitoring methodology.	2,3,4 10, 14, 15, 31	DR	All formulae used to determine project emission reductions are clearly indicated and in compliance with the monitoring methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.5. Monitoring of Leakage (if applicable)</b>					
D.5.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring of leakage emissions during the crediting period?	--	--	Not applicable as the project activity does not require a leakage calculation according to the methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	--	--	Not applicable. See D.5.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.3. Will it be possible to determine the specified project GHG indicators?	--	--	Not applicable. See D.5.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	--	--	Not applicable. See D.5.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D.5.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	--	--	Not applicable. See D.5.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	--	--	Not applicable. See D.5.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.7. Are all formulae used to determine leakage emissions clearly indicated and in compliance with the monitoring methodology.	--	--	Not applicable. See D.5.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.6. Determination of Emission Reductions</b>					
D.6.1. Are all formulae used to determine leakage emissions clearly indicated and in compliance with the monitoring methodology.	--	--	Not applicable. See D.5.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6.2. Is the information given for each calculated variable sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	2,3	DR,I	The given information is sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.7. Quality Control (QC) and Quality Assurance (QA) Procedures</b>					
D.7.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	3,4,1 6,17, 18,1	DR	The selection of data is complete.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	9,20				
D.7.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	3,4,1 6,17, 18,1 9,20	DR	Uncertainty factors are addressed in the monitoring plan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.7.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	3,4,1 6,17, 18,1 9,20	DR	The control procedures and quality assurance procedures are reasonably described. <u>Clarification Request 7:</u> 1. According to information given by AgCert staff during the on-site visit the flow meter has not to be calibrated according to the manufacturer. How does AgCert make sure that accuracy is guaranteed and that high quality data is delivered? 2. During on-site visit the validation team has identified that there is no seal of the flow-meter. How does AgCert guarantee that the farmer or anybody else does not open and manipulate the flow meter?	CR 7	<input checked="" type="checkbox"/>
D.7.4. Is it ensured that data will be bound to national or internal reference standards?	3,4,1 9	DR	Yes. That data will be bound to national reference standards..	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.8. Operational and management structure</b>					
D.8.1. Is the authority and responsibility of project management clearly described?	2,3,4 ,10	DR,I	The authority and responsibility of project management is clearly described.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D.8.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	2,3,4 ,10	DR,I	The authority and responsibility for registration, monitoring, measurement and reporting is clearly described.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.3. Are procedures identified for training of monitoring personnel?	2,3,4 ,14,1 5,24, 25,2 6	DR,I	Yes. Corresponding documents have been submitted to the validation team.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	2,3,4 ,14,1 5	DR,I	Yes. Corresponding documents have been submitted to the validation team.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.8. Monitoring Plan (Annex 4)</b>					
D.8.5. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	3,4	DR	Yes. In Annex 3 the monitoring plan is developed in a project specific manner clearly addressing the unique features of the CDM activity	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.6. Does the monitoring plan completely describes all measures to be implemented for monitoring all parameter required?	3,4	DR-	The monitoring plan completely describes all measures to be implemented for monitoring all parameter required.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.7. Does the monitoring plan completely describes all measures to be implemented for ensuring data quality of all parameter to be monitored?	3,4	DR	The monitoring plan completely describes all measures to be implemented for ensuring data quality of all parameter to be monitored.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			tored?		
D.8.8. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	3,4	DR	The monitoring plan provides information on monitoring equipment and respective positioning in order to safeguard a proper installation?..	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.9. Are procedures identified for calibration of monitoring equipment?	3,4,1 9	DR	See D.7.3.	See CR 7	<input checked="" type="checkbox"/>
D.8.10. Are procedures identified for maintenance of monitoring equipment and installations?	3,4,1 4,15, 24,2 5,26	DR	Yes. The document “Method specification for small scale projects” submitted to the validation team, describes such procedures in chapter 4.0.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.11. Are procedures identified for monitoring, measurements and reporting?	3,4,1 4,15, 24,2 5,26	DR	The processes for “Collecting” and “Handling” of data is described in the O &M Plan. Including QA/QC measures.  Besides, the document “Method specification for small scale projects” submitted to the validation team, describes such procedures in chapter 6.0 and 7.0.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.12. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	3,4,1 4,15, 24,2 5,26	DR	Yes. The document “Method specification for small scale projects” submitted to the validation team, describes such procedures in chapter 6.0.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.13. Are procedures identified for dealing with pos-	3,4,1	DR	Yes. The document “Method specification	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
sible monitoring data adjustments and uncertainties?	4,15, 24,2 5,26		for small scale projects” submitted to the validation team, describes such procedures in chapter 4.2 and 4.3.		
D.8.14. Does the monitoring plan provide procedures identified for troubleshooting allowing redundant reconstruction of data in case of monitoring problems?	3,4,1 4,15, 24,2 5,26	DR	The procedures for Emergency Maintenance notification are described in 4.3.1 of the O&M Plan. “Alternative Operating Procedures” designed to prevent unintended emissions are found in 4.2.2.7, 4.2.3.6, 4.2.4.5, and 4.2.5.5 of the O&M Plan.  Besides, the document “Method specification for small scale projects” submitted to the validation team, describes such procedures in chapter 4.2 and 4.3.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.15. Are procedures identified for review of reported results/data?	3,4,1 4,15, 24,2 5,26	DR	Yes. Procedures are identified for review of reported results/data.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.16. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	3,4,1 6	DR	Yes. See document I020-2, QA Process-Product Audits from 11/05/03.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.17. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	3,4,1 7	DR	Yes. See document P025, Control of Measuring & Monitoring Devices (MMD) and document I031-5 Receiving Inspection from 19.02.04.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.8.18. Are procedures identified for corrective actions	3,4,1	DR	Yes. See document I005-1, Corrective and	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
in order to provide for more accurate future monitoring and reporting?	8		Preventive Actions from 21.07.03.		
<b>E. Calculation of GHG Emissions by Source</b>					
<b>E.1. Predicted Project GHG Emissions</b>					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	1,2,3,4	DR,I	All aspects related to direct and indirect GHG emissions are captured in the project design. .	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.2. Are the GHG calculations documented in a complete and transparent manner?	3,4,31	DR	Not all GHG calculations are documented in a complete and transparent manner. See B.5.5...	See CR 4	
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	3,4,31	DR	Yes. Conservative assumptions have been used to calculate project GHG emissions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	2,3,4,29,30	DR,I	According to the methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	-	-	There is no need for any projection.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.6. Is the projection based on provable input parameter?	-	-	There is no need for any projection.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.2. Leakage</b>					
E.2.1. Are potential leakage effects beyond the chosen	--	--	Not applicable as methodology does not re-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
project boundaries properly identified?			quire the calculation of leakage.		
E.2.2. Have these leakage effects been properly accounted for in calculations?	--	--	N/A. See E.2.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.3. Have conservative assumptions been used to calculate leakage emissions?	--	--	N/A. See E.2.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.4. Are uncertainties in the leakage estimates properly addressed in the documentation?	--	--	N/A. See E.2.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	--	--	N/A. See E.2.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.6. Is the projection based on provable input parameter?	--	--	N/A. See E.2.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.3. Baseline Emissions</b>					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	2,3,4 ,29	DR,I	Yes. The most relevant and likely operational characteristics and baseline indicators have been chosen as reference for baseline emissions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	2,3,4	DR,I	Both the baseline boundary for emissions and the spatial boundary are clearly defined.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.3. Are the GHG calculations documented in a	2,3,4	DR,I	Not all GHG calculations are documented in	See CR	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
complete and transparent manner?	,8		a complete and transparent manner. See B.5.5.	4	
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	3,4,3 1	DR	Yes. Conservative assumptions have been used to calculate project GHG emissions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	3,4,1 0,14, ,31	DR,I	According to the methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.6. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	--	--	There is no need for any projection.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.7. Is the projection based on provable input parameter?	2,3,4 ,31	DR,I	There is no need for any projection.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.4. Emission Reductions</b>					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	2,3,4	DR,I	Yes. The project will result in fewer GHG emissions than the baseline scenario.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	3,4	DR	Yes. The form required for the indication of projected emission reductions is correctly applied.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	2,3,4, 5	DR,I	The project start should be on March 03, 2005 instead of December 03, 2004. The beginning of the crediting period is fixed for December 01, 2006. However, it is rather improbable to be fulfilled.	See CR 5 and CR 6	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			See C.1.1. and C.1.2.		
<b>F. Environmental Impacts</b>					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	2,3,4	DR,I	Yes. The environmental impacts of the project activity have been sufficiently described.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	2,3,4	DR,I	An EIA is not necessary.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.3. Will the project create any adverse environmental effects?	2,3,4	DR,I	No. The project will not create any adverse environmental effects.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.4. Are transboundary environmental impacts considered in the analysis?	2,3,4	DR,I	Positive transboundary environmental impacts are expected, due to the new equipment and the need for regular monitoring accidents can be identified easier.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.5. Have identified environmental impacts been addressed in the project design?	2,3,4	DR,I	Identified environmental impacts have been addressed in the project design.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.6. Does the project comply with environmental legislation in the host country?	2,3,4 ,9	DR,I	The project complies principally with the environmental legislation in the host country. <u>Clarification Request 8</u> 1. Concerning Agropecuaria Barriga Verde it has neither been presented a valid environmental licence nor a protocol to the validation team on-site. AgCert should provide one of	CR 8	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>those documents to the validation team.</p> <p>2. Concerning Fazenda Kapakeffa it seems that the farm was taken out of PDD 8 due to a missing environmental licence. AgCert should confirm that assumption of the validation team or explain why Fazenda Kapakeffa has been already part of another PDD and taken out of it that time. Besides, AgCert should provide a valid environmental licence or a protocol for Fazenda Kapakeffa.</p>		
<b>G. Stakeholder Comments</b>					
G.1.1. Have relevant stakeholders been consulted?	2,3,4,27,28	DR,I	Yes. Relevant stakeholders have been consulted.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	2,3,4,27,28	DR,I	The invitations to local stakeholders were sent by postal and electronic mail to local stakeholders.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	2,3,4,27,28	DR,I	The Brazilian DNA gives guidance how the local stakeholder process has to be conducted. The validation team may confirm that the process has been performed as required.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
G.1.4. Is the undertaken stakeholder process described in a complete and transparent manner?	2,3,4 ,27,2 8	DR,I	Yes. The undertaken stakeholder process is described in a complete and transparent manner..	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.5. Is a summary of the stakeholder comments received provided?	2,3,4 ,27,2 8	DR,I	There were made only positive comments supporting the project. Negative comments have not been received.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.6. Has due account been taken of any stakeholder comments received?	2,3,4 ,27,2 8	DR,I	See G.1.5.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Table 3 Resolution of Corrective Action and Clarification Requests**

