



**Verified Carbon  
Standard**

# BRASCARBON METHANE RECOVERY PROJECT BCA-BRA-19



**Document Prepared by Colombian Institute for Technical Standards and  
Certification – ICONTEC International**

<b>Report ID</b>	76745
<b>Project title</b>	Brascarbon Methane Recovery Project BCA-BRA-19
<b>Project ID</b>	Verra Project ID 4289
<b>Verification period</b>	01-01-2023 to 31-12-2023
<b>Original date of issue</b>	02-07-2024
<b>Most recent date of issue</b>	30-04-2025
<b>Version</b>	04.0

<b>VCS Standard Version</b>	4.7
<b>Client</b>	Brascarbon Consultoria, Projetos e Representação Ltda
<b>Prepared by</b>	Colombian Institute for Technical Standards and Certification (ICONTEC) Avenida Calle 26 N° 69 – 76 / Torre 4 / Piso 9, Edificio Elemento Bogotá, Colombia PBX: (57)(1) 580 6419 Ext 1380 or 1381 abermudez@icontec.net www.icontec.org
<b>Approved by</b>	Martha Corredor Validation and Verification <i>Manager</i>
<b>Work carried out by</b>	Adriana M Bermudez as Lead Auditor and Technical Expert in Sectoral Scope 13 Ana Isabel Aubad as Lead Technical Reviewer and Technical Expert Reviewer in Sectoral Scope 13

**Summary:**

- A description of the verification of the project

Brascarbon Consultoria, Projetos e Representação Ltda commissioned ICONTEC International to perform the verification assessment of the second monitoring period (01-01-2023 to 31/12/2023 (first and last days included) of the proposed project activity “BRASCARBON Methane Recovery Project BCA-BRA-19, Brazil (Reference Number VCS: 4289), on the basis the scope of the VCS Program that include of UNFCCC criteria contained in Article 12 of the Kyoto Protocol, the approved CDM methodology AMS-III.D. "Methane recovery in animal manure management systems" (version 21.0) is applied to quantify the GHG removals achieved in this project.

- The purpose and scope of verification

The purpose of the validation and verification assessment was to have an independent third-party assessment of the proposed the beginning of first crediting period form 05/01/2022 until 04/01/2029. The current scope of verification is the second verification pertaining to this first crediting period.

The verification scope encompassed by the audit team is defined an independent and objective assessment of the GHG emission reductions that have occurred as a result of the implementation of the project activity during a defined monitoring period. The verification process consisted of the following four phases: I. Desk review of the monitoring documentation report and relevant information II. Telephonic interviews with project personnel responsible of the operation and monitoring of the proposed project activity. III. On Site Inspection. IV..Resolution of outstanding issues and the issuance of the final verification and report previously technical review.

- The monitoring period

In the course of the verification, 1 Corrective Action Requests (CARs), 6 Clarification Requests (CLs) were raised and successfully closed. The assessment is included in the report.

- Any uncertainties associated with the verification

There are no restrictions of uncertainty for verification.

- Summary of the verification conclusion

Brascarbon. has commissioned the ICONTEC International to carry out the Verified Carbon Standard (VCS) with 2<sup>nd</sup> periodical verification of the project, “ Brascarbon Methane Recovery Project BCA-BRA-19” (VCS ID 4289) with regard to the relevant requirements of VCS standard Version 4.7. Icontec confirms all verification activities including objectives, scope and criteria, level of assurance, monitoring report adhere to VCS Version 4.4 template and all associated updated as documented in this report, are complete.

ICONTEC concludes that the project activity “Brascarbon Methane Recovery Project BCA-BRA-19,” implemented in Brazil and based on version 4.4 of the Monitoring Report Template, underwent several revisions beginning with version v2 submitted in June 2024, followed by version v3 in November 2024, and most recently updated to version v4 in March 2025 with

additional corrections and adjustments. This latest version appropriately addresses the recommendations provided and meets all relevant verification requirements under the VCS standard. Furthermore, the methodology AMS-III.D, version 21.0, was correctly applied. As a result, ICONTEC is able to issue a positive verification opinion in accordance with VCS requirements and certifies that the project achieved a greenhouse gas (GHG) emission reduction totaling 52,511 tCO<sub>2</sub>e (VCUs) during the second monitoring period, from January 1 to December 31, 2023.

# CONTENTS

---

<b>1</b>	<b>INTRODUCTION .....</b>	<b>7</b>
1.1	Objective .....	7
1.2	Scope and Criteria .....	7
1.3	Level of Assurance .....	10
1.4	Summary Description of the Project .....	10
<b>2</b>	<b>VERIFICATION PROCESS .....</b>	<b>11</b>
2.1	Method and Criteria .....	11
2.2	Document Review .....	12
2.3	Interviews .....	13
2.4	Site Visits .....	14
2.5	Resolution of Findings.....	16
2.6	Eligibility for Validation Activities .....	17
<b>3</b>	<b>VALIDATION FINDINGS .....</b>	<b>17</b>
3.1	Methodology Deviations .....	17
3.2	Project Description Deviations.....	17
3.3	New Project Activity Instances in Grouped Projects.....	17
3.4	Baseline Reassessment.....	17
<b>4</b>	<b>VERIFICATION FINDINGS .....</b>	<b>18</b>
4.1	Project Details .....	18
4.2	Safeguards and Stakeholder Engagement .....	23
4.3	Accuracy of Reduction and Removal Calculations.....	32
4.4	Quality of Evidence to Determine Reductions and Removals.....	43
4.5	Non-Permanence Risk Analysis.....	44
<b>5</b>	<b>VERIFICATION OPINION.....</b>	<b>45</b>
5.1	Verification Summary .....	45
5.2	Verification Conclusion.....	46
5.3	Ex-ante vs Ex-post ERR Comparison .....	46
	<b>APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION .....</b>	<b>48</b>

<b>APPENDIX 2: ABBREVIATIONS.....</b>	<b>49</b>
<b>APPENDIX 3: DOCUMENTS REVIEWED OR REFERENCED.....</b>	<b>50</b>
<b>APPENDIX 4: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS AND FORWARD ACTION REQUESTS.....</b>	<b>65</b>
<b>APPENDIX 5: DATA AND PARAMETERS .....</b>	<b>70</b>
<b>1.DATA AND PARAMETERS AVAILABLE AT VALIDATION .....</b>	<b>70</b>
<b>2.DATA AND PARAMETERS MONITORED.....</b>	<b>74</b>

# 1 INTRODUCTION

## 1.1 Objective

Brascarbon Consultoria, Projetos e Representação Ltda commissioned ICONTEC to conduct for the validation and verification for the Verified Carbon Standard (VCS) in conjunction in 2022 (The first crediting period is from 05/01/2022 until 04/01/2029 and the first monitoring). In 2024, Brascarbon commissioned ICONTEC to conduct the second verification for the second monitoring period; this activity corresponds to the present report (from 01/01/2023 to 31/12/2023, including the first and last day) of the proposed project activity "BRASCARBON Methane Recovery Project BCA-BRA-19, Brazil" (VCS Reference Number: 4289).

This verification report corresponds to the monitoring period from 01/01/2023 until 31/12/2023. This is the second period scope encompassed by the audit team, defined as an independent and objective assessment of the GHG emission reductions that have occurred as a result of the implementation of the project activity during a defined monitoring period.

The verification process consisted of the following four phases I. Desk review of monitoring documentation, validation report and relevant information; ii. Telephone interviews with project personnel responsible for the operation and monitoring of the proposed project activity. III. On-site inspection at 10 project sites located in the state of Mato Grosso (Brazil). IV. Resolution of outstanding issues and issuance of final verification report and pre-technical review.

## 1.2 Scope and Criteria

The verification scope involves an independent and objective review to determine that the project design meets the following VCS criteria:

- VCS Standard, v4.7/10/
- VCS Program Guide, v4.4/9/
- VCS Program Definitions, v4.4/8/
- VCS-Monitoring-Report-Template-v4.4/5/
- VCS- Verification -Report-Template-v4.4/6/
- VCS Registration and Issuance Process version 4.4/7/
- Methodology: Methane recovery in animal manure management systems. AMS-III.D, version 21.0 and Tools

ICONTEC carries out audits according to its ethics code and internal procedures for carrying out validation, verification, and certification audits of VCS project activities, which, in turn, are based on the VCS Standard. Likewise, ICONTEC focuses on the identification of significant risks for generation, and verification of the mitigation during its audits.

The verification does not intend to provide any consulting for the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The scope of the verification is defined as an independent and objective review of the Monitoring Report VCS: Brascarbon Methane Recovery Project BCA- BRA-19\_v3 /1 /The verification team, based on the specific instructions in the VCS, employed a risk- based and step-wise approach when conducting the verification, focusing on the identification of significant risks for project implementation and the calculation of the emission reductions.

The project activity examined under this verification on site of the process involves the GHG emission reductions through an animal waste management system. The system was put in place as a mean to treat animal waste generated from swine confined feed operations. Effluents generated from swine production are treated in biodigesters which, on its turn, consists of a covered in-ground anaerobic reactor capable of anaerobically treat effluent originated at the swine production operation. Finally, effluents treated on biodigesters produce biogas to be destroyed through a flaring system.

The verification scope encompassed by the audit team is defined an independent and objective assessment of the GHG emission reductions.

The verification process consisted of the following four phases:

- I. Desk review of the monitoring documentation, registered PD-MR, and relevant information
- II. Remote visit or virtual visit<sup>1</sup> to 10 farms (total project sites): visit to each of the farms identified by numbers 323 to 332, tour of all sites, confirmation of georeferencing, identification of control equipment, flare, biodigester status and recorded field information.

According to VCS Standard / 10/ for this second verification, it was not necessary to conduct an on-site visit: the first verification was carried out together with the validation, it does not correspond to a reassessment of the project, and there are no deviations in the project description or methodological deviations.

- III. Interviews with the director, manager and project staff responsible for the operation and monitoring of the proposed project activity.

---

<sup>1</sup>(VCS Standard v.7) section 4.1.12

IV. Resolution of outstanding issues and the issuance of the final verification and certification report.

ICONTEC confirmed that the PP correctly followed the instructions for filling out the VCS MR Monitoring report form (template) version 4.4 –Brascarbon Methane Recovery Project BCA- BRA-19\_PD-MR v3 /1/and MRv.2 /2/.

The review of the monitoring documentation, relevant information and follow-up interviews allowed ICONTEC to collect enough evidence to completely assess the verification criteria and conclude that the project has been implemented as planned and as it has been described in the latest version of PD&MR /1/. Lastly, the emission reductions were correctly calculated by PP, and the monitoring equipment with an impact on the claimed emission reductions performed a reliable operation. The monitoring systems are in place and have been calibrated appropriately. ICONTEC concludes that the GHG emission reductions are calculated without material misstatements. Hence, ICONTEC can confirm the following in verification:

VCS project:	BRASCARBON Methane Recovery Project BCA-BRA-19, Brazil (Reference Number: 4289)
Reporting period:	1 <sup>st</sup> January 2023 to the 31st of December 2023
Baseline emissions:	75,513 tCO <sub>2</sub> e (Total Methane destroyed: 56, 064 tCO <sub>2</sub> e)
Project emissions:	23,002 tCO <sub>2</sub> e
Leakage:	0 tCO <sub>2</sub> e
Emission Reductions:	52,511 tCO <sub>2</sub> e

ICONTEC as VVB entity in charge of carrying out the verification activity considered as main documents are the Monitoring Report and CER Calculations/2/, and tools that requires; the obtained information reviewed against the criteria stated in VCS standard /10/ and the approved baseline and monitoring methodology AMS-III.D. version 21.0/3/.

The verification was based on the requirements VCS Program /5/6/7/8/9/10/51.

The scope of the verification allows to identify the behaviour of a project in full execution, monitoring system and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; the GHG emission reductions data and express a conclusion with a reasonable level of assurance about whether he reported GHG emission reductions data are free from material misstatement; the reported GHG emissions data is sufficiently supported by evidence.

ICONTEC International likewise have expertise in multiples standards to Verification and auditor is conducted as well as the procedures in line with the requirements specified in the VCS Program and accredited in ISO series, the ISO 14064-3:2019 requirements and applying auditing techniques. The verification team assessed and determined that the implementation and operation of the project activity, and steps to report GHG emission reductions comply with the VCS rules.

### 1.3 Level of Assurance

The level of assurance achieved is higher than 90%, leading the audit team to consider it as such. The information sources used for this evaluation by the audit team have been considered reliable, including, among others: the PD-MR/1/, MR/2/, ER spreadsheets/2/, and evidence such as records from each site; interviews with the Project Manager and the Director of Brascarbon, as well as with the PP representatives in general; desk reviews of documentation, and secondary sources of information employed.

Since the calculated emission reductions in MR/2/ are 52,511, tCO<sub>2</sub>e (365 days), the applicable materiality (5%)<sup>2</sup>threshold is 2,625.55 tCO<sub>2</sub>e Registers and support files were verified using the sampling approach. Data and figures were cross-checked, and the traceability of data was assessed by comparing the different support documents and contrasting figures of baseline emissions, project emissions and emission reductions of GHG.

The verification team is able to confirm that all the parameters are correctly monitored, and the calibration of the meters was assured by calibration procedures defined by the PP. All data reported in the CER calculation file /2/ has been completely verified. The data management system and QA/QC process are carried out appropriately. Thus, the audit team did not detect material errors, omissions or misstatements during the risk assessment stated by UNFCCC on applicable criteria /3/4/19/52/ and VCS Program/5/6/7/8/9/10/51.

### 1.4 Summary Description of the Project

Brascarbon Consultoria, Projetos e Representação Ltda. commissioned ICONTEC in order to perform the verification assessment for of the second monitoring period (01/01/2023 to 31/12/2023 (first and last days included) of the proposed project activity “BRASCARBON Methane Recovery Project BCA-BRA-19, Brazil (Reference Number VCS: 4289), and first credit period located in Brazil the State of in the cities located at the Mato Grosso do Sul state, central Brazil. The verification assessment was carried out through a process of document review based the PD-MR Version 3 dated on 06/12/2023<sup>3</sup> /1/, and the MR /2/ in this verification report, and the subsequent modifications to the MR are visible on the version 02/2/ dated 26/06/2024.

---

<sup>2</sup> Materiality is a threshold that determines the significance of errors or omissions. According to ISO 14064-3, the level of materiality is defined in terms of the impact that an error or discrepancy could have on the decisions of the users of the project's information

<sup>3</sup> the baseline of the proposed project activity and the monitoring plan and other relevant documents of the Project are included in the annexes.

The project activity examined in the validation process /1/ involves the reduction of greenhouse gas emissions through an animal waste management system; the system was implemented as a means to treat animal waste generated by confined swine feeding operations. Effluents generated from swine production are treated in biodigesters, which, in turn, consist of a covered in-ground anaerobic reactor capable of anaerobically treating effluents originating from the swine production operation. Finally, effluents treated in the biodigesters produce biogas that is destroyed through a burning system.

The verification for second monitoring period (01/01/2023 to 31/12/2023 (first and last days included) and verification with crediting period included an assessment on those specific features of the project activity with the verification criteria and conclude that the project has been implemented as planned and as it has been described in the latest version of MR /2/. Lastly, the emission reductions were correctly calculated based on the monitoring equipment with an impact on the claimed emission reductions performed a reliable operation. The monitoring systems are in place and have been calibrated appropriately. ICONTEC concludes that the GHG emission reductions are calculated without material misstatements.

In conclusion, the Project Participant provided documents and supporting evidence for the verification of the second monitoring period from 01/01/2023 to 31/12/2023 (including the first and last days) as well as, provided to register of the first crediting period (seven years from 05/01/2022 to 04/01/2029), of the proposed project activity “BRASCARBON Methane Recovery Project BCA-BRA-19, Brazil (Reference Number VCS: 4289),

## 2 VERIFICATION PROCESS

### 2.1 Method and Criteria

ICONTEC, for the development of verification under the VCS standard, takes into account the guidelines established in the ISO standard, such as ISO 14064-3:2019, which states: "Greenhouse gases - Part 3: Specification with guidance for the verification and validation of greenhouse gas statements". Therefore, verification was conducted based on the criteria mentioned in Section 1.2 Scope and Criteria of (this verification report), which are as follows:

- VCS Standard, v 4.7/10<sup>4</sup>
- VCS Program Guide, v4.4/9/
- VCS Program Definitions, v4.4/8/
- VCS-Monitoring-Report-Template-v4.4/5/
- VCS- Verification -Report-Template-v4.4/6/

---

<sup>4</sup> The execution of the monitoring is also reviewed based on this version.

The verification consisted of the following three phases:

- Document review
- Remote assessment
- The resolution of outstanding issues and the issuance of the final verification report and certification.

The verification process derived from all items in the verification criteria stated above. Field inspection and techniques based on the project parameters, scope and best professional judgement of the validation and verification team in order to meet a reasonable level of assurance.

## 2.2 Document Review

As mentioned in the summary and in Chapter 1 of this report, the verification process is composed of several stages, one of the main ones being the documentary review. This documents review included an examination of the project design details, baseline scenario, additionality, ex ante and monitoring data and parameters, and quantification of GHG emission reductions, and ex- post as monitoring or to the basic conditions and technical data. As part of the activities carried out, the audit team performed documental review of the calculation files /2/ and cross checked the information, data and figures of the calculation file against the data provided in different support documents used for the calculation of GHG emission reductions. In addition, personnel involved in monitoring activities were interviewed, and the QA/QC activities as well as data collection assessed.

The implementation of a project's documentation and registration system is key to respond to the concerns of a third party independent of the project, either on site or remotely.

On the other hand, the traceability of project information is achieved through a valid registration system with updated information, either historical or through follow-up and monitoring if it is for verification.

In this particular case, for this project, which pertains to the verification process, it entails gathering as much information as possible in the verification components. The verification was conducted based on document review and remote inspection, as well as measurements provided by the PP. Additionally, information was cross-referenced with sections 3 and 4 of the Validation and Verification Report /53/ and the detailed current verification report along with the corresponding document review.

In the case of verification, the review includes the monitoring and calculation system, with field verification of the functionality of the registration system, handling of information by the operating team and traceability of this information, among others. The references used in the course of this verification are summarized in Appendix 2.

## 2.3 Interviews

The audit team performed a series of telephonic interviews with the Brascarbon CDM Manager. Mr. David Garcia was interviewed to confirm all information provided regarding the second monitoring period of the first crediting period. Discussions with David Garcia also included remote audit activities related to operational and monitoring conditions, findings, among other topics. Furthermore, an interview was conducted with Mr. Mario Pacifico, Director of Brascarbon, to ensure the implementation of the project activity. This interview allowed the team to understand the project environment, operation, data acquisition, and to compare these aspects with the MR /2/ as well as the applicable requirements.

ICONTEC maintained ongoing communication with Mr. Mario Silva, Legal Representative of the contracting entity and Mr. David Garcia, Brascarbon CDM Manager, in order to confirm all information provided for registration of the project with VERRA.

The dates and subjects of the discussed, email, telephonic and WhatsApp based interviews conducted with the PP are described as follows:

No	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	Pacifico	Mario	Brascarbon Director	30/05/2024	Introduction to plan verification of the project General conditions of the monitoring of the project activity Implementation status of the project	Adriana Bermudez
2	Garcia	David	Brascarbon CDM Manager	06/06/2024 / 07/06/2024	- Description and operation of the project activity -Monitoring system Baseline GHG emissions -Project GHG emissions -Leakage GHG emissions -GHG emission reductions -Reviewing of the spread sheets -Materiality basement	Adriana Bermudez
3				04/06/2024	Verification and data cross checking. -Materiality assessment -Calibration performance	

No	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
4				30/05/2024 - 10/07/2024	-Monitoring equipment in operation - POPs - data and files - Support documents -Monitoring equipment in operation Verification and data cross checking.	

## 2.4 Site Visits

The actual project was visited in June 2023 for validation (first crediting period) and verification (first verification); at the time, ICONTEC identified 10 Project sites and adequately described each of them, as can be seen in the Validation and Verification report /53/.

No.	SITE ID PROJECT -19 (10 sites)	SITE NAME	SITE OWNER	REGION
1	BCA-323MS1-19	Lote 23 Quadra 27	Andre Henrique da silva Boigues	Jatei
2	BCA-324MS1-19	P. L. N 24 e N 26 Q. 37 (Partes do Lotes Rurais N° 24 e N°26 Quadra 37)	Geraldo Ferro da Silva	Gloria de Duorados
3	BCA-325MS1-19	Lotes 35, 37 e 39 Quadra 39	Luiz Sergio Golfeto	Gloria de Duorados
4	BCA-326MS1-19	Lote Rural N 56 Quadra 34	Maria de Lourdes Merlotte Torrezan	Gloria de Duorados
5	BCA-327MS1-19	Quadra 61 Lote 43	Valdecir Pedro Gomes	Gloria de Duorados
6	BCA-328MS1-19	Lote 4 e 6 Quadra 61, Lotes 03,05,07 e 09 Quadra 64	Graça Rodrigues Nantes	Gloria de Duorados
7	BCA-329MS1-19	Sítio N. S. A. (Sítio Nossa Senhora Aparecida - Parte dos Lotes 3 e 5 da Quadra 29)	Paulo Ulisses Bacurau	Jatei
8	BCA-330MS1-19	Lote 45 Quadra 61	Maria Amelia Da Costa	Gloria de Duorados
9	BCA-331MS1-19	Lote 42 Q. 28	Jairo Isauro Medeiros	Villa Vicentina
10	BCA-332MS1-19	Parte dos lotes 46 e 48 - Quadra 48	Sebastião Isauro Medeiros	Villa Vicentina

The present Project for the second verification did not have an on-site visit because it does not fall under any of the circumstances manifested by the standard/10/ and we received all the information and current photographic field records of the 10 sites, which were thoroughly reviewed and confirmed by georeferencing, in addition to the historical information provided by Brascarbon and that the project has, which ICONTEC has for data cross-checking and verification/1/10/53/.

The VCS Standard v.4.7/10/ indicates in its section 4.1.11 that site visits should be conducted when conducting validation and project crediting period renewal validation. Additionally, the VCS Standard 4.7/10/ in its section 4.1.12 indicates that "...A site visit that includes a visit to facilities and/or project areas shall be conducted at verification under the following circumstances: 1) The first verification of the project after validation; 2) Verifications that include project baseline reassessments; and 3) Verifications that assess a project description deviation where the deviation impacts the applicability of the methodology, additionality, or the appropriateness of the baseline..."

Considering the above, the present Project for the second verification did not have an on-site visit because it does not fall under any of the circumstances manifested by the standard/10/ and we received all the information and current photographic field records of the 10 sites, which were thoroughly reviewed and confirmed by georeferencing, in addition to the historical information provided by Brascarbon and that the project has, which ICONTEC has for data cross-checking and verification.

Additionally, ICONTEC conducted a risk assessment of the project before the verification began, under the regulations of ISO 14064 and 14065, specifically under the ISO/IEC 17029:2019 and ISO 14065:2020 standards. The analysis was carried out using format F-PS-1001, titled "Strategic Analysis and Risk Assessment for Validation and Verification of GHG Mitigation Projects." This document, developed by ICONTEC for the internal control and monitoring of GHG mitigation projects, primarily includes a descriptive analysis of the project, following a listed sequence of considerations related to GHG mitigation, such as project location, nature of operations, requirements of the regulatory criteria of the program to which the project applies, materiality threshold, disclosure of the GHG statement, suitability of methods, changes in emissions, sources of information on GHGs, statements, results of previous verifications, appropriate methodology, monitoring plan, previous reports (among others), and evaluates risks in terms of control risks (human errors in emission quantification, data coverage, lack of documentation, methodological changes or deviations), inherent risks (dependence on a technological platform, facts discovered after validation or verification), detection risks (delays in calibration, measurement of equipment, absence of data due to measurement operation failures), risk level, justification of the risk, and risk control systems for both validation and verification.

The risk assessment also estimates the necessity of a site visit, whether in person or remote, and explains the determined reasons.

In the case of the present project, it satisfactorily met the risk assessment, allowing progress with the development and execution of the audit plan, conducting remote verification of the project for the ten sites or farms that are part of the project, supported by real-time information from the project sites, ensuring compliance with the voluntary and mandatory regulations governing the project.

ICONTEC confirms that the sites described in the MR /2/ correspond to what is indicated in the PD-MR/1/ and the supporting documents are consistent with what is identified in the project.

## 2.5 Resolution of Findings

The identification of findings in the verification report or documents is fundamental in a project, because it allows to improve, correct or take a decision that benefits the normal development of the project and fulfils its objective.

The resolution of outstanding issues, the findings raised and described in Appendix 4 further in this verification report, and the subsequent modifications to the revised MR version 2/1/ dated 25/06/2024. The Material discrepancies identified in the course of the verification are addressed either as CARs, CLs or FARs.

A Corrective Action Request (CAR) is established where:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- The VCS Standard Version 4.7 requirements have not been met;
- There is a risk that the emission reductions cannot be monitored or calculated.

A Clarification Request (CL) will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A Forward Action Request (FAR) will be issued when certain issues related to project implementation should be reviewed during the next verification.

A detailed list of the CARs CLs and FAR raised and discussed in the course of this verification is included in Appendix 4 of this report.

In the course of the verification 1 Corrective Action Requests (CARs), 6 Clarification Requests (CLs) and 1 Forward Action Request (FAR) were raised and successfully closed. The assessment is included in the report.

### 2.5.1 Forward Action Requests

No forward action request was raised during the validation and the first verification /1/53/ for registration purposes; however, due to Verra's requests and to provide clarity for future

verifications, a forward action request was issued to the Project Participant (PP) for this version of the verification report /2/, which is included in Appendix 4 of this report.

## 2.6 Eligibility for Validation Activities

ICONTEC is currently accredited for sectoral scope 13 to which the Project belongs. See on the VERRA, see <https://verra.org/validation-verification/colombian-institute-for-technical-standards-and-certification-icontec/>.

# 3 VALIDATION FINDINGS

## 3.1 Methodology Deviations

There are not any methodology deviations applied to the project.

## 3.2 Project Description Deviations

There are not deviations applied to the project; there is no methodology deviation, additionality, or appropriateness of the baseline scenario presented.

## 3.3 New Project Activity Instances in Grouped Projects

Not applicable. The project is not a grouped project; it is a single project comprising a total of 10 farms (a fixed number for the entire project crediting period). Therefore, the project is a multiple project activity instance, and additionally, it does not present new project activity instances.

## 3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

- Yes  No

# 4 VERIFICATION FINDINGS

## 4.1 Project Details

Item	Evidence gathering activities, evidence checked, and assessment conclusion:
Audit history	<p>The project is fully implemented and has been in operation since 05/01/2022, the date on which the first farm began the monitoring phase (05-01-2022 to 31-12-2022). A joint validation and verification audit was conducted in June 2023/53/ which allowed its registration with Verra - crediting period 05-01-2022 to 04-01-2029.</p> <p>The current verification corresponds to the second monitoring period of the first crediting period (01-01-2023 to 31-12-2023).</p>
Double counting and participation under other GHG programs	<p>ICONTEC reviewed GHG standards and programs such as UNFCCC and CERCARBONO, where the project could potentially have registered information. No information was found confirming that the project is receiving or seeking credits for emission reductions from a project activity under another GHG program.</p> <p>No evidence of double issuance was found in accordance with the requirements of the VCS Standard.</p> <p>The project has provided all required information confirming that it is not registered or active in other GHG programs..</p>
No double claiming with emissions trading programs or binding emission limits	<p>The project activities are not included in an emissions trading program or binding emission limit. The project is compliant with VCS Standard requirements/10/ section 3.24.3 – 3.24.4</p>
No double claiming with other forms of environmental credit	<p>The project does not present double claims; the project is in accordance with VCS Standard requirements. Additionally, ICONTEC conducted searches for information on the Brascarbon Methane Recovery project 19 and found no information related to the project other than the registration made in VERRA /10/ section 3.24.5 - 3.24.6</p>
Supply chain (scope 3) emissions double claiming	<p>Standard VCS v.4.7 /10/ section 3.24.7</p> <p>The project proponent is not part of the supply chain, therefore their emissions footprint is not altered by the project activities.</p>

Sustainable development contributions

The VCS standard, version 4.7 in its section 3.17, clearly determines the importance of the voluntary contribution of the Project Proponent (PP) to sustainable development through the activities of its project. Accordingly, Brascarbon contributes to sustainable development in at least 4 of the 17 Sustainable Development Goals (SDGs). In the MR/2/, the PP indicates "Sustainable Development Contribution" that the 4 SDGs to which it contributes are:

SDG 6 Clean Water and Sanitation – The project complies with this objective since it contributes to a cleaner effluent, after treatment, which is discharged into to a water body was well as it contributes to the prevention of groundwater contamination through the treatment of the effluent.

SDG 9 Industry, Innovation and Infrastructure – The project complies with this objective since it provides an innovation on the wastewater treatment in swine farms, through the construction of new and more technological infrastructures.

SDG 13 Climate Action – The project complies with this objective since it is a project that reduces the GHG emissions in the normal operation in swine farms, as demonstrated in the registered PD and current MR.

SDG 15 Life on Land Ecosystems– The project complies with this objective since it contributes to a better surrounding in overall, by reducing the smell, insects and air quality by preventing a wastewater treatment (and therefore organic matter decomposition) in open lagoons.

Similarly, in the PD-MR/1/ section 1.12 before the description of the SDGs, the project's natural contribution to environmental matters is adequately described, in accordance with the requirements of environmental authorities such as resource management, odor pollution control, water flows, and general staff welfare, which is also mentioned in the VVR/53.

Considering the requirements of the MR v.4.4 template and standard 4.7, the PP described in detail in Table 1 the relevant aspects of the contribution to the SDGs.

The main aspects described in Table 1 by the PP in the MR/2/ and which align with the United Nations and are also adopted by Brazil<sup>5</sup>:

The goals are estimated for 2030. For Goal 6, Brascarbon has considered 2 targets MR/2/:

<sup>5</sup> <https://brasil.un.org/pt-br/sdgs/6>  
 Brazil\_ Second Nationally Determined Contribution (NDC)\_ November2024.pdf  
 CCR\_GEE\_2019.pdf  
<https://agenda2030lac.org/es/paises/brasil>  
<https://odsbrasil.gov.br>

•6.3 Improve water quality by reducing pollution, eliminating dumping, and minimizing the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing global recycling and safe reuse. According to the data provided in Table 1 of the Monitoring Report submitted by the project proponent, the contribution for the current period amounted to 153,200 cubic meters of wastewater. This is a considerable volume, taking into account the total of 73,000 animals reported for this period and the effective occupancy time. Additionally, the report includes details on the volume of wastewater generated during the first period of the project, which have been taken into account in this VR. En relación con la contribución over Project lifetime, se estima para los 7 años 1072,4 k cubic meters valor importante teniendo en cuenta que Diversos estudios en Brasil respaldan la eficacia de estos sistemas. Por ejemplo, investigaciones realizadas por la Universidd de Federal de Goiás evidenciaron reducciones promedio de 63,7% en DBO y 62,9% en DQO en granjas porcinas utilizando biodigestores (Silva et al., 2019), y se identifican las reducciones de BDO 76% y reducción DQO 77 (Scielo Brasil)%<sup>6</sup> This directly supports SDG 6.3.1 by improving water quality through the treatment of wastewater.

•6.6 Protect and restore ecosystems related to water, including mountains, forests, wetlands, rivers, aquifers, and lakes. Under this goal, Brascarbon estimates contributions for Monitoring Periods 1 and 2 (the current period) totaling 291.6 thousand cubic meters of treated water, representing 27% of the total calculated value over the first 7 years of the project's lifetime: 1,072.4 thousand cubic meters, which in turn corresponds to 9% of the estimated 3,217.4 thousand cubic meters expected over the full 21-year project duration (3 project cycles). This treated volume corresponds to water processed through biodigester systems, oxidation ponds, and biogas combustion. In the absence of the project, these wastewater streams would be contaminating water sources where liquid waste from pig farms would otherwise be discharged. On average, wastewater is treated through anaerobic processes that remove up to 90% of organic matter (including pathogens and harmful nutrients), converting waste into biogas (mainly methane) and leachate. This process significantly reduces the organic load and nutrients such as nitrogen and phosphorus in the treated water, thereby decreasing pollution in nearby water bodies and protecting the environment..<sup>7</sup>

<sup>6</sup> <https://www.cea-unesp.org.br/holos/article/download/2547/3422>

<https://www.scielo.br/j/rbeaa/a/qXgpZzBJKxvyj5PztbhOgCh/>

[https://www.proceedings.scielo.br/scielo.php?pid=MSC0000000022006000100022&script=sci\\_arttext](https://www.proceedings.scielo.br/scielo.php?pid=MSC0000000022006000100022&script=sci_arttext)

<https://www.teses.usp.br/teses/disponiveis/106/106133/tde-12052021-160459/>

<sup>7</sup> <https://institutodelagua.es>

For Goal 9, the target selected by the project proponent in the second monitoring period (PP/MR/2) was 9.4: Modernize infrastructure and rehabilitate industries to make them sustainable, with more efficient resource use and greater adoption of clean and environmentally responsible industrial technologies and processes, with all countries acting according to their respective capacities. The project proponent confirms that the modernized infrastructure installed for the project implementation at each site reduces GHG emissions by 57.9 kilotons of CO<sub>2</sub>e annually (according to the values provided in the PD).

The PP included in Table 1 of the SDG section information on the current contribution of the project in Monitoring Period 2 (52,511 tCO<sub>2</sub>e) as well as data for Monitoring Period 1 (50,007 tCO<sub>2</sub>e), showing that the emission reductions are in line with what was planned in the PD. Regarding the contributions over the project lifetime, a reduction of 405 ktCO<sub>2</sub>e is estimated for the first cycle, and 1.16 million tCO<sub>2</sub>e for the total estimated period of 21 years.

In addition, the PD includes a detailed presentation of operational costs, while ensuring sustainable practices in pig farming. Compliance is also assured, as each project site or farm holds the environmental permits granted by the regional environmental authority (IMASUL).