Draft report clarifications and corrective action requests by validation team	Ref. to check-list question in tables 1 and 2	Summary of project owner response	Validation team conclusion
<p><u>Clarification Request 1:</u></p> <p>Chapter A.4.2. of the PDD does mention the use of an “efficient flare”. The validation team asks for more detailed information if the project uses an open or enclosed flare. The type of flare is fundamental for the flare efficiency and hence calculation of the amount of CER credits.</p>	Table 2, A.4.5.	<p><b>CR1</b> - The enclosed flaring combustion system is automated to ensure that all biogas that exits the digester and passes through the flare (and flow meter) is combusted. Pressure control devices within the gas handling system maintain proper biogas flow to the combustion system. A continuous ignition system ensures methane combustion whenever biogas is present at the flare. Two (2) sparking electrodes provide operational redundancy. If biogas is present in the flare, it is immediately ignited by the sparking system. If biogas is not present, the igniter sparks harmlessly. This continuous ignition system is powered by a robust solar module (solar-charged battery system) that operates independently from the power grid. The component parts are tested and verified functional on a periodic basis in accordance with manufacturer and other technical specifications.</p>	<p><b>Issue is considered to be resolved.</b></p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request 2:</u></p> <p>Concerning Fazenda Kapakeffa it has not been presented any evidence to the validation team that training has been taken place, even though the biodigester had been al-</p>	Table 2, A.4.10.	<p><b>CR2</b> - The training schedule has been posted to the portal.</p>	<p><b>Information can not be found on the given source.</b></p> <p><b>According to telephone interview Agcert ensures</b></p>