For Goal 13 – Take urgent action to combat climate change and its impacts (recognizing that the United Nations Framework Convention on Climate Change [UNFCCC] is the primary international intergovernmental forum for negotiating the global response to climate change), Brazil has linked this goal to Target 13.2 – Integrate climate change measures into national policies, strategies, and planning.

In this context, the response regarding how the project addresses this indicator is as follows: "the project will reduce GHG emissions<sup>1</sup> by 57,9 kt of CO<sub>2</sub>e annually (according to PD values), and it has reached over 90% of this estimated figure during both the first and second monitoring periods, as well as during the 7-year cycle with an estimated reduction of 405 kt CO<sub>2</sub>e. Over a 21-year period, this represents a total reduction of 1.16 million tons of CO<sub>2</sub>e throughout the project's lifetime, thereby contributing to the achievement of Brazil's NDC.

Target 13.3: Improve education, increase awareness, and strengthen human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning systems.

The project complies with this objective by reducing 52,511 tCO<sub>2</sub>e in the current monitoring period, thus contributing to the achievement of Brazil's NDC and the state goals, as referenced in this chapter of the VR. For the current monitoring period, CH<sub>4</sub> emissions reductions amount to 1,875 k t (compared to 1.785 kt in the first monitoring period).

	<p>The positive impact of the project activity over the full 7-year crediting period reaches 14,4 kt of CH<sub>4</sub>, and 43,4 kt of CH<sub>4</sub> over the total 21-year project duration—an even more significant contribution.</p> <p>The Project Participant (PP) has also taken into account the guidance provided by the MS Carbono Neutro – PROCLIMA state program and its implementation tool, RTNC (Neutral Carbon Territory). Additionally, the PP has been attentive to the commitments made by IMASUL in the region and has carried out awareness-raising and training activities to build understanding among farm representatives involved in the project about the importance of GHG mitigation in the context of climate change.</p> <p>For Goal 15, the PP's target 15.1 Ensure the conservation, restoration, and sustainable use of terrestrial and freshwater ecosystems and their services, especially forests, wetlands, mountains, and arid lands, in accordance with the obligations arising from international agreements. The PP estimates contributing to improving environmental conditions within a 5 km radius around each farm with the treatment system, benefiting over 100 families. The project helps reduce the proliferation of insects and odors, contributing to healthier ecosystems and better living conditions. The resulting water can be used for non-potable purposes, such as irrigation, depending on additional treatment levels such as filtration and disinfection. This approach also helps prevent contamination of nearby water bodies and generate biofertilizers from solid waste.</p> <p>The above considers the 153.2k cubic meters of wastewater treated during the current monitoring period and the 138.4 cubic meters treated during the first monitoring period.</p> <p>Likewise, the PP refers in Table 1 to the contribution over the project lifetime, including the estimated values for the 7-year crediting period, the current cycle, and the total 21-year project lifetime./1//2/.</p> <p>Icontec confirms that the information provided by Brascarbon is consistent with both the projected outcomes and the results achieved up to the period analyzed — the second monitoring period.</p>
<p>Additional information relevant to the project</p>	<p>Not applicable to this project, there is no commercially sensitive information that has been excluded from the public versions.</p>

## 4.2 Safeguards and Stakeholder Engagement

### 4.2.1 Stakeholder Identification

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Stakeholder identification</b>	For the Project Validation, the Project Proponent (PP) presented the different stakeholder groups that initiated engagements since 2020, such as entities from the sector: environmental authorities, health authorities, suppliers of goods and services related to the project, as well as individuals associated with the project, owners of the sites that make up the Project/49/. Additionally, the public consultation conducted on the Verra website from 30/05/2023 to 02/06/2023 resulted in no comments from the public; this information can be found in the main documents and supports of the PD-MR/1/in the MR actual verification/2/ and in the Validation and Verification Report /53/.
<b>Legal or customary tenure/access rights</b>	The PP /2/ confirm that all the project sites in the project activity are within private properties with already existing commercial activities (swine production). All the project sites have contracts with the swine farm owners in order for the PP to have full access to the operation, maintenance and monitoring of the project activity/49/. This was presented in VVR /53/.
<b>Stakeholder diversity and changes over time</b>	The PP, present in the region for several years and with the current project for 3 years, demonstrates a stable relationship with stakeholders. On the other hand, the region maintains a constant population, and diversity and changes are not characteristic of the area. However, it is noted that the owners of the sites belonging to the project have appropriate communication that allows for the proper development of the Project.
<b>Expected changes in well-being</b>	The well-being of the Project is integral in strengthening environmental practices on the farms, as well as providing well-being for the project's own operational technicians and farm staff (indirectly). However, the director of Brascarbon and the manager have been identifying risks and critical points that are susceptible to solution or mitigation. In addition to training and constant communication with the team for fault control, technical corrections to any situation in biodigesters, measurement equipment, and variable control are also being made. Furthermore, a training plan for the staff has been structured to ensure regular and relevant training for the project and occupational health for the technical team of both the project and the farms.
<b>Location of stakeholders</b>	Mato Grosso do Sul State
<b>Location of resources</b>	All the sites included in the project activity are within private properties and therefore with limited access to each project site owner. The farms are distributed in rural areas near intermediate cities such as, Villa Vicentina, Jatei, and Gloria de Dourados. The remaining stakeholders are public entities that carry out their work in local offices of the intermediate cities or from the main one in the region called Campo Grande.

## 4.2.2 Stakeholder Consultation and Ongoing Communication

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Ongoing consultation</b>	<p>The project's relationship with stakeholders involves open and ongoing communication. Both environmental and productive sector entities, as well as the farm owners who are part of the project, can communicate with Brascarbon, the Project Proponent (PP), to request, receive, or provide information related to the project's execution. This includes the submission of records, statements, and certifications required for the corresponding monitoring periods.</p>
<b>Date(s) of stakeholder consultation</b>	<p>In 2020, Brascarbon sent an invitation to all the stakeholders mentioned in section 2.2 of version 01 of the PD/1/, which is also referenced in the current verification MR /2/. The invitation letter was sent via email (the PP attaches a copy of it in the MR/2/, but it is also referenced in the PD-MR/1/ and in the present report), and this communication was delivered on May 12, 2020. Additionally, the PP indicates that Brascarbon met individually with the local producer to address their concerns, as well as the commitments of each project site, and to sign the contract, which was also presented to the VVB.</p> <p>Communication with stakeholders is ongoing and open channel, so the online comment consultation with stakeholders is available for any comments from each of them. Similarly, an open channel was established with local entities; both spaces are available for use by interested parties.</p>
<b>Communication of monitored results</b>	<p>Brascarbon has not received any comments from stakeholders to date, nor during the entire period when the project was under public consultation on the Verra website (public consultation from 03/05/2023 to 02/06/2023). This indicates that local activities with project members who own the farms where the biodigesters were installed have been addressed by the PP's operational team for specific issues that are quickly resolved. This is because everything is directly coordinated, and the response, especially regarding the installation of the biodigester and the monitoring system, is coordinated with the farm owner or administrator.</p>
<b>Consultation records</b>	<p>During the validation visit conducted by Icontec, and through interviews with the team and a review of the POPs currently used by the PP, it was confirmed that there have been no formal complaints from the project stakeholders. Nonetheless, Brascarbon outlines in POP 25 /56/ that any concerns are addressed promptly through three key steps:</p> <ul style="list-style-type: none"> <li>-Real-time access to email and phone (both forms of contact).</li> <li>-Analysis and resolution of inquiries within 5 business days.</li> <li>-As a feedback method, if no response is received, a follow-up is conducted within one month after the initial response.</li> </ul> <p>Overall, there is ongoing communication among the director, site owners, project manager, and the technical operational field team to</p>

	<p>ensure that any concerns are communicated directly and resolved immediately.</p> <p>It was also confirmed that the technical field team conducts monitoring every 15 days or monthly at each project site, facilitating direct communication to address any issues among the parties.</p>
<b>Stakeholder input</b>	<p>The PP did not receive any comments from the. stakeholders. The producers have made comments, especially regarding the biodigester location in order to better assist the flow and therefore the supply of the biodigester, which were attended by Brascarbon.</p>

### 4.2.3 Free, Prior, and Informed Consent

<b>Item</b>	<b>Evidence gathering activities, evidence checked, and assessment conclusion</b>
<b>Consent</b>	<p>All the project sites are within private properties with already existing economical and commercial activities so, in order to develop the project activity in all the sites above mentioned, all project sites were dully accommodated in a commodity contract with the property owners for full access to develop maintenance and/or monitoring services PD-MR/1/and VVR/53/.</p>
<b>Outcome of FPIC discussion</b>	<p>As previously mentioned, each farm included in the project activity was subject to an individual contract, with a duration for the entire crediting period. Additionally, since the project is developed in an existing operation, it did not encroach on land, relocate people without consent, and did not cause forced physical or economic displacement.</p>

### 4.2.4 Grievance Redress Procedure

<b>Item</b>	<b>Evidence gathering activities, evidence checked, and assessment conclusion</b>
<b>Grievance received and steps taken to resolve the grievance including the outcomes of the resolution</b>	<p>Not applicable. The Project has not received any grievances during its implementation; however, the Project Proponent has established a procedure for timely response to any operational situation requiring action. Communication is fluid, as mentioned earlier, and action is immediate. This has been confirmed by the Verification and Validation Body during the previous validation and verification through received communications, conducted interviews, and observation of field activities. During the current verification period, no grievances or complaints have been filed by stakeholders.</p>
<b>Grievance redress procedure</b>	<p>Not applicable because no complaints are presented, and the work with stakeholders is based on ongoing communication.</p>

#### 4.2.5 Public Comments

Comments received	Actions taken by the project proponent	Evidence gathering activities, evidence checked, and assessment conclusion
No comments received	Not applicable. In this case, since no comments were received during the monitoring period, no actions were taken, and no updates were made to the project design.	Not Applicable

#### 4.2.6 Risks to Local Stakeholders and the Environment

##### 4.2.6.1 Management Experience

The management experience of the project by Brascarbon has been identified by ICONTEC through interviews and communication via various means (phone, chat, interviews) with the people in charge of the company for each activity to be developed, secondary information supports, and based on the visit conducted during the first stage of validation and verification of the project in 2023. Additionally, by conducting comparative verification of information management between the first monitoring period and the current second monitoring period, considering the fieldwork and notes made by operational technicians as well as the review of analyses conducted by the project manager.

The verified evidence allows determining for this second monitoring period that the project development has been in accordance with the proposed PD. The stakeholders are aware of the importance of the project and the responsible handling of information by both the stakeholders and BRC (PP) is identified, enabling effective and practical confrontation by ICONTEC (VVB). There is a commitment from each actor of the project to synchronized work and continuous improvement. Management aspects are continuously worked on thanks to the effective communication of the project team, which helps reduce the occurrence of risks in environmental management issues.

##### 4.2.6.2 Risk Assessment

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Natural and human induced risks to stakeholders' wellbeing</b>	No evidence of risks has been found. Although human activities can cause errors, since the installation of the project at the farm site, the best location and practices have been identified to safeguard the wellbeing of the stakeholders. Additionally, there is no need for traffic of people and animals at the project site; physical control (separation of the area and clear identification) and the agreed-upon conditions manage any potential risks.

<b>Risks to stakeholder participation</b>	No risk identified - the main reason being the direct and ongoing communication between the Project Proponent and both internal and external stakeholders of the Project.
<b>Working conditions</b>	No risk identified - This type of project requires a technical team with experience and practice that has been consolidated over the years. The tasks assigned to each employee are clear and precise, and the director maintains a leadership but also a teamwork relationship that allows him to identify and be attentive to any difficulty or disagreement in working conditions. Additionally, the company's internal policies ensure compliance with applicable labor standards. In general, it has been concluded that the working conditions meet the requirements of the VCS standard and no significant risks to the health and safety of workers have been identified. The employees have regular training according with the POP 11.
<b>Safety of women and girls</b>	Not applicable - Regarding the Project, women's participation does not currently apply. Both on the farm and in the project, the personnel have always been men.
<b>Safety of minority and marginalized groups, including children</b>	All personnel involved in the project, including those working on the farms and within the project team, are adults, and there are no minority or marginalized groups, including children, engaged in project activities. Therefore, the safety of such groups is not applicable in this context.
<b>Pollutants (air, noise, discharges to water, generation and release of hazardous materials and chemical pesticides and fertilizers)</b>	No risk identified - The project is implemented precisely as an opportunity to reduce pollution, with the reduction of methane emissions, and pollutants discharged or emitted are avoided by the project activity. In fact, it even improves the environmental conditions of the site, contributing to sustainability. Precisely, for example, one of the practices that the project proponent requests from the farm owner involved in the project is the responsible application of medications to animals, and only when necessary. Additionally, all reasonable and safe measures must be taken to ensure their wellbeing on the farm, including not applying even biodegradable disinfectants, and the rational use of water. This way, when animal waste reaches the biodigester, it can perform its anaerobic function normally, allowing the system to operate as expected. Likewise, the system's process effectively degrades and cleans the resulting liquid.

## 4.2.7 Respect for Human Rights and Equity

### 4.2.7.1 Labor and Work

<b>Item</b>	<b>Evidence gathering activities, evidence checked, and assessment conclusion</b>
<b>Discrimination</b>	Brascarbon has 3 employees, in addition to the director (2 Regional Technicians and 1 Carbon Manager), the company complies with

	Brazilian law 8, no complaints, related to discrimination have been observed by the audit team.
<b>Sexual harassment</b>	the company complies with Brazilian law, no complaints, related to sexual harassment have been observed by the audit team.
<b>Gender equity in labor and work</b>	Due to the size of the company and operational needs, it has required a small technical team, and it does not currently have any women on staff. However, Brascarbon provides equal job opportunities and does not discriminate based on gender, nor is gender disparity an issue for the company.
<b>Forced labor</b>	Icontec has not identified any instances of crimes such as forced labor in the implementation of the project. The activities carried out in the field at each site that is part of the project have been performed by qualified technical personnel, and there is no evidence of employment practices that do not comply with the country's labor laws. There is also no knowledge of any complaints related to this issue.
<b>Child labor</b>	Otherwise, Icontec confirms that no instances of child labor have been identified. In fact, farms prohibit the entry of unauthorized personnel, and no children were found during previous visits. The project complies with Brazilian labor regulations, which consider child labor a crime. The company respects this law, and the farms that are part of the project have a high level of restriction on the entry of outsiders, and the presence of children on the premises is strictly prohibited. <sup>9</sup>
<b>Human trafficking</b>	During the time that Icontec has carried out its validation and verification activities in Brascarbon's projects, no instances of crimes such as human trafficking have been identified. There is also no knowledge of any complaints related to this issue in the current project. Brascarbon's principles do not allow for participation in such practices.

#### 4.2.7.2 Human Rights

<b>Risks identified</b>	<b>Evidence gathering activities, evidence checked, and assessment conclusion</b>
No risk identified	<p>According the PP/2/: “the project activity is developed within private properties with other pre-existing activity (in this case, swine production). The project activity boundary in within these private properties hence fully respecting and promoting the protection of the rights of IPs, LCs, and customary rights holders in line with applicable international human rights law, and the United Nations Declaration on the Rights of Indigenous Peoples and ILO Convention 169 on Indigenous and Tribal Peoples”.</p> <p>ICONTEC confirms what BRASCARBON stated in their monitoring report. During the visit conducted in 2023 for validation and verification, the project activities observed in the territory were found to be developed within a private company framework. This ensures a high level of responsibility and adherence to both national and international human rights standards.</p>

<sup>8</sup> In Brazil, the law addressing workplace harassment is Federal Law No. 13,467/2017, known as the Labor Reform. This law defines workplace harassment as any abusive conduct aimed at destabilizing, humiliating, intimidating, or discriminating against a worker in the performance of their job. Additionally, it mandates that companies must adopt measures to prevent and penalize workplace harassment in the workplace.

<sup>9</sup> <https://www.humanium.org/es/brasil/>

#### 4.2.7.3 Indigenous Peoples and Cultural Heritage

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
No risk identified	This section aligns with the statements made in item 4.2.7.2 regarding human rights. Icontec confirms BRASCARBON's claims in their monitoring report. The project's activities were observed within a private company framework, ensuring a high level of responsibility and adherence to both national and international human rights standards, including the protection of Indigenous Peoples and their cultural heritage.

#### 4.2.7.4 Property Rights

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
Disputes over rights to territories and resources	This situation does not apply, as the Project sites are implemented on privately-owned lands of each farm owner, and a lease agreement has been established with each of them for exclusive access to the project area for measurements and maintenance practices required at each site.
Respect for property rights	There are no issues regarding property rights. The PP defined two types of contracts: one related to compensation for emissions reduction and the other for the lease agreement for the installation of the biodigester and equipment. All contracts are duly supported, valid, and clear in their commitments, rights, and agreements between the parties /50/.

#### 4.2.7.5 Benefit Sharing

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Summary of the benefit sharing plan	The project proponent (PP) has, according to the contract, the commitment to allocate 10% of all gross profits from the commercialization of carbon units to each project site owner involved in the project activity, during the project's validity period. /50/.
Benefit sharing during the monitoring period	The clause 8 <sup>a</sup> of the contract between the PP and the project site owners, related to the payment of CERs, states: "The parties establish that during the validity of this instrument, the CONTRACTOR must pay the CONTRACTING PARTY the amount corresponding to 10% (ten percent) of the net price obtained from the sale of each unit of paid CERs as remuneration for the license and exclusivity granted to the CONTRACTOR." This means that each owner has a direct benefit, and also improves the

	water treatment system, consequently enhancing the renewal of the environmental license.
--	--

#### 4.2.8 Ecosystem Health

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Impacts on biodiversity and ecosystems	No risks have been identified. Brascarbon develops the project in areas of minimal intervention, utilizing a closed-loop livestock production system that ensures no negative impacts on biodiversity and local ecosystem management. This type of project is carried out in confined areas within farm properties, which ensures the efficient and effective combustion of gas for the project.
Soil degradation and soil erosion	According to Brascarbon /2/, no risks have been identified. Brascarbon projects are developed in confined areas within pig farm properties, where there is no soil degradation or erosion; in fact, these issues are actively prevented by the project activities.
Water consumption and stress	No risks have been identified; the project does not consume any water, which means it does not create stress on ecosystem health.

##### 4.2.8.1 Rare, Threatened, and Endangered species

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Species or habitat	All swine producers in the state of Mato Grosso do Sul are required, by the State Environmental Agency (IMASUL), to have operating licenses in order to continue their activities. The project holds an environmental operating license at each site, which indicates permission from the environmental authority of the state of Mato Grosso. This license has been identified and reviewed in the V&VR report. It ensures compliance with current environmental regulations according to the project's activity.

<b>Areas needed for habitat connectivity</b>	The purpose of the project is precisely to avoid generating a negative environmental impact; during the monitoring period, the project does not impact areas needed for natural habitat connectivity and therefore does not affect the population of native and introduced species. The area designated in each farm for the development of the project is located near the pig production facilities. Therefore, these are areas with minimal vegetation, and m <sup>2</sup> of operational space for the project. These areas have already been intervened and have been authorized for use by the environmental authority.
--	---

<b>Evidence gathering activities, evidence checked, and assessment conclusion</b>	
<b>Habitats for rare, threatened, and endangered species</b>	No risk identified. No risks have been identified for habitats of rare, threatened, and endangered species; mitigation measures are in place.
<b>Areas for habitat connectivity</b>	<p>The PP identified no risk; therefore, areas for habitat connectivity do not apply. Icontec, upon reviewing the territory and the information provided by the state's environmental authority - IMASUL - regarding "Areas for Habitat Connectivity" in Semadesc<sup>10</sup> finds that:</p> <p>The area where the project sites are located is strategically distributed, so they do not interfere with habitat connectivity. The environmental authority indicates that "Livestock farming, especially pig farming, occupies regions with the most friable soils... and this mosaic of areas with medium resilience is also favored by local landscapes with high resilience that permeate the zone, denoting good conditions for environmental restoration actions aimed at promoting better functional connectivity of landscapes, serving to establish biodiversity corridors..."</p> <p>This confirms that pig farming projects, and especially those linked to non-negative impact projects, do not negatively affect the territory and are not representative of this type of environmental restoration strategy. The study unit corresponds to another type of productive system, which positively indicates that it will favor the increase of habitat connectivity areas in the future.</p>

#### 4.2.8.2 Introduction of Species

<b>Species introduced</b>	<b>Evidence gathering activities, evidence checked, and assessment conclusion</b>
No species introduced	Each site comprising the Project is physically delimited, with strict access control to the farm's production area, and restricted access to the measurement and operation area designated for the project.

<sup>10</sup> <http://www.semadesc.ms.gov.br/wp-content/uploads/2018/04/Consolidação-ZEE-2ª-Aproximação.pdf>

The production cycles are closed (all-in all-out system), and the project area is constantly monitored, allowing for the detection of any abnormal situations. The sites do not allow introduced species, and the presence of any foreign species, would negatively impact the productive, sanitary, epidemiological, and environmental development of the farms and, consequently, the sites belonging to the project.

Existing invasive species	Evidence gathering activities, evidence checked, and assessment conclusion
No existing invasive species	Each site comprising the Project is physically delimited, preventing access to the production area of the farms, and in the measurement and operation area of the project, there are no invasive species. As mentioned in the previous point related to introduced species, the system is closed and monitored; invasive species would affect the productive, sanitary, epidemiological, and environmental development of the farms.

Evidence gathering activities, evidence checked, and assessment conclusion	
Invasive species	Not applicable. The PP identified no risk of invasive species.

#### 4.2.8.3 Ecosystem conversion

Item	Evidence gathering activities and evidence checked
Ecosystem conversion	The georeferencing, satellite images, and photographs per site compared with the photographic record obtained directly by the VVB show that no land clearances or drainage occurred during the monitoring period, confirming that the conditions presented in the PD-MR/1/, VVR/53/, and in the MR of the current verification period are maintained <sup>11</sup> .

### 4.3 Accuracy of Reduction and Removal Calculations

Based on the methodology and criteria used as indicated in item 2.1 of this verification report (see section 2.1), the updated version of the VCS standard, the United Nations methodology AMS III.D version 21.0, along with its corresponding tools, as well as the current ISO regulations for this type of projects, were used. The equations and parameters allowed for the Project Development were used starting from the baseline analysis.

<sup>11</sup> Brascarbon projects are developed in confined areas, within swine farm properties/ 2/SECTION 2.4.3

The Project Plan (PP), as expressed in the Monitoring and Reporting Project Document (PD-MR/1) and in the MR/2, as well as described in the VVR/53/:

Baseline emissions (Bey) are calculated by using one of the following two options/3/page 6:

(a) Using the amount of the waste or raw material that would decay anaerobically in the absence of the project activity, with the most recent IPCC tier 2 approach (please refer to the chapter 'Emissions from Livestock and Manure Management' under the volume 'Agriculture, Forestry and other Land use – volume 4,Chapter10') which is described in both the 2006 IPPCC Guidelines and 2019 Refinement IPCC Guidelines for National Greenhouse Gas Inventories/45/. For this calculation, information about the characteristics of the manure and of the management systems in the baseline is required. Manure characteristics include the amount of volatile solids (VS) produced by the livestock and the maximum amount of methane that can be potentially produced from that manure (Bo);

(b) Using the amount of manure that would decay anaerobically in the absence of the project activity based on direct measurement of the quantity of manure treated together with its specific volatile solids (SVS) content.

Option a) was chosen.

- E.1. Calculation of baseline emissions or baseline net removals:

The equation 1 (Methodology AMS-III.Dv.21): By Baseline emissions in year y (t CO<sub>2</sub>e):

$$BE_y = GWP_{CH4} \times D_{CH4} \times UF_b \times \sum_{j,LT} MCF_j \times B_{0,LT} \times N_{LT,y} \times VS_{LT,y} \times MS\%_{BL,j}$$

Where:

- $BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>e)
- $GWP_{CH4}$  = Global Warming Potential (GWP) of CH<sub>4</sub> applicable to the crediting period (28) (t CO<sub>2</sub>e/t CH<sub>4</sub>)
- $D_{CH4}$  = CH<sub>4</sub> density (0.00067 t/m<sup>3</sup> at room temperature (20 °C) and 1 atm pressure)
- $LT$  = Index for all types of livestock
- $j$  = Index for animal manure management system
- $MCF_j$  = Annual methane conversion factor (MCF) for the baseline animal manure management system j
- $B_{0,LT}$  = Maximum methane producing potential of the volatile solid generated for animal type LT (m<sup>3</sup> CH<sub>4</sub>/kg-dm)
- $N_{LT,y}$  = Annual average number of animals of type LT in year y (numbers)
- $VS_{LT,y}$  = Volatile solids production/excretion per animal of livestock LT in year y (on a dry matter weight basis, kg-dm/animal/year)
- $MS\%_{BL,j}$  = Fraction of manure handled in baseline animal manure management
- $UF_b$  = Model correction factor to account for model uncertainties (0.94)

Uncertainties associated with the calculation of emissions:

The parameter  $U-Fb$  – a model correction factor to account for model uncertainties (value: 0.94) (FCCC/SBSTA/2003/10/Add.2,page25: <https://unfccc.int/resource/docs/2003/sbsta/10a02.pdf>. Is a parameter applied by the PP to determinate the Baseline equations.

The calculations of baseline GHG emissions have been carried out in accordance with the formulae and methods described in the PD-MR /1/ and the applied methodology. Appropriate use  $UFb$  parameter the formulae applied in the MR/2/ and the ER/2/ calculation were correctly justified.

Described by PP in its PD-MR version 4/1/ the methodology refers that the “Volatile solids (VS) are the organic material in livestock manure and consist of both biodegradable and non-biodegradable fractions. For the calculations the total VS excreted by each animal species is required. The preferred method to obtain VS is to use data from nationally published sources. These values shall be compared with IPCC default values and any significant differences shall be explained. If data from nationally published sources are not available, country-specific VS excretion rates can be estimated from feed intake levels, via the enhanced characterisation method (tier 2) described in section 10.2 in from 2019 Refinement 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 chapter 10. If country specific VS values are not available IPCC default values from 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4, chapter 10 table 10 A-4 to 10 A-9 can be used provided that the project participants assess the suitability of those data to the specific situation of the treatment site particularly with reference to feed intake levels”/45/.

Brazil does not have any national published values nor sources to obtain the default values need. Hence, the VS values chosen for the current project were the from 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories 4, chapter 10 table 10 A-7 for the Region Western Europe since they have proven to be the more suitable for the specific situation of the treatment site particularly with reference to feed intake levels/45/.

The genetics used in the project are originally from that region and the values presented are the more similar when compared with the specific project site values. The same situation occurs with the feed intake level, which is than reflected in the specific animal weight, being the IPCC values for Western Europe swine the more adjusted and suited to the project sites.

Therefore, the parameter  $VSLI_{,y}$  will be calculated according with the following methodology consideration “In case default IPCC values for VS are adjusted for a site-specific average animal weight, it shall be well explained and documented.”.

Where:

(Equation 3 – Methodology AMS III.D v21.0)/3/

$$VS_{LT,y} = \left( \frac{W_{site}}{W_{default}} \right) * VS_{default} * nd_y$$

Where:

- Wsite Average animal weight of a defined livestock population at the project site (kg)
- Wdefault Default average animal weight of a defined population, this data is sourced from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (kg)<sup>12</sup>/45/
- VSdefault Default value for the volatile solid excretion rate per day on a dry-matter basis for a defined livestock population (kg dm/animal/day)
- ndy Number of days in year “y” where the treatment plant was operational.

According to paragraph 17 (d) from AMS-III.D version 21.0, B0 or VS values applicable to developed countries can be used provided the following four conditions are satisfied:

The genetic source of the livestock originates from an Annex I Party;

For this project, the genetics and nutrition adopted for these farms as so as in western Europe. More details or information of the genetics can be obtained at the producers or at the Associação Brasileira dos Criadores de Suínos (Brazilian Swine Association) – <http://www.abcs.org.br/> and also at ASSUGLORIA (Cooperativa de Gloria de Dourados). The audit team confirmed on-site the type of animals being used and received pig inventory records, genetic, diet and feeding certificates for all the farms that are part of the project. /1/2/3/17/22/25/.

The data used for the baseline emission reduction calculation is the product of the monitoring activities and the meters readings. All the data were issued by automatically systems and crosschecked by the lead auditor with the row data collected by the Regional Technician.

Quantification of project emissions:

According to the simplified baseline and monitoring methodology (AMS.III.D – version 21.0), project emissions consist of:

- (a) Physical leakage of biogas in the manure management systems which includes production, collection and transport of biogas to the point of flaring/combustion or gainful use (PEPL,y);
- (b) Emissions from flaring or combustion of the gas stream (PEflare,y);
- (c) CO<sub>2</sub> emissions from use of fossil fuels or electricity for the operation of all the installed facilities (PEpower,y).

---

<sup>12</sup> As explained by the PP in the MR/2/, the project activity uses the default values from the 2006 IPCC Guidelines and not from the 2019 Refinement, as the default values in the latter provide less conservative results, as a result of the detailed analysis of the 2019 Refinement for the different parameters..

(d) CO<sub>2</sub> emissions from incremental transportation distances ( $PE_{transp,y}$ )

(e) Emissions from the storage of manure before being fed into the anaerobic digester ( $PE_{storage,y}$ )

Equation 5 (equation 6 of the meth/3/):

The formula used for the calculations of the project emissions is consistent with the registered PD-MR /1/. According to applicable methodology /3/, PE calculations require the use of this equation number (5) as follows:

$$PE_y = PE_{PL,y} + PE_{flare,y} + PE_{power,y} + PE_{transp,y} + PE_{storage,y}$$

Where:

- $PE_y$  – Project Emissions in year “y” (tCO<sub>2e</sub>)
- $PE_{PL,y}$  – Emissions due to physical leakage of biogas in year “y” (tCO<sub>2e</sub>)
- $PE_{flare,y}$  – Emissions from flaring or combustion of the biogas stream in the year “y” (tCO<sub>2e</sub>)
- $PE_{power,y}$  – Emissions from the use of fossil fuel or electricity for the operation of the installed facilities in the year “y” (tCO<sub>2e</sub>)

Nevertheless, there are no emissions due to use of fossil fuels or electricity. ICONTEC confirmed that no electricity was consumed from the grid since the monitoring equipment present in each project site is powered by photovoltaic cells. And the energy generated is stored in 12 volts batteries. The treated effluent is discharged in open lagoons by gravity and the flare operates with biogas at atmospheric pressure. No pump or blower was used, and no fossil fuel was used.

$PE_{transp,y}$  – Emissions from incremental transportation in the year y (tCO<sub>2e</sub>), as per relevant paragraph in AMS-III.O

ICONTEC confirmed that there is not transportation and therefore no emissions related.

$PE_{storage,y}$  – Emissions from the storage of the manure in the year “y” (tCO<sub>2e</sub>)

ICONTEC confirmed that there is no manure storage and therefore no emissions related. The audit team assessed the operational conditions of the proposed project activity and concluded the management of manure does not include storage or transport of the effluent s of swine production operations.

Equation 6 (equation 7 of the meth)/3/ missions due to physical leakage of biogas can be determinate as follows:

$$PE_{PL,y} = 0.10 \times GWP_{CH_4} \times D_{CH_4} \times \sum_{i,LT} B_{0,LT} \times N_{LT,y} \times VS_{LT,y} \times MS\%_{i,y}$$

Where:

- $PE_{PL,y}$  – Emissions due to physical leakage of biogas in year “y” (tCO<sub>2e</sub>)
- $GWP_{CH_4}$  – Global Warming Potential (GWP) of CH<sub>4</sub> (28)
- $D_{CH_4}$  – CH<sub>4</sub> density (0.00067 t/m<sup>3</sup> at room temperature (20 °C) and 1 atm pressure).
- LT – Index for all types of livestock
- J – Index for animal waste management system
- $B_{0,LT}$  – Maximum methane producing potential of the volatile solid generated for animal type “LT” (m<sup>3</sup> CH<sub>4</sub>/kg dm)
- $N_{LT,y}$  – Annual average number of animals of type “LT” in year “y” (numbers)
- $VS_{LT,y}$  – Volatile solids for livestock “LT” entering the animal manure management system in year “y” (on a dry matter weight basis, kg dm/animal/year)
- $MS\%_{i,y}$  – Fraction of manure handled in system “i” in year “y”

Emissions from flaring determinate as follows/4/:

According with the tool Project emissions from flaring version 4 /4/, the calculation procedure in this tool determines the project emissions from flaring the residual gas ( $PE_{flare,y}$ ) based on the flare efficiency ( $\eta_{flare,m}$ ) and the mass flow of methane to the flare ( $F_{CH_4,RG,m}$ ). The flare efficiency is determined for each minute m of year y based either on monitored data or default values.

The project emissions calculation procedure is given in the following steps:

STEP 1: Determination of the methane mass flow of the residual gas;

STEP 2: Determination of the flare efficiency;

STEP 3: Calculation of project emissions from flaring.

Step 1: Determination of the methane mass flow in the residual gas

The “Tool to determine the mass flow of a greenhouse gas in a gaseous stream” shall be used to determine the following parameters

The following requirements apply:

- (a) The gaseous stream tool will be applied to the residual gas;
- (b) The flow of the gaseous stream will be measured continuously;
- (c) CH<sub>4</sub> is the greenhouse gas i for which the mass flow will be determined;

(d) The simplification offered for calculating the molecular mass of the gaseous stream is valid (equations 3 and 17 in the tool);

(e) The time interval  $t$  for which mass flow should be averaged is every minute  $m$ .

According with the “Tool to determine the mass flow of a greenhouse gas in a gaseous stream” version 03, The mass flow of a greenhouse gas  $i$  in a gaseous stream ( $F_i, t$ ) is determined through measurement of the flow and volumetric fraction of the gaseous stream.