Draft report clarifications and corrective action requests by validation team	Ref. to check-list question in tables 1 and 2	Summary of project owner response	Validation team conclusion
ready in use during the on-site visit. AgCert should provide evidences to the validation team that training has taken place at Faz. Kapakeffa.			<p><b>that staff will be qualified until start of monitoring.</b></p> <p><b>Issue is considered as resolved.</b></p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request 3:</u></p> <p>It has to be indicated in the PDD date of completion in <i>DD/MM/YYYY</i> and contact information and indicate if the person/entity is also a project participant as listed in Annex 1.</p>	Table 2, B.5.1.	<p><b>CR3</b> - In Section B.5. of the PDD, it states: The final draft of this baseline section was completed on 19/08/2006. The name of entity determining the baseline is AgCert. AgCert is a project participant, as well as the project developer.</p> <p>In Annex 1, it says the Project Participant and Developer is Agcert do Brasil Soluções Ambientais Ltda.</p> <p>If more information is needed, please advice.</p>	<p><b>Issue is considered to be resolved.</b></p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request 4:</u></p> <p>a) It is not clear to the validation team, why AgCert does not provide anymore the exact project emission and baseline emission information for each farm in table form (table E2 respectively E3 in former PDDs) in the PDD. AgCert should explain why it is not mentioned anymore such information and/or</p>	Table 2, B.5.5.	<p><b>CR4a-</b> The tables are provided in the latest version of the PDD.</p>	<p><b>Tables have been provided in the updated PDD. Hence, issue CR 4a) is considered to be resolved.</b></p> <p><input checked="" type="checkbox"/></p>