Option A was chosen:

The flow measurement on a dry basis is not doable for a wet gaseous stream. Therefore, it is necessary to demonstrate that the gaseous stream is dry to use this option. According with the tool, there are two ways to do this:

(a) Measure the moisture content of the gaseous stream ( $CH_2O, t, db, n$ ) and demonstrate that this is less or equal to  $0.05 \text{ kg H}_2\text{O}/\text{m}^3 \text{ dry gas}$ ; or

(b) Demonstrate that the temperature of the gaseous stream ( $T_t$ ) is less than  $60^\circ\text{C}$  ( $333.15 \text{ K}$ ) at the flow measurement point.

(c) The temperature of the biogas is less than  $60^\circ\text{C}$ , and that will be demonstrated during the monitoring of the parameter, according with the MP.

#### Step 2: Determination of flare efficiency

The flare efficiency depends on the combustion efficiency of in the flare and the time that the flare is operating. For determining the efficiency of enclosed flares project participants shall choose to determine the efficiency based on monitored data or the option to apply a default value. For open flares a default value must be applied. The time the flare is operating is determined by using a flame detector and, for the case of enclosed flares, in addition the monitoring requirements provided by the manufacturer’s specifications for operating conditions shall be met.

In the case of enclosed flares, project participants may choose between the following two options to determine the flare efficiency for minute  $m$  ( $\eta_{\text{flare}, m}$ ) and shall document in the CDM-PD which option is selected:

(a) Option A: Apply a default value for flare efficiency;

(b) Option B: Measure the flare efficiency.

Option A was chosen

Option A: Default value

The flare efficiency for the minute  $m$  ( $\eta_{\text{flare},m}$ ) is 90% when the following two conditions are met to demonstrate that the flare is operating:

- (a) The temperature of the flare ( $TEG,m$ ) and the flow rate of the residual gas to the flare ( $FRG,m$ ) is within the manufacturer’s specification for the flare ( $SPEC_{\text{flare}}$ ) in minute  $m$ ; and
- (b) The flame is detected in minute  $m$  ( $Flamem$ ).

Otherwise  $\eta_{\text{flare},m}$  is 0%.

It is important to highlight that the flares are considered a low height so, in line with the tool, a conservative approach should be applied, and 10 percentile points should be subtracted to the flare efficiency. Hence the flare efficiency adopted in the current PD will be the default value of 80%.

In line with the monitoring plan, if any minute of any hour presents a temperature value below 500°C the entire hour will be discount form the ER calculation. This discount will be applied to the volume of that specific hour since it is a more conservative approach than to discount in the average of the flare efficiency percentage.

Step 3: Calculation of project emissions from flaring

Project emissions from flaring are calculated as the sum of emissions for each minute  $m$  in year  $y$ , based on the methane mass flow in the residual gas ( $F_{CH4,RG,m}$ ) and the flare efficiency ( $\eta_{\text{flare},m}$ ), as follows:

Equation 7 (equation 15 of the Tool 6)

$$PE_{\text{flare},y} = GWP_{CH4} \times \sum_{m=1}^{525600} F_{CH4,RG,m} \times (1 - \eta_{\text{flare},m}) \times 10^{-3}$$

Where:

- $PE_{\text{flare},y}$  – Project emissions from flaring of the residual gas stream in year  $y$ , tCO<sub>2</sub>e
- $GWP_{CH4}$  – Global Warming Potential of methane valid for the commitment period,
- $tCO_2e/t_{CH4} F_{CH4,RG,m}$  – Mass flow rate of methane in the residual gas in the minute  $m$ , kg/m
- $\eta_{\text{flare}, m}$  – Flare efficiency in the minute  $m$

Quantification of leakage:

According to the simplified baseline and monitoring methodology–AMS-III.D - version 21/3/ and the tool “Project and leakage emissions from anaerobic digesters” (version 02) /19/, no leakage

calculation is required if the storage of digestate or the composting of digestate is occurring within the project boundary, these emissions will be considered as project emissions, (in line with paragraph 25 of the tool).

ICONTEC confirms that no leakage needs to be considered. The verification on-site of the operation features of the project allow the audit team to assure no neither storage nor composting takes place in the proposed project activity.

Summary of net GHG emission reductions or removals:

The verification team assessed the whole set of data and calculations of GHG emission reductions /2/ resulting from the project activity by the application of selected methodology, formulae and default values applied both for the claimed and unclaimed period monitored.

According to PD-MR /1/ the last version, the estimated annual GHG emission reductions/removals of the project are 405,510 tCO<sub>2</sub>e for the first crediting period (7 years) from 05/01/2022 to 04/01/2029, resulting in estimated annual average GHG emission reductions of 57,930 tCO<sub>2</sub>e. These figures were calculated using the methodology AMS-III.D v.21/3/ and the applicable tools /4/.

- Emission Reductions:

Methodology AMS III.D v21.0)/3/

The emission reductions which will be achieved by the project activity ex post will be determined through direct measurement of the amount of methane flared. The emission reductions achieved in any year will be the lowest value of the following:

Equation 10 Methodology AMS III.D v21.0)/3/:

$$ER_{y,ex-post} = \min[(BE_{y,ex-post} - PE_{y,ex-post}), (MD_y - PE_{power,y,ex-post})]$$

Where:

- ER<sub>y,ex-post</sub> – Emission reductions achieved by the project activity based on monitored values for year y (tCO<sub>2</sub>e)
- BE<sub>y ex post</sub> – Baseline emissions calculated using equation 1 (for projects using option in paragraph 17(a) and using ex post monitored values of NLT<sub>y</sub> and if applicable VSLT<sub>y</sub> for year y (tCO<sub>2</sub>e). For projects using option in paragraph 17(b), the ex post monitored values for Q<sub>manure,j,LT,y</sub> and SVS<sub>j,LT,y</sub> are used.
- PE<sub>y,ex post</sub> – Project emissions calculated using Equation 5 (equation 6 of the meth) using ex post monitored values of NLT<sub>y</sub>, MS<sub>i,y</sub> and if applicable VSLT<sub>y</sub> for year y (tCO<sub>2</sub>e)

- MD<sub>y</sub> – Methane captured and destroyed or used gainfully by the project activity in year y (tCO<sub>2</sub>e)
- PE<sub>power,y,ex post</sub> – Emissions from the use of fossil fuel or electricity for the operation of the installed facilities based on monitored values in the year y (tCO<sub>2</sub>e)

It was verified that, monitoring procedures as well as collected data represent the actual emission reductions of the Project Activity. It was also verified the emissions calculations file /2/ in order to detect material mistakes or mistakes on calculation procedures; the audit team identified those emission reductions not claimed follow the very same methodological requirements as the claimed emission reductions.

As a general crosscheck of the data, ICONTEC verified the backup system of the company and cross checked the information of the ERs spread sheet /2/ with the backup files, which include the raw data information generated by the PLC system. The information is reported by the system through .xls files containing all information in the adequate measurement frequencies.

The emission reductions which will be achieved by the project activity ex post will be determined through direct measurement of the amount of methane flared. Biogas flared or combusted, (MD<sub>y</sub>) shall be determined using the flare efficiency and methane content of biogas.

According to Equation 11 Methodology AMS III.D v21.0)/3/:

$$MD_y = BG_{burnt,y} \times w_{CH_4,y} \times D_{CH_4} \times FE \times GWP_{CH_4}$$

Where:

- $BG_{burnt,y}$  = Biogas flared or combusted in year y (m<sup>3</sup>)
- $w_{CH_4,y}$  = Methane content in biogas in the year y (volume fraction)
- $FE$  = Flare efficiency in the year y (fraction)

The Methane captured and destroyed (MD<sub>y</sub>) in the current monitoring period: 56,064 MD<sub>y</sub> (t CO<sub>2</sub>e).

Documentation used as the basis for assumptions and sources of data:

The ER calculation/2/ has been duly checked. ICONTEC has further verified the Joint-PD-MR/1/ against MR/2/ and the latest version of the applicable methodology/3/, as well as the referenced methodological tools /4/19/51/ for consistency.

The validation and verification team assessed whether all data sources and assumptions are appropriate, and if the calculations are correct and applicable to the proposed CDM project activity, resulting in an accurate or conservative estimate of emission reductions. Regarding the data and

parameters that were monitored or estimated during implementation and, as such, the team confirms that the estimates provided in the revised PD-MR /1/ for these data and parameters, cross-referenced with the monitoring/2/ corresponding to the current verification period, are considered reasonable.

The results of applying the equations indicated in methodology AMS-III.D for each of the parameters described in Appendix 5 can be found in the file ER Calculation Spreadsheet BCA-BRA-19-.xls, PD-MR version 03 /1/, MR v.2 – ER v.4 /2/, and VVR/53/.The PP in Figure 3 of PD-MR /1/ and figure 1 of MR v.3/2/present the details of the use of the biodigester at each project site, as well as the path of the effluent and its final destination once biogas burning takes place. Similarly, the PP corrects the description of the item regarding the emissions from the open lagoons, which are not included, and the emissions from flaring /1/53/.

By means of remote inspection and documents review, ICONTEC can ensure that during 2<sup>nd</sup> monitoring period, the project was implemented in accordance with the -MRv.3 /2/.

This verification covers the period from 01-January-2023 to 31-December-2023 (including both days) 52,511 tCO<sub>2e</sub> emission reductions are achieved during this monitoring period.

The main timeline of the project is as below table, which has been confirmed in the MRv.4/2/, monthly production summary table 11/against current verification of ER spreadsheets ER Calculation MR02 - BCA-BRA-19\_v4” in the folder Bey ex-post – PEy ex-post./2/.

#### **Activity - dates of project 4289:**

According to table 1 – PD-MR version 3/1/ and table 1 - Relevant dates of project implementation MRv.3/2/:

Start construction: April to June 2021 (all sites)

Start date: 05/01/2022 -date in which the first farm begun the Stat-up and Tests phase.

Start date of the crediting period – 5<sup>th</sup> of January 2022 / First Monitoring Period

The Second Monitoring Period: the current Monitoring Period from 01/01/2023 to 31/12/2023 (First and last date included).

The audit team conducted a remote review of each project site and found that project /46/, the biodigester system, and the flare, are maintained in good condition, and there is no evidence of events or situations that could affect the use of the applied methodology during this monitoring

period. Based on the site visit and the review of project documentation, it can be confirmed that the technology deployed, the project team, as well as the monitoring and measurement equipment, have been implemented and operated in accordance with the applied monitoring methodology and the monitoring plan described in the Joint-PD-MR/1/ and the current MR /2/, and that the monitoring system is fully functional to generate Verified Carbon Units (VCUs) without any double counting for this monitoring period, from January 1, 2023, to December 31, 2023.

Basic technical details of the project have been provided in the MR /2/ which has been verified during sites visit /46/53/.

There are no relevant deviations from the methodology.

In conclusion, the verification Team was able to confirm that the project implementation is in accordance with the project description contained in the MR v.4 /2/ and ER v.4/2/ and the reductions provided in this project's GHG statement have been quantified correctly in accordance with the monitoring plan and applied methodology.

#### 4.4 Quality of Evidence to Determine Reductions and Removals

During the verification process, the audit team assessed the whole set of monitoring parameters relevant to the proposed project activity (as listed in chapter 6. 6.1 of the PD-MR /1/, and the figures as reported and the information flow management system have been verified with regard to the appropriateness of the applied measurement and equipment, the correctness of the values applied for calculation of GHG emission reductions, the accuracy and applied QA/QC measures.

The monitored parameters described in Appendix 5, and sections 3.4.8/53/, provide detailed assessment of each monitoring parameter, while Appendix 3 contains supporting evidence used to determine the GHG emission reductions. The PD-MR/1/ and MR/2/ in their sections 4 Data and parameters, 5. Quantification of GHG emission reductions and removals also contribute to this assessment. The validation and verification report /53/ describes the application of the methodology AMS-III.D. version 21.0/3/ and the associated tools /4/19/21/52/.

For each reported data, the evidence is provided and verified as sufficient, and quality is appropriate. Also, the cross-checks have been performed on the reported data with different source of evidence. The information flow from data generation and aggregation, to recording, calculation and final transposition into the monitoring report has been assessed by the Audit Team for each parameter and also the calibration have been conducted as per the frequency of monitoring equipment defined in the MRv.4/2/ and ERv.4 /2/.

Energy Source and Solar Panel Usage

The energy source at each project site is based on solar panels, ensuring the sites are self-sufficient and sustainable. Consequently, the energy system is not connected to the electrical grid. This has been confirmed by ICONTEC through both field information gathered during the validation and verification phases /1/ and evidence obtained from data and photographic records /46/47/. The entire system operates using solar power as follows:

#### Flare Control System:

- The flare is enclosed and controlled by a Programmable Logic Controller (PLC).
- The PLC logs the combustion temperature every minute to determine flare efficiency.
- A thermocouple monitors the combustion temperature, ensuring it remains within specifications.
- An automatic sparking system ignites the flare every second.

#### Biogas Flow Control:

The biogas flow rate is also monitored by the PLC, with records taken every minute.

#### Power Supply:

- The entire system is powered by a 12V battery.
- The battery is charged using solar panels, providing all the necessary energy for the project.

Icontec confirms that the PP uses field data collection forms that are fundamental for obtaining primary information at the time of project implementation at each site. These forms are referenced throughout the MR and VR. Specifically, Format 03 is related to inventory and the ANIMAIS control system /17/, along with the data table that records the flame temperature second by second /15/ for each project site. Additionally, “the monitoramento -coleta de dados em campo” /18/ form is among the key tools used.

The above is also highlighted when discussing the ex-ante and ex-post parameters in Appendix 5 of this verification report.

Similarly, the PP conducts internal controls to ensure the proper functioning of the equipment and the appropriate performance of all indicators within the project. This is achieved through periodic reviews with internal audits, which have been described throughout this report and are also supported by procedure POP 26 Internal Audits /57/. Therefore, it is concluded that the evidence verified is ample and sufficient and thus the evidence can be used to determine the GHG reductions and removals for this monitoring period.

## 4.5 Non-Permanence Risk Analysis

Not Applicable

# 5 VERIFICATION OPINION

## 5.1 Verification Summary

The Project Description: Brascarbon Consultoria, Projetos e Representação Ltda commissioned ICONTEC International to perform the verification assessment of the second monitoring period (01/01/2023 to 31/12/2023 - first and last days included) of the proposed project activity "BRASCARBON Methane Recovery Project BCA-BRA-19, Brazil (Reference Number VCS: 4289). The project is located in Mato Grosso do Sul Brazil, with 10 sites, and is not a grouped project.

Verification Scope: Based on the scope of the VCS Program, which includes UNFCCC criteria contained in Article 12 of the Kyoto Protocol, the approved CDM methodology AMS-III.D. "Methane recovery in animal manure management systems" (version 21.0) is applied to quantify the GHG removals achieved in this project.

Verification Findings: During the verification process, 1 Corrective Action Requests (CARs) and 6 Clarification Requests (CLs) were raised and successfully closed. The assessment is included in the report.

For the Development of the Verification, constant communication was carried out with the PP (Project Proponent), in addition to the reception and analysis of the supporting documents. Consolidated evidence allowed for positive progress in the verification process, leading to corrections and adjustments of the MR (Monitoring Report) document for the current monitoring period.

ICONTEC confirms that the project complies with the verification criteria for projects and their carbon emissions reductions set out in Version 4 of the VCS/10/. This GHG statement is the responsibility of the Brascarbon PP, the project proponent. The project has been implemented according to the project description, its calculations, and has been adjusted based on observations and findings issued by the audit team and technical review. The development of activities, opinions, and analyses for verification by the audit team has been in line with the regulatory conditions applicable to the project, such as ISO/IEC 17029:2019 e ISO 14065:2020 14064-2:2019 and 14064-3:2019.

## 5.2 Verification Conclusion

The audit team carried out a thorough and independent assessment of the implementation, operation and the reported GHG emission reductions of the proposed project activity “BRASCARBON Methane Recovery Project BCA-BRA-19, Brazil (Reference number 4289) as well as the quantitative and qualitative information provided in the. MR version 02 /2/ against the applicable VCS rules and requirements /5 – 10/51/ and the applicable methodological framework /4/ /19/ /21/. The verification process allows the audit team to conclude, the proposed project activity complies with the VCS requirements. The audit team confirms that, verification activities used as a basis for the assessment of the Second monitoring period (from 1 of January 2023 to the 31<sup>st</sup> of December 2023).

**Verification period:** From 01-01-2023 to 31-12-2023

**Verified GHG emission reductions and carbon dioxide removals in the above verification period:**

Vintage period	Baseline emissions (tCO <sub>2e</sub> )	Project emissions (tCO <sub>2e</sub> )	Leakage emissions (tCO <sub>2e</sub> )	Reduction VCU (tCO <sub>2e</sub> )	Removal VCU (tCO <sub>2e</sub> )	Total VCUs (tCO <sub>2e</sub> )
01Jan -2023 to 31-Dec-2023	75,513	23,002	0	52, 511	0	52,511
<b>Total</b>	75,513	23,002	0	52,511	0	52,511

**The project is not required to assess permanence risk.**

Vintage period	Baseline emissions (tCO <sub>2e</sub> )	Project emissions (tCO <sub>2e</sub> )	Leakage emissions (tCO <sub>2e</sub> )	Buffer pool allocation (tCO <sub>2e</sub> )	Reductions VCU (tCO <sub>2e</sub> )	Removals VCU (tCO <sub>2e</sub> )	Total VCU issuance (tCO <sub>2e</sub> )
01Jan - 2023 to 31-Dec-2023	75,513	23,002	0	0	52,511	0	52,511
<b>Total</b>	75,513	23,002	0	0	52511	0	52,511

## 5.3 Ex-ante vs Ex-post ERR Comparison

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-Jan-2023 to 31-Dec-2023	57,930	52,511	-9%	This number of days is secured by the Calculation MR02 - BCA-BRA-19_v4 where the number of hours the project was operation is assessed.
Total	57,930	52,511	-9%	The remarks on the difference have been correctly justified by PP and cross-checked by ICONTEC. The project activity achieved approximately 90.63% of the GHG emission reductions expected to be achieved. Differences are not significant and demonstrate that the baseline scenario was correctly calculated when establishing the ex-ante scenario. Regarding changes in animal inventory, the decrease in the number and weight of animals does not imply relevant changes in the total amount of GHG emission reductions. ICONTEC confirms that the projection made in the PD – MR /1/ was reasonable, and that the pro-rata approach followed by the PP was correctly applied to the calculations of GHG emission reductions.

# APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

Section	Information	Justification	Assessment method and conclusion
N/A	Not Applicable	The Project Proponent (PP) in the monitoring report does not present sensitive commercial information.	N/A

## APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
BRC	Brascarbon - Brascarbon Consultoria, Projetos e Representação Ltda
CAR	Corrective Action Request
CDM	Clean Development Mechanism
Ers	Emission Reductions
CERs	Certified Emission Reductions
CL	Clarification request
CO <sub>2</sub> e	Carbon dioxide equivalent
DOE	Designated Operational Entity
FAR	Forward Action Request
GHG	Green House Gas
ICONTEC	Colombian Institute of Technical Standards and Certification (Instituto Colombiano de Normas Técnicas y Certificación)
IPCC	Intergovernmental Panel on Climate Change
QA/QC	Quality Assurance/ Quality Control
MP	Monitoring Plan
MR	Monitoring Report
PCL	Programmable Logic Control
PD	Project Description
POP	Operational Procedure
PP	Project Participants
PRC	Post Registration Changes
PSO	Project Site owner
GWP <sub>CH4</sub>	Global Warming Potential of Methane
UNFCCC	United Nations Framework Convention on Climate Change
PD-MR	Project Description- Monitoring Report VCS
VVB	Validation/Verification Bodies (VVBs)

# APPENDIX 3: DOCUMENTS REVIEWED OR REFERENCED

ID	Author	Title	References to the document	Provider
1	BRASCARBON	<p>PD-MR Brascarbon Methane Recovery Project BCA-BRA-19_v3</p> <p>Emission Reductions Calculation:</p> <p>CER/ER Calculation</p>	<p>Dated on: 06/12/2023 BCA-BRA-19_v3_tc.pdf BCA-BRA-19_v3_clean.pdf</p> <p>ER Calculation Spreadsheet BCA-BRA-19.xls</p> <p>CER Calculation MRO1 - BCA-BRA-19_v3.xls</p>	PP
2	BRASCARBON	<p>Second verification Monitoring Report MR version 1</p> <p>MR version 2</p> <p>Findings BCA-BRA-19_2506.2024_BC</p> <p>MR version 3</p> <p>MR version 4</p>	<p>Date 20/05/2024</p> <p>VCS MR Project ID 4289 01012023-31122023.pdf CER Calculation MRO2 - BCA-BRA-19.xls</p> <p>Date 26/06/2024 VCS MR Project ID 4289 01012023-31122023_v2.pdf CER Calculation MRO2 - BCA-BRA-19_v2.xls</p> <p>Date 25/06/2024</p> <p>ER Calculation MRO2 - BCA-BRA-19_v3.xls VCS MR Project ID 4289 01012023-31122023_v3 clean.pdf VCS MR Project ID 4289 01012023-31122023_v3 tc.pdf</p> <p>VCS MR Project ID 4289 01012023-31122023_v4 clean.pdf VCS MR Project ID 4289 01012023-31122023_v4 tc.pdf ER Calculation MRO2 - BCA-BRA-19_v4.xls</p> <p>ER Calculation MRO2 - BCA-BRA-19_v4_VS_Scenario 1_table 10_13A.xls VSdefault Scenarios.xlsx</p>	Project Participant -PP
3	UNFCCC	Methodology: Methane recovery in animal manure	<a href="https://cdm.unfccc.int/methodologies/SSCmethodologies/approved">https://cdm.unfccc.int/methodologies/SSCmethodologies/approved</a>	UNFCCC website

ID	Author	Title	References to the document	Provider
		management systems. AMS-III.D, version 21.0 File - EB96_repan09_AMS-III.Dv21.pdf		
4	UNFCCC	Methodological tool (06) "Project emissions from flaring" (Version 04.0) File - am-tool-06-v4.0.pdf	<a href="https://cdm.unfccc.int/Reference/tools/index.html">https://cdm.unfccc.int/Reference/tools/index.html</a> <a href="https://cdm.unfccc.int/methodologies/Pamethodologies/tools/am-tool-06-v4.0.pdf/history_view">https://cdm.unfccc.int/methodologies/Pamethodologies/tools/am-tool-06-v4.0.pdf/history_view</a> <a href="https://cdm.unfccc.int/methodologies/Pamethodologies/tools/am-tool-06-v4.0.pdf">https://cdm.unfccc.int/methodologies/Pamethodologies/tools/am-tool-06-v4.0.pdf</a>	UNFCCC website
5	VERRA	Template	VCS-Monitoring-Report-Template-v4.4	VCS Website
6	VERRA	Template	Verification Report: VCS Version Template 4.4	VCS Website
7	VERRA	Registration and Issuance Process version 4.4	Registration and Issuance Process version 4.4	VCS Website
8	VERRA	VCS Program Definitions	VCS Program Definitions, v4.4	VCS Website
9	VERRA	VCS Program Guide	VCS Program Guide, v4.4	VCS website
10	VERRA	VCS Standard	VCS Standard, v4.7	VCS website
11	Various	Technical and manufacturer specifications	<i>Equipment information through the websites (second sources information):</i>  <a href="https://www.endress.com/en/field-instruments-overview/flow-measurement-product-overview/Product-Thermal-flowmeter-t-mass-65F">https://www.endress.com/en/field-instruments-overview/flow-measurement-product-overview/Product-Thermal-flowmeter-t-mass-65F</a>  <a href="http://www.landtecnica.com">http://www.landtecnica.com:</a>  <i>for the portable biogas analyzer Landtec information</i>  <a href="https://issuu.com/alutal/docs/catalogo-tecnico">https://issuu.com/alutal/docs/catalogo-tecnico</a>	Project Participant -PP  Others
12	BRASCARBON	Sampling Plan (parameters WCH4,y and fvCH4,RG)	Sampling_Plan_BCA-BRA_19_MR02.xlsx	Project Participant -PP
13	BRASCARBON	Operational Procedure: POP -08 – The flame detection is assured by following POP 08/13/ as the	POP 8 – Calculo Da Eficiencia Do Flare.pdf	Project Participant -PP

ID	Author	Title	References to the document	Provider
		verification team assessed data collected on form 08.001. In addition the operation conditions of the equipment have been verified by PP		
14	BRASCARBON	Operational Procedure: POP-14	POP 14 – Formulação De Ração rev1.pdf	Project Participant -PP
15	BRASCARBON	Form 01.001. Information with minute by minute temperature and biogas volume data stored in the PLC The files are daily records of flare activity minute by minute, collected monthly	<p>The PP presents a total of 130 files, below are some of the files generated per site ( 323 and 332 as examples):</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 01-02-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 01-05-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 01-10-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 02-03-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 02-06-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 02-09-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 03-01-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 03-04-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 03-08-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 03-11-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 04-12-23 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 05-01-24 - TABELA DE DADOS.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 05-07-23 - TABELA DE DADOS.xls</p>	Project Participant -PP

ID	Author	Title	References to the document	Provider
		POP 01 - Operational Procedure: POP-01	<p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 01-03-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 01-10-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 02-02-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 02-06-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 02-09-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 03-01-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 03-05-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 03-08-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 03-11-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 04-04-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 04-12-23 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 05-01-24 - TABELA DE DADOS.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 05-07-23 - TABELA DE DADOS.xls</p> <p>POP 1 – OBTENÇÃO DA TEMPERATURA DE COMBUSTÃO_v8.pdf</p>	
16	BRASCARBON	POP 02 – Operational Procedure: POP – 2 INSPEÇÃO DA LOCALIDADE & MS% l,y	POP 2 – INSPEÇÃO DA LOCALIDADE_v6.pdf	Project Participant
17	BRASCARBON	Livestock inventory. Total number of animals, information collected on form	BCA-323MS1-19 - Lote 23 Quadra 27 - 30-12-23 - FORMULARIO 03.xls	Project Participant

ID	Author	Title	References to the document	Provider
		<p>03.001 and 03.003 (the file name is Sistema de Controle de Animais, regarding each project site, nevertheless is the form 03.003)</p> <p>Operational Procedure: POP 03 – CONTAGEM DE ANIMAIS</p> <p>Sistema de Controle de Animais</p>	<p>BCA-324MS1-19 - P. L. N24 e N26 Q. 37 - 30-12-23 - FORMULARIO 03.001.xls</p> <p>BCA-325MS1-19 - Lotes 35, 37 e 39 Quadra 39 - 30-12-23 - FORMULARIO 03.001.xls</p> <p>BCA-326MS1-19 - Lote Rural N 56 Quadra 34 - 30-12-23 - FORMULARIO 03.001.xls</p> <p>BCA-327MS1-19 - Quadra 61 Lote 43 - 30-12-23 - FORMULARIO 03.001.xls</p> <p>BCA-328MS1-19 - Lote 4 e 6 Quadra 61 - 30-12-23 - FORMULARIO 03.001.xls</p> <p>BCA-329MS1-19 - Sitio N. S. A. - 30-12-23 - FORMULARIO 03.xls</p> <p>BCA-330MS1-19 - Lote 45 Quadra 61 - 30-12-23 - FORMULARIO 03.001.xls</p> <p>BCA-331MS1-18 - Lote 42 Q. 28 - 30-12-23 - FORMULARIO 03.xls</p> <p>BCA-332MS1-19 - Parte dos lotes 46 e 48 - 30-12-23 - FORMULARIO 03.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 30-12-23 - ANIMAIS.xls</p> <p>BCA-324MS1-19 - P. L. N24 e N26 Q. 37 - 30-12-23 - ANIMAIS.xls</p> <p>BCA-325MS1-19 - Lotes 35, 37 e 39 Quadra 39 - 30-12-23 - ANIMAIS.xls</p> <p>BCA-326MS1-19 - Lote Rural N 56 Quadra 34 - 30-12-23 - ANIMAIS.xls</p> <p>BCA-327MS1-19 - Quadra 61 Lote 43 - 30-12-23 - ANIMAIS.xls</p> <p>BCA-328MS1-19 - L. 4 e 6 Q. 61 - 30-12-23 - ANIMAIS.xls</p> <p>BCA-329MS1-19 - Sitio N. S. A. - 30-12-23 - ANIMAIS.xls</p> <p>BCA-330MS1-19 - Lote 45 Quadra 61 - 30-12-23 - ANIMAIS.xls</p> <p>BCA-331MS1-18 - Lote 42 Q. 28 - 30-12-23 - ANIMAIS.xls</p> <p>BCA-332MS1-19 - Parte dos lote 36 e 48 - 30-12-23 - ANIMAIS.xls</p> <p>BC POP 3 – CONTAGEM DE ANIMAIS_v6.pdf</p>	
18	BRASCARBON	Form 04.001. Information related to parameters biogas volume, WCH <sub>4</sub> , Pbiogas and Tbiogas - reports by farm	<p>BCA-323MS1-19 - Lote 23 Quadra 27 - 02-06-23 - FORMULARIO 04.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 04-12-23 - FORMULARIO 04.xls</p> <p>BCA-323MS1-19 - Lote 23 Quadra 27 - 05-01-24 - FORMULARIO 04.xls</p>	

ID	Author	Title	References to the document	Provider
		Operational Procedure: POP-04	BCA-324MS1-19 - P. L. N24 e N26 Q.37 - 02-06-23 - FORMULARIO 04.001.xls BCA-324MS1-19 - P. L. N24 e N26 Q.37 - 04-12-23 - FORMULARIO 04.001.xls BCA-324MS1-19 - P. L. N24 e N26 Q37 - 05-01-24 - FORMULARIO 04.001.xls BCA-325MS1-19 - Lotes 35, 37 e 39 Quadra 39 - 02-06-23 - FORMULARIO 04.001.xls BCA-325MS1-19 - Lotes 35, 37 e 39 Quadra 39 - 04-12-23 - FORMULARIO 04.001.xls BCA-325MS1-19 - Lotes 35, 37 e 39 Quadra 39 - 05-01-24 - FORMULARIO 04.001.xls BCA-326MS1-19 - Lote Rural N 56 Quadra 34 - 02-06-23 - FORMULARIO 04.001.xls BCA-326MS1-19 - Lote Rural N 56 Quadra 34 - 04-12-23 - FORMULARIO 04.001.xls BCA-326MS1-19 - Lote Rural N 56 Quadra 34 - 05-01-24 - FORMULARIO 04.001.xls BCA-327MS1-19 - Quadra 61 Lote 43 - 02-06-23 - FORMULARIO 04.001.xls BCA-327MS1-19 - Quadra 61 Lote 43 - 04-12-23 - FORMULARIO 04.001.xls BCA-327MS1-19 - Quadra 61 Lote 43 - 05-01-24 - FORMULARIO 04.001.xls BCA-328MS1-19 - Lote 4 e 6 - 02-06-23 - FORMULARIO 04.001.xls BCA-328MS1-19 - Lote 4 e 6 - 04-12-23 - FORMULARIO 04.001.xls BCA-328MS1-19 - Lote 4 e 6 Quadra 61 - 05-01-24 - FORMULARIO 04.001.xls BCA-329MS1-19 - Sitio N. S. Aparecida - 03-06-23 - FORMULARIO 04.xls BCA-329MS1-19 - Sitio N. S. Aparecida - 04-01-24 - FORMULARIO 04.xls BCA-329MS1-19 - Sitio N. S. Aparecida - 05-12-23 - FORMULARIO 04.xls BCA-330MS1-19 - Lote 45 Quadra 61 - 02-06-23 - FORMULARIO 04.001.xls	

ID	Author	Title	References to the document	Provider
			<p>BCA-330MS1-19 - Lote 45 Quadra 61 - 04-12-23 - FORMULARIO 04.001.xls</p> <p>BCA-330MS1-19 - Lote 45 Quadra 61 - 05-01-24 - FORMULARIO 04.001.xls</p> <p>BCA-331MS1-19 - Lote 42 Q. 28 - 02-06-23 - FORMULARIO 04.xls</p> <p>BCA-331MS1-19 - Lote 42 Q. 28 - 04-12-23 - FORMULARIO 04.xls</p> <p>BCA-331MS1-19 - Lote 42 Q. 28 - 05-01-24 - FORMULARIO 04.xls</p> <p>BCA-332MS1-19 - Parte dos Lotes 45 e 48 - 02-06-23 - FORMULARIO 04.xls</p> <p>BCA-332MS1-19 - Parte dos Lotes 45 e 48 - 04-12-23 - FORMULARIO 04.xls</p> <p>BCA-332MS1-19 - Parte dos Lotes 46 e 48 - 05-01-24 - FORMULARIO 04.xls</p> <p>POP 4 – MEDIÇÃO DO VOLUME DE BIOGÁS_v6.pdf</p>	
19	UNFCCC	<p>Tool 14: Methodological tool: “Project and leakage emissions from anaerobic digesters” version 2 EB 96 annex 7</p>	<p><a href="https://cdm.unfccc.int/Reference/tools/index.html">https://cdm.unfccc.int/Reference/tools/index.html</a></p> <p><a href="https://cdm.unfccc.int/methodologies/Pamethodologies/tools/am-tool-14-v2.pdf">https://cdm.unfccc.int/methodologies/Pamethodologies/tools/am-tool-14-v2.pdf</a></p>	UNFCCC website
20	BRASCARBON	<p>Form 08.001: flare temperature for all of the project sites /minute per minute</p>	<p>2023 - 84 files, each representing a file/site/month, as follows: for example (323 and 3322 sites):</p> <p>323</p> <p>BCA-323MS1-19 - Formulario 08.001 - 01-2023.xlsx</p> <p>BCA-323MS1-19 - Formulario 08.001 - 02-2023.xlsx</p> <p>BCA-323MS1-19 - Formulario 08.001 - 03-2023.xlsx</p> <p>BCA-323MS1-19 - Formulario 08.001 - 04-2023.xlsx</p> <p>BCA-323MS1-19 - Formulario 08.001 - 05-2023.xlsx</p> <p>BCA-323MS1-19 - Formulario 08.001 - 06-2023.xlsx</p> <p>BCA-323MS1-19 - Formulario 08.001 - 07-2023.xlsx</p> <p>BCA-323MS1-19 - Formulario 08.001 - 08-2023.xlsx</p> <p>BCA-323MS1-19 - Formulario 08.001 - 09-2023.xlsx</p>	