Draft report clarifications and corrective action requests by validation team	Ref. to check-list question in tables 1 and 2	Summary of project owner response	Validation team conclusion
<p>provide this information into the PDD.</p> <p>b) Concerning Agropecuaria Barriga Verde it has not been presented any evidence about the use of North-American and/or European swine genetics. This information should be provided to the validation team.</p>		<p><b>CR4b</b> – Genetics evidence has been posted to the PDD supporting documents portal.</p>	<p><b>Regarding CR 4b): Issue is not relevant for this project activity (PDD 28) as Barriga Verde was taken out of the PDD.</b></p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request 5:</u></p> <p>It has to be explained by AgCert why 3<sup>rd</sup> of December 2004 is considered as project start. The first contract was signed on March 03, 2005. Therefore the validation team considers this date as project start.</p>	<p>Table 2, C.1.1.</p>	<p><b>CR5</b> - The first contract was signed on 03 Dec 04 with Neudi Pelizza, owner of Agropecuaria Barriga Verde. That is why that is the start date. Please refer to final contract.</p> <p><i>Agropecuaria Barriga Verde was taken out of this project (PDD 28). The first contract for this project activity (PDD 28) was signed on March, 03, 2005. This should be considered as project start by AgCert.</i></p>	<p><b>The PDD has been adapted to the observation. Issue is considered as resolved.</b></p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request 6:</u></p> <p>It is almost sure according to information found on-site and given by AgCert staff, that the biodigestor operation at Granja Tome Meurer will only begin in February 2007. The starting date of the crediting period is on December 01, 2006. AgCert has to be aware of the fact that in that case CER credits will be lower than in the PDD predicted.</p>	<p>Table 2, C.1.2.</p>	<p><b>CR6</b> - While AgCert notes TUV's observation, the company has decided to establish a Crediting Period Start Date in order to begin earning credits at the earliest date possible as 2 of the farms' biodigesters in the project have been reducing emissions since 2005.</p>	<p><b>The start of crediting period has been changed to a more realistic date.</b></p> <p><input checked="" type="checkbox"/></p>