ID	Author	Title	References to the document	Provider
			BCA-323MS1-19 - Formulario 08.001 - 10-2023.xlsx BCA-323MS1-19 - Formulario 08.001 - 11-2023.xlsx BCA-323MS1-19 - Formulario 08.001 - 12-2023.xlsx  332: BCA-332MS1-19 - Formulario 08.001 - 01-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 02-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 03-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 04-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 05-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 06-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 07-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 08-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 09-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 10-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 11-2023.xlsx BCA-332MS1-19 - Formulario 08.001 - 12-2023.xlsx	
21	UNFCCC	CDM-EB67-A06-GUID Guideline for Sampling and Surveys for CDM Project Activities and Programmes of Activities. Version 04	<a href="https://cdm.unfccc.int/Reference/Guidclarif/index.html">https://cdm.unfccc.int/Reference/Guidclarif/index.html</a>	UNFCCC website
22	BRASCARBON	Formulated feed ration / JBS Operational Procedure: POP-14	01 24 - Formulacao Racao Dourados.pdf POP 14 – FORMULAÇÃO DE RAÇÃO_v4.pdf	Others Project Participant
23	BRASCARBON	Installation records	Consolidated PDF files by site: PDD 19 - Instalacao Medidor de Vazao.pdf PDD 19 - Instalacao Termopar 2022 2023.pdf PDD 19 - Instalacao Termopar 2023 2024 Folha 1.pdf PDD 19 - Instalacao Termopar 2023 2024 Folha 2.pdf	Project Participant

ID	Author	Title	References to the document	Provider
24	BRASCARBON	POP Operational Procedure-15	POP 15 – MONITORAMENTO DA GENÉTICA_v3.pdf	Project Participant
25	ASSUGLORIA (Cooperativa Agropecuária de Gória de Dourados),	Purchase record provided by PP and Declarations	01 24 - Declaracao Genetica Assugloria PDD19.pdf 01 24 - Declaracao Processo Peso Dourados.pdf  01 24 - Ultima Compra Matriz Genetica.pdf	Others
26	ALUTAL / LAURY FRAN	Installation and calibration Thermocouple and Thermopar  Calibration records of the thermocouples (installation records)  PD 18 – Medidor de Temperatura 2022 – 2023  PD 18 – Medidor de Temperatura 2023 – 2024	2022-2023: BCA-323MS1-19 - Medidor de Temperatura Serie 320348 e Certificado CA-6930-21.pdf BCA-324MS1-19 - Medidor de Temperatura Serie 320356 e Certificado CA-6938-21.pdf BCA-325MS1-19 - Medidor de Temperatura Serie 320358 e Certificado CA-6940-21.pdf BCA-326MS1-19 - Medidor de Temperatura Serie 320359 e Certificado CA-6941-21.pdf BCA-327MS1-19 - Medidor de Temperatura Serie 320360 e Certificado CA-6942-21.pdf BCA-328MS1-19 - Medidor de Temperatura Serie 320361 e Certificado CA-6943-21.pdf BCA-329MS1-19 - Medidor de Temperatura Serie 320347 e Certificado CA-6929-21.pdf BCA-330MS1-19 - Medidor de Temperatura Serie 320339 e Certificado CA-6921-21.pdf BCA-331MS1-19 - Medidor de Temperatura Serie 320354 e Certificado CA-6936-21.pdf BCA-332MS1-19 - Medidor de Temperatura Serie 320355 e Certificado CA-6937-21.pdf 2023 – 2024: BCA-323MS1-19 - Medidor de Temperatura Serie 89316 e Certificado CA 1711 22.pdf BCA-324MS1-19 - Medidor de Temperatura Serie 166919 e Certificado CA 1712 22.pdf BCA-325MS1-19 - Medidor de Temperatura Serie 166920 e Certificado CA 1713 22.pdf BCA-326MS1-19 - Medidor de Temperatura Serie 166924 e Certificado CA 1717 22.pdf	Others

ID	Author	Title	References to the document	Provider
			BCA-327MS1-19 - Medidor de Temperatura Serie 81334 e Certificado CA 1675 22.pdf BCA-328MS1-19 - Medidor de Temperatura Serie 81332 e Certificado CA 1673 22.pdf BCA-329MS1-19 - Medidor de Temperatura Serie 81333 e Certificado CA 1674 22.pdf BCA-330MS1-19 - Medidor de Temperatura Serie 81337 e Certificado CA 1677 22.pdf BCA-331MS1-19 - Medidor de Temperatura Serie 81338 e Certificado CA 1678 22.pdf BCA-332MS1-19 - Medidor de Temperatura Serie 81340 e Certificado CA 1679 22.pdf	
27	Endress+Houser	Declaration: thermal flow meter calibration Calibration records of the Flow Meter Formulário Instalação e Calibração  PDD 19 - Medidor de Vazão 2022 2024	Declaração Medidores Vazão.pdf  BCA-323MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-324MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-325MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-326MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-327MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-328MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-329MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-330MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-331MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf BCA-332MS1-19 - Certificado de Calibração Medidor de Vazão Endress Houser.pdf	Others
28	LANDTEC	Calibration records of the gas Analyzer	04 - BM11042-20072022.pdf 05 - BM11042-10012023.pdf 06 - BM11042-07052023.pdf	Others

ID	Author	Title	References to the document	Provider
			07 - BM11042-03112023.pdf	
29	BRASCARBON	Training records referring training for calibration and installation of the flow meter, issued by Endress+Hauser Controle e Automação LTDA.	Certificado Treinamento Brascarbon.pdf	Project Participant
30	BRASCARBON	POP 16 – Animal Weight Monitoring.	POP 16 – PESO MÉDIO DOS ANIMAIS EM CONFINAMENTO_v4.pdf	Project Participant
31	BRASCARBON	POP 07- Operational Procedure 07	POP 7 – CALCULO DA DENSIDADE O METANO_v8.pdf	Project Participant
32	BRASCARBON	POP 12- Maintenance Form 12.001 – MANUTENÇÃO PREVENTIVA DA LOCALIDADE – VERIFICAÇÕES MENSAS	POP 12 – MANUTENÇÃO GERAL_v4.pdf	Project Participant
33	BRASCARBON	Operational Procedure 09	POP 9 – REMOÇÃO DO LODO DO BIODIGESTOR_v5.pdf	Project Participant
34	BRASCARBON	Operational Procedure 13	POP 13 – OBTENÇÃO DA PRESSÃO DO BIOGÁS_v6.pdf	Project Participant
35	BRASCARBON	Operational Procedure 22	POP 22 – CONSUMO DE ENERGIA ELÉTRICA.pdf	Project Participant
36	BRASCARBON	Operational Procedure 5	POP 5 – MEDIÇÃO DA FRAÇÃO DE METANO_v7.pdf	Project Participant
37	BRASCARBON	Operational Procedure 6	POP 6 – OBTENÇÃO DA TEMPERATURA DO BIOGÁS_v6.pdf	Project Participant
38	BRASCARBON	Operational Procedure 8	POP 8 – CALCULO DA EFICIÊNCIA DO FLARE_v8.pdf	Project Participant
39	BRASCARBON	Operational Procedure 9	POP 9 – REMOÇÃO DO LODO DO BIODIGESTOR_v5.pdf	Project Participant
40	BRASCARBON	Operational Procedure 10	POP 10 – REDUÇÕES DAS EMISSÕES_v5.pdf	Project Participant
41	BRASCARBON	Operational Procedure 11	POP 11 – TREINAMENTO GERAL DAS OPERAÇÕES_v4.pdf	Project Participant
42	BRASCARBON	Operational Procedure 17	POP 17 – REDUÇÕES DAS EMISSÕES EXPOST_v6.pdf	Project Participant
43	BRASCARBON	Operational Procedure 24	POP 24 – DIAS FUNCIONAMENTO_v2.pdf	Project Participant
44	BRASCARBON  Project site Owners / State of Mato Grosso do Sul state, Brazil.	Operation Licenses of the project sites	1 - BCA-327MS1-19 - LO.pdf 1 - BCA-328MS1-19 - Protocolo RLO.pdf 1 - BCA-329MS1-19 - L O.pdf 1 - BCA-330MS1-19 - RLO.pdf 2 - BCA-323MS1-19 - LO.pdf 2 - BCA-324MS1-19 - RLO.pdf 2 - BCA-325MS1-19 - RLO.pdf 2 - BCA-326MS1-19 - RLO.pdf 2 - BCA-331MS1-19 - RLIO.pdf	Others/ Project Participant -PP

ID	Author	Title	References to the document	Provider
			2 - BCA-332MS1-19 - R.L.O..pdf	
45	Intergovernmental Panel on Climate Change	IPCC Guidelines	<p>2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book - V4_10_Ch10_Livestock.pdf</p> <p>2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories 19R_V4_Ch10_Livestock.pdf</p>	<p><a href="https://www.ipcc.ch">https://www.ipcc.ch</a>  <a href="https://www.ipcc-nggip.iges.or.jp">https://www.ipcc-nggip.iges.or.jp</a>  <a href="https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html">https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html</a>  <a href="https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch10_Livestock.pdf">https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch10_Livestock.pdf</a></p>
46	Remote inspection	Photographs of Project Site provided by the Project Proponent 2024 vs. Photographs taken on site at each Project Site in 2023	<p>Photographs of this per site(10), all the monitoring devices and main equipment, farms, documents and forms</p> <p>Photographic records of:</p> <ul style="list-style-type: none"> <li>- GPS -- Coordinates - altitude</li> <li>- Pig production buildings</li> <li>- State of the biodigester</li> <li>- Oxidation lagoons</li> <li>- Burner and torch in operation</li> <li>- Thermocouple in operation</li> <li>-Physical execution -Ultraviolet flame detectors and solar panel</li> <li>- Alutal recording equipment</li> <li>- Flow meter</li> <li>- piping</li> <li>- installations included</li> <li>- Analyzer in implementation</li> <li>- Monitoring (form 04.001 filled out according to POP 04)</li> <li>- Monitoring records by the technician.</li> <li>- Visual observation of the general condition of the area, cleanliness, ease of access.</li> <li>-Physical separation of the methane capture and flaring area.</li> <li>-Signage - identification of the site</li> </ul>	<p>PP Audit Team</p>
47	BRASCARBON	Photographs of Project Site	<p>Photographic records taken by the  PP323 MS1-19  324 MS1-19  325 MS1-19  326 MS1-19  327 MS1-19  328 MS1-19  329 MS1-19</p>	PP

ID	Author	Title	References to the document	Provider
			330 MS1-19 331 MS1-19 332 MS1-19	
48	The Sustainable Development Goals (SDGs)	The Sustainable Development Goals (SDGs) are a set of 17 interconnected objectives established by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development. The SDGs serve as a global platform for action in key areas of sustainable development, and their implementation requires the commitment and collaboration of all societal actors, both at the national and international levels. SDGs, Brazil	<a href="https://www.un.org/sustainabledevelopment/">https://www.un.org/sustainabledevelopment/</a> <a href="https://www.un.org/sustainabledevelopment/">https://www.un.org/sustainabledevelopment/</a> <a href="https://observatorioplanificacion.cepal.org/es/modalidades/estrategia-ods-de-brasil">https://observatorioplanificacion.cepal.org/es/modalidades/estrategia-ods-de-brasil</a> Pagina <a href="https://brasil.un.org/pt-br/sdgs">https://brasil.un.org/pt-br/sdgs</a> <a href="https://brasil.un.org/pt-br/sdgs/13">https://brasil.un.org/pt-br/sdgs/13</a> <a href="https://www.un.org/sustainabledevelopment/es/sustainable-development-goals/">https://www.un.org/sustainabledevelopment/es/sustainable-development-goals/</a> <a href="https://www.gov.br/mre/es/temas/desarrollo-sostenible-y-medio-ambiente/medio-ambiente-y-cambio-climatico/cambio-climatico">https://www.gov.br/mre/es/temas/desarrollo-sostenible-y-medio-ambiente/medio-ambiente-y-cambio-climatico/cambio-climatico</a>	ICONTEC
49	BRASCARBON	Communication's – Stakeholders	1 - Envio Convite Prefeitura Municipal de Gloria de Dourados.pdf 1A - Confirmação de entrega de convite prefeitura municipal de Gloria de Dourados.pdf 2 - Envio de convite secretaria sustentabilidade de Gloria de Dourados.pdf 2A - Confirmação de entrega de convite secretaria sustentabilidade de Gloria de Dourados.pdf 3 - Envio convite secretaria do meio ambiente de Jatei.pdf 3A - Confirmação de entrega de convite secretaria do meio ambiente de Jatei.pdf 4 - Envio de convite para sindicato rural de jatei.pdf 4A - Confirmação de envio de convite sindicato rural de jatei.pdf	PP
50	BRASCARBON	Farm owner contracts (Val and Ver / docs 2023)	BCA-326MS1-19 - Contrato de Comodato Lote Rural N;56 Quadra 34.pdf BCA-327MS1-19 - Contrato Cessao de Cers Quadra 61, Lote 43.pdf	

ID	Author	Title	References to the document	Provider
			<p>BCA-323MS1-19 - Contrato Cessao de Cers Parte do Lote 23 Quadra 27.pdf</p> <p>BCA-323MS1-19 - Contrato de Comodato Parte do Lote 23 quadra 27.pdf</p> <p>BCA-324MS1-19 - Contrato Cessao de Cers Parte dos Lotes Rurais N;24 e N;26 Quadra 37.pdf</p> <p>BCA-324MS1-19 - Contrato de Comodato Parte dos Lotes Rurais N;24 e N;26 Quadra 37.pdf</p> <p>BCA-325MS1-19 - Contrato Cessao Cers Lote 35,37 e 39 Quadra 39.pdf</p> <p>BCA-325MS1-19 - Contrato Comodato Lote 35,37 e 39 Quadra 39.pdf</p> <p>BCA-326MS1-19 - Contrato Cessao de Cers Lote Rural N; 56 Quadra 34.pdf</p> <p>BCA-327MS1-19 - Contrato de Comodato Quadra 61, Lote 43.pdf</p> <p>BCA-328MS1-19 - Contrato Cessao Cers Lote 04 e 06 Quadra 61, Lotes 3,5,7 e 9 Quadra 64.pdf</p> <p>BCA-328MS1-19 - Contrato Comodato Lote 04 e 06 Quadra 61, Lotes 3,5,7 e 9 Quadra 64.pdf</p> <p>BCA-329MS1-19 - Contrato Cessao de CERs Sitio Nossa Senhora Aparecida Parte do lote 3 e 5 da Quadra 29.pdf</p> <p>BCA-329MS1-19 - Contrato de Comodato Sitio Nossa Senhora Aparecida Parte do lote 3 e 5 Quadra 29.pdf</p> <p>BCA-330MS1-19 - Contrato de Cers Lote 45 Quadra 61.pdf</p> <p>BCA-330MS1-19 - Contrato de Comodato Lote 45 Quadra 61.pdf</p> <p>BCA-331MS1-19 - Contrato de Cers Parte do Lote 42 Quadra 28.pdf</p> <p>BCA-331MS1-19 - Contrato de Comodato Parte do Lote 42 Quadra 28.pdf</p> <p>BCA-332MS1-19 - Contrato de Cessao de Cers parte dos lotes 46,48 Quadra 48.pdf</p> <p>BCA-332MS1-19 - Contrato de Comodato Parte dos Lotes 46,48 Quadra 48.pdf</p>	
51	VCS	VCS	<a href="https://verra.org/project/vcs-program/">https://verra.org/project/vcs-program/</a>	Website

ID	Author	Title	References to the document	Provider
52	UNFCCC	UNFCCC	<a href="https://cdm.unfccc.int">https://cdm.unfccc.int</a>	Website
53	VCS	VVR – Validation and Verification Report Validation first credit period Verification first monitoring period	VCS-Joint-Validation-Verification 4289_BRA 19v.3_11.12.2023_clean	ICONTEC PP
54	BRASCARBON	BRASCARBON	RESOLUÇÃO-SEMADE-N.-09-2015-alt-2020.pdf	PP
55	IMASUL	MS oficializa Plano Estado Carbono Neutro em 2030 e vai para COP 26 com metas ousadas	<a href="https://www.imasul.ms.gov.br/ms-oficializa-plano-estado-carbono-neutro-em-2030-e-vai-para-cop-26-com-metas-ousadas/">https://www.imasul.ms.gov.br/ms-oficializa-plano-estado-carbono-neutro-em-2030-e-vai-para-cop-26-com-metas-ousadas/</a>	ICONTEC
56	BRASCARBON	Operational Procedure 25	POP 25 – COMUNICAÇÃO E RECLAMAÇÕES.pdf	Project Participant
57	BRASCARBON	Operational Procedure 26	POP 26 – INTERNAL AUDITS.pdf	Project Participant
58	INMET	The National Institute of Meteorology (INMET) is a federal agency under Brazil's Ministry of Agriculture and Livestock (MAPA)	<a href="https://portal.inmet.gov.br">https://portal.inmet.gov.br</a> <a href="https://mapas.inmet.gov.br/#">https://mapas.inmet.gov.br/#</a> <a href="https://es.weatherspark.com/map?id=29524&amp;pageType=7&amp;yearNumber=2025">https://es.weatherspark.com/map?id=29524&amp;pageType=7&amp;yearNumber=2025</a>	ICONTEC – Project Participant
	IMASUL	IMASUL - Environmental Quality	IMASUL - Environmental Quality Report 2022-2023 pdf.	
	INMET	The National Institute of Meteorology	Inmet / Dourados-MS 2025.pdf Inmet / Jatai 2023.pdf Inmet / jatai 2025.pdf Inmet / Mapa de Estações.pdf Inmet / table Dourados 2025.pdf Inmet // Mapa de Estações.pdf INMET // Tempo doruados 2025.pdf INMET // Tempo Dourados 2023.pdf Mapamundi de las temperaturas promedio de 24 horas x 365 días en diferentes puntos - Weather Spark.pdf	

# APPENDIX 4: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS AND FORWARD ACTION REQUESTS

**Table 1.CL from this verification**

<b>CL ID</b>	01	<b>Section no.</b>	Standard VCS v.4.7 - section 3.8 Project Start Date	<b>Date:</b> 19/06/2024
<b>Description of CL</b>				
In sections 1.1 and 3.1 of the PP's Monitoring Report (MR), where the Implementation Status of the Project Activity is described, it mentions that it is section 3.7 of the VCS Standard: the project start date of a non-AFOLU project is the date on which the project began generating GHG emission reductions or removals. Projects shall complete validation within specific timeframes from the project start date. However, in the VCS Standard v.4.7, this is mentioned in section 3.8. Please review and, if necessary, correct or confirm.				
<b>Project participant response</b>				<b>Date:</b> 26/06/2024
The revised document VC MR Project ID 4289 01012023-31122023_v2 has fully addressed that issued and was dully corrected.				
<b>Documentation provided by project participant</b>				
VCS MR Project 19v.2 / document				
<b>VVB assessment</b>				<b>Date:</b> 29/06/2024
The MR is checked, ICONTEC confirmed that the clarification has been corrected, CL 01 is closed.				

<b>CL ID</b>	02	<b>Section no.</b>	Standard VCS v.4.7 - section 3.18 Stakeholder Engagement / VCS Monitoring Report Template, v4.3 vs. V.4.4 updated	<b>Date:</b> 19/06/2024
<b>Description of CL</b>				
The VCS Monitoring Report Template, in its section 2.1.2 Stakeholder Consultation, indicates that the date was 12-03-2020. Please confirm or correct, as appropriate.				
<b>Project participant response</b>				<b>Date:</b> 26/06/2024
The revised document VC MR Project ID 4289 01012023-31122023_v2 has fully addressed that issued and was dully corrected.				
<b>Documentation provided by project participant</b>				

VCS MR Project 19v.2 / document	
<b>WB assessment</b>	<b>Date:</b> 29/06/2024
The MR is checked, ICONTEC confirmed that the clarification has been corrected CL 2 is closed	

<b>CL ID</b>	03	<b>Section no.</b>	Standard VCS v.7 vs. v.4.5 - section 3.5 Project Documentation - and sections 2.3.3	<b>Date:</b> 19/06/2024
<b>Description of CL</b>				
<p>The Project Proponent developed the monitoring report using the version 4.3 template. The new version 4.4 is from April 16, 2024. Additionally, VCS standard v.7 in its section 3.5 of project design and section 3.5.5 mentions that the project proponent shall use the VCS Monitoring Report Template or an approved combined monitoring report template available on the Verra website, as appropriate, and adhere to all instructional text within the template. Therefore, the Project Proponent must use the version 4.4 template for their monitoring report.</p>				
<b>Project participant response</b>				<b>Date:</b> 26/06/2024
The revised document VC MR Project ID 4289 01012023-31122023_v2 has fully addressed that issued and is using the latest version of the VCS MR template (version 4.4).				
<b>Documentation provided by project participant</b>				
VCS MR Project 19v.2 / document - template v. 4.4				
<b>WB assessment</b>				<b>Date:</b> 29/06/2024
The PP submitted version 2 of the monitoring report in the new template version (4.4), therefore the CL is closed.				

<b>CL ID</b>	04	<b>Section no.</b>	Standard VCS v.4.7 - Monitoring Report	<b>Date:</b> 23/06/2024
<b>Description of CL</b>				
<p>Template - VCS-Monitoring-Report-Template-v4.4-FINAL2</p> <p>The PP developed the monitoring report using the template version 4.3. The new version 4.4, dated April 16, 2024, presents changes in various aspects such as sections like:</p> <ul style="list-style-type: none"> <li>i) Section 2.2, which includes 2.2.1 Management Experience</li> <li>ii) Section 2.3.1 Labor and Work</li> <li>iii) It requires a description of the risks identified in each item: 2.3.3, 2.3.4, 2.4, 2.4.1, and 5.4.</li> </ul> <p>The project proponent shall use the VCS Monitoring Report Template or an approved combined monitoring report template available on the Verra website, as appropriate, and adhere to all instructional text within the template. Therefore, the PP must use the monitoring report template version 4.4 and review the entire document applying version 4.4.</p>				
<b>Project participant response</b>				<b>Date:</b> 26/06/2024
The revised document VC MR Project ID 4289 01012023-31122023_v2 has fully addressed that issued and is using the latest version of the VCS MR template (version 4.4).				
<b>Documentation provided by project participant</b>				
VCS MR Project 19v.2 / document / template v. 4.4				
<b>VVB assessment</b>				<b>Date:</b> 29/06/2024
The revised document VC MR Project ID 4289 01012023-31122023_v2 has fully addressed that issued and is using the latest version of the VCS MR template (version 4.4).				

<b>CL ID</b>	05	<b>Section no.</b>	Standard VCS v.4.7 Project Documentation 3.5.5 Monitoring Report	<b>Date:</b> 23/06/2024
<b>Description of CL</b>				
<p>Section 1.8 / table 2 MR.</p> <p>In the monitoring report, the number of sites comprising the project must be corrected. See section 1.8 of the report where the number of farms is indicated. The project proponent (PP) must adjust the information</p>				
<b>Project participant response</b>				<b>Date:</b> 26 /06/2024
The revised document VC MR Project ID 4289 01012023-31122023_v2 has fully addressed that issued and was dully corrected.				
<b>Documentation provided by project participant</b>				
VCS MR Project 19v.2 / document				
<b>VVB assessment</b>				<b>Date:</b> 29/06/2024
The MR is checked, ICONTEC confirmed that the table has been corrected, CL 05 is closed.				

<b>CL ID</b>	06	<b>Section no.</b>	CER calculation	<b>Date:</b> 23/06/2024
<b>Description of CL</b>				
<p>In the spreadsheet for CER calculations, specifically in the Comparison NLT sheet and the Comparison Wsite sheet, there is missing information regarding the monitoring period. It should indicate that the period runs from the "Average in the monitoring period (3rd of February 2022 to 31st December 2022)." Please correct the date.</p>				
<b>Project participant response</b>				<b>Date:</b> 24/06/2024
<p>The revised document ER Calculation MR02 - BCA-BRA-19_v2 has fully addressed that issued and it was dully corrected.</p>				
<b>Documentation provided by project participant</b>				
<p>CER / ER Calculation. v.2 updated</p>				
<b>VVB assessment</b>				<b>Date:</b> 29/06/2024
<p>The CER was updated and dully corrected. CL 06 is closed.</p>				

Table 2.CAR from this verification

<b>CAR ID</b>	01	<b>Section no.</b>	Standard VCS Project Documentation 3.15 Quantification of GHG Emission Reductions and Carbon Dioxide Removals / MR chapter 5 and CER Calculation	<b>Date:</b> 24/06/2024
<b>Description of CAR</b>				
<p>The PP must review both the CER calculation and confirm in the Monitoring Report all related values presented in Chapter 5 of the MR identified as Section 5. Baseline Emissions Quantification of GHG Emission Reductions and Removals, which do not match the CER presented from Table 8 to Table 12. It is necessary to review the spreadsheets, the binding formulas of each cell, especially in the spreadsheet BEy ex-post - PEy ex-post, which requires reformulating the other results of the CER calculations file. These data differ from the values presented in the monitoring report for the tables:</p> <p>Table 8 – Baseline Emissions (BEy, ex-post) in the current monitoring period,</p> <p>Table 9 – Project Emissions (PEy, ex-post),</p> <p>Table 10 – Methane captured and destroyed (MDy) in the current monitoring period,</p> <p>Table 11 – ERy, ex-post in the current monitoring period, consolidated values of the project's monitoring period that the report format requests during the vintage period in VCU, and</p> <p>Table 12 – ERy, ex-post vs PD in the current monitoring period.</p> <p>Please conduct a thorough review of the chapter and the Excel file that was attached.</p>				

<b>Project participant response</b>	<b>Date:</b> 26/06/2024
The revised document ER Calculation MR02 – BCA-BRA-19_v2 has fully addressed that issued and it was dully corrected. The mistake was not on the MR sent but rather on the version of the ER spreadsheet sent, which was not the latest one.	
<b>Documentation provided by project participant</b>	
VCS MR Project 19v.2 / document	
<b>VVB assessment</b>	<b>Date:</b> 30/04/2024
The CERv.2 is checked, ICONTEC confirmed that the CAR has been corrected.by PP in ER and MR is correct.	
CAR 01 is closed.	

**Table 3.FAR from this verification**

<b>FAR ID</b>	01	<b>Section no.</b>	4.1 MR // IPCC //Verra Round 2	<b>Date:</b> 20/03/2025
<b>Description of FAR</b>				
Justification and Traceability of Wdefault Parameter DeviationDuring this verification, it was identified that the Project Proponent (PP) applied default values for the parameter Wdefault (50 kg / 198 kg) based on GLEAM/FAO data, which are not part of the default values listed in the 2006 IPCC Guidelines or the 2019 Refinement.The PP justified this deviation based on project-specific experience and stated that the values are conservative within the context of the applied modeling approach. Please adjust or explain as appropriate in all applicable references.				
<b>Project participant response</b>				<b>Date:</b> 08/04/2025
The PP justifies the application of the current Wsite values due to conservative purposes and also to be in line with the registered PD. Nevertheless, the PP acknowledge that the adjustment to the 2019 Refinement of the 2006 IPCC Guidelines should be applied and will address this issue both in the registered PD as well as in the ERR calculation spreadsheet during the next verification process.				
<b>Documentation provided by project participant</b>				
VCS MR Project 19v.4 / document				
<b>VVB assessment</b>				<b>Date:</b>
This FAR is issued based on the comments received in Round 2 of the Verra assessment. Although the justification regarding the Wdefault parameter—referencing GLEAM/FAO data and its conservative use—was included in the MR and reviewed during this verification, Verra indicated that the referenced table remains incorrect. Verra also stated that any deviation from the 2006 IPCC Guidelines must be clearly identified as such. Therefore, the VVB concludes that this deviation—while considered valid and conservative within the context of the applied modelling approach—shall be explicitly addressed in future MR submissions. To ensure traceability and transparency in subsequent verifications, the issuance of this FAR is recommended to document this and any future deviations from the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.				

# APPENDIX 5: DATA AND PARAMETERS

## 1. DATA AND PARAMETERS AVAILABLE AT VALIDATION<sup>13</sup>

Parameter	Description	Value	Source
VS <sub>default</sub>	Default value for the volatile solid excretion rate per day on a dry-matter basis for a defined livestock population	Market Swine: 0.3 Breeding Swine: 0.46 Gilts: 0.46	2019 Refinement to the IPCC 2006, vol 4, chapter 10, Tables 10A-7 <a href="http://www.abcs.org.br/43">http://www.abcs.org.br/43</a>
MC <sub>Fj</sub> <sup>14</sup>	Annual methane conversion factor for the baseline animal waste management system “j”.	79%	The 2019 Refinement to the IPCC 2006, Vol. 4, Chapter 10, Table 10.17 was analyzed; however, based on the PP's experience, it is observed that for this type of project, the estimated value based on the 2006 IPCC should be maintained in this case.
MS <sub>%BI,j</sub>	Fraction of manure handled in baseline animal manure management system “j”.	1	PP
GWP <sub>CH4</sub>	Global warming potential of Methane (CH <sub>4</sub> ) – tCO <sub>2e</sub> /tCH <sub>4</sub>	28	The value has been verified by checking IPCC Fifth Assessment Report (AR5)/34/ against

<sup>13</sup> Validation and Verification Report v.3 /53 /Section 3.4.8. item,1

<sup>14</sup> See in detail at the end of section 5.1.

Parameter	Description	Value	Source
			the VCS standard version 4.4/41/.
B <sub>0,LT</sub>	Maximum methane producing potential of the volatile solid generated for animal type "LT".	Sows (breeding swine more than 200 kg mass): 0.45 Finishers (market swine more than 50 kg mass): 0.45 Nursery: 0.45 Boars and Gilts (market swine more than 100 kg mass): 0.45	2006 IPCC for National Greenhouse Gas inventories, Tables 10-A7
W <sub>default</sub>	Default average animal weight of a defined population at the project site.	Sows (breeding swine): 198 kg Finishers (market swine): 50 kg Nursery (market swine): 50 kg Boars (market swine): 50 kg Gilts (breeding swine): 198 kg	2006 IPCC for National Greenhouse Gas inventories, Table 10-A.5
UF <sub>b</sub>	Model correction factor to account for model uncertainties	0.94	FCCC/SBSTA/2003/10/Add.2, page 25. Available on the website: <a href="http://unfccc.int/resource/docs/2003/sbsta/10a02.pdf">http://unfccc.int/resource/docs/2003/sbsta/10a02.pdf</a>
SPEC <sub>flare</sub>	Manufacturer's flare specifications for temperature, flow rate and maintenance schedule	The flare optimal conditions are, according the manufacturers specifications: Flow: between + 40% of the estimated flow (in m <sup>3</sup> /h) for any giving farm; Temperature: between 500°C and 800°C  Maintenance: Annually, recommended by the manufacturer. The PP preforms monthly maintenance, both preventive and corrective, if needed.	Flare manufacturer

**MCFj - Annual methane conversion factor for the baseline animal waste management system “j”.**

The project used an MCFj value of 79% for an uncovered anaerobic lagoon in a region with estimated temperatures between 23 and 26 °C, corresponding to a temperate and warm climate. This information was obtained from the IPCC 2006, Chapter 10, Volume 4 - Table 10.17, p.10.45. The definition and application of this value align with the AMS-III.D.v.21 Small-scale Methodology, specifically in section 4.3 Baseline Emissions and 4.4 Project Activity Emissions.

The project is located in the state of Mato Grosso do Sul, which has a predominant climatic zone of humid subtropical and tropical, with highly variable temperatures:

January is the warmest month, with average maximum temperatures of 34 °C and minimums of 24 °C.

July is the coldest month, with average maximum temperatures of 25 °C and minimums that can drop to - 2 °C.

According to the environmental authority of Mato Grosso do Sul, during the 2022 and 2023 period, temperatures ranged from 8 °C to 40 °C, with an average between 17 °C and 28 °C.

Source: IMASUL - Environmental Quality Report 2022-2023 /58/

Figura 06. Temperaturas médias e extremas da EMQAr da Petrobrás.

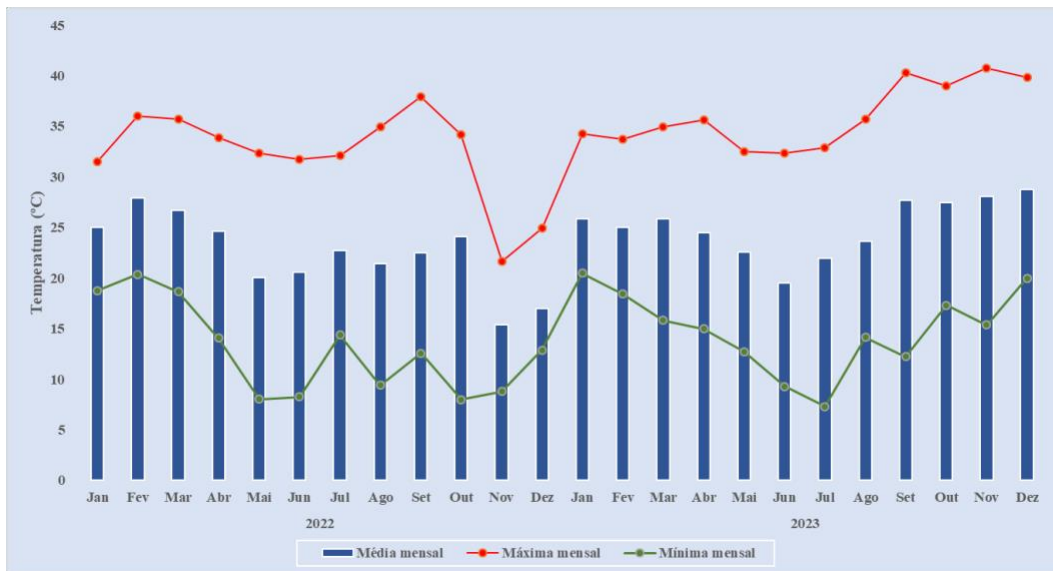