Draft report clarifications and corrective action requests by validation team	Ref. to check-list question in tables 1 and 2	Summary of project owner response	Validation team conclusion
<p><u>Clarification Request 7:</u></p> <p>a. According to information given by AgCert staff during the on-site visit the flow meter has not to be calibrated according to the manufacturer. How does AgCert make sure that accuracy is guaranteed and that high quality data is delivered?</p> <p>b. During on-site visit the validation team has identified that there is no seal of the flow-meter. How does AgCert guarantee that the farmer or anybody else does not open and manipulate the flow meter?</p>	<p>Table 2, D.7.3.</p>	<p><b>CR7a</b> - Details of the metering equipment have been posted to the PDD supporting documents portal.</p> <p><b>CR7b</b> - Agcert has a rigorous QA/QC system that ensures data security and data integrity. Agcert performs spot audits on all data collection activities.</p>	<p><b>Information has been provided to the PDD supporting documents portal.</b></p> <p><b>Issue is considered to be resolved.</b></p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request 8</u></p> <p>a. Concerning Agropecuaria Barriga Verde it has neither been presented a valid environmental licence nor a protocol to the validation team on-site. AgCert should provide one of those documents to the validation team.</p> <p>b. Concerning Fazenda Kapakeffa it seems that the farm was taken out of PDD 8 due to a missing environmental licence. AgCert should confirm that assumption of the validation team or explain why Fazenda Kapakeffa has been already part of another PDD and taken out of it that time. Besides, AgCert</p>	<p>Table 2, F.1.6.</p>	<p><b>CR8</b> - EL's have been posted to the PDD supporting documents portal.</p>	<p><b>a) Agropecuaria Barriga Verde was taken out of the PDD 28. AgCert should clarify to the validation team in which PDD Barriga Verde takes part now or if it even does not take part of a project activity anymore.</b></p> <p><b>b) The requested environmental licenses</b></p>



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Draft report clarifications and corrective action requests by validation team	Ref. to check-list question in tables 1 and 2	Summary of project owner response	Validation team conclusion
should provide a valid environmental licence or a protocol for Fazenda Kapakeffa.			<p><b>have been ported at the document portal.</b></p> <p><b>Issues are considered as solved.</b></p> <p><input checked="" type="checkbox"/></p>

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Document: Validation Report BR 06-S-28\_25042007.doc

Validation of the AWMS Methane Recovery Project BR06-S-28, Santa Catarina, Brazil



## **Annex 2: Information Reference List**

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Reference No.	Document or Type of Information
1	<p>On-site interviews at the office of Agcert in São Paulo with the project developer conducted in June 2006 and September 2006 by auditing team of TÜV SÜD</p> <p><b>Validation team on-site:</b>  Sandro Marostica            TÜV SÜD Industrie Service GmbH  Wilson Roberto Tomao      TÜV SÜD Industrie Service GmbH  Markus Knoedseder        TÜV SÜD Industrie Service GmbH</p> <p><b>Interviewed persons:</b>  Miguel Gastão              Agcert  David Lawrence              Agcert</p>
2	<p>On-site interview at the sites by auditing team of TÜV SÜD</p> <p><b>Validation team on-site:</b>  Johann Thaler                TÜV SÜD Industrie Service GmbH</p> <p><b>Interviewed persons:</b>  Wednesday, 16.11.2005, Fazenda Kapakeffa, contact: Clair Mascarello  Monday, 11.09.2006, Agropecuaria Barriga Verde, contact: Neudi Pelizza  Tuesday, 12.09.2006, Granja Tome Meurer, contact: Mauricio Meurer</p> <p>Gilson Duarte                Agcert</p>
3	Project Design Document (PDD) "AWMS Methane Recovery Project BR 06-S-28, Santa Catarina, Brazil", AgCert International Ltd, August 19, 2006, Version 1
4	Project Design Document (PDD) "AWMS Methane Recovery Project BR 06-S-28, Santa Catarina, Brazil", AgCert International Ltd, December 2006, Version 2.
5	Carbon Contracts with each farm, pdf-files on TUV Support Documentation Portal,

Final Report 05.02.2007	Validation of the "AWMS Methane Recovery Project BR06- S – 28, Santa Catarina Information Reference List	Page1 of 3	 Industrie Service
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Reference No.	Document or Type of Information
6	Economic Analysis, Word file on CD, submitted July 2005.
7	Farm Production Data of each farm, pdf-files on TUV Support Documentation Portal (confidential);
8	AWMS Technical Specifications, Word-files on CD, submitted July 2005.
9	Licenses and Permits, pdf-Files on TUV Support Documentation Portal,
10	Project Management, Responsibilities and Process flow, word-files on CD, submitted July 2005.
11	Technical specification of the PVC flexible film (biodigester cover) submitted May, 2005
12	Technical specification on flare unit, submitted May, 2005 (confidential)
13	Technical specification on biodigester, submitted May, 2005 (confidential)
14	Operations and Maintenance (O&M) Plan for AWMS Greenhouse Gas (GHG) Mitigation Projects, dated 23 May 2005 (confidential)
15	Monitoring Documentation "Method specification for small scale projects", word file on TUV Support Documentation Portal, August 2006.
16	Document I020-2, QA Process-Product Audits from 11/05/03.
17	Document P025, Control of Measuring & Monitoring Devices (MMD) and document I031-5 Receiving Inspection from 19.02.04
18	Document I005-1, Corrective and Preventive Actions from 21.07.03.
19	AgCert Quality and Environmental Management System Handbook, August 2004
20	Pre-Assessment Checklist for ISO 9001/ISO14001 certification, issued by QMI
21	Flare Unit Service Specifications, submitted May, 2005 (confidential)
22	Gasflow Meter Service Specifications, submitted May, 2005 (confidential)
23	Post Construction Assessment, AgCert Form, May 2005, file on CD, submitted September 2005
24	Monthly Inventory Reporting, AgCert Form, pdf-file on CD, submitted September 2005
25	Monthly Monitoring Form, AgCert Form MS004-F2, pdf-file on CD, submitted September 2005
26	Weekly Monitoring Form, AgCert Form MS004-1F1, pdf-file on CD, submitted September 2005
27	Correspondence Stakeholder, Published invitations to Stakeholder Meeting in newspapers, emails and pdf-files on TUV Support Documentation Portal,

Final Report 05.02.2007	Validation of the "AWMS Methane Recovery Project BR06- S – 28, Santa Catarina Information Reference List	Page1 of 3	 Industrie Service
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Reference No.	Document or Type of Information
28	Minutes of the stakeholder meeting performed, on February 24, 2005 in Joacaba, Santa Catarina, on April 29, 2005 in Chapeco, Santa Catarina,
29	Approved baseline methodology for small scale projects "III.D. Methane Recovery in agricultural and agroindustrial activities, version 11"
30	Approved monitoring methodology for small scale projects "III.D. Methane Recovery in agricultural and agroindustrial activities, version 11"
31	IPCC: Revised 2006 Guidelines for National Greenhouse Gas Inventories
32	IPCC: 2000, Good Practice Guidance
33	Validation and Verification Manual, IETA/World Bank (PCF), <a href="http://www.vvmanual.info">http://www.vvmanual.info</a>
34	Project Design Document (PDD) "AWMS Methane Recovery Project BR 06-S-28, Santa Catarina, Brazil", AgCert International Ltd, 30 Jan 2007, Version 3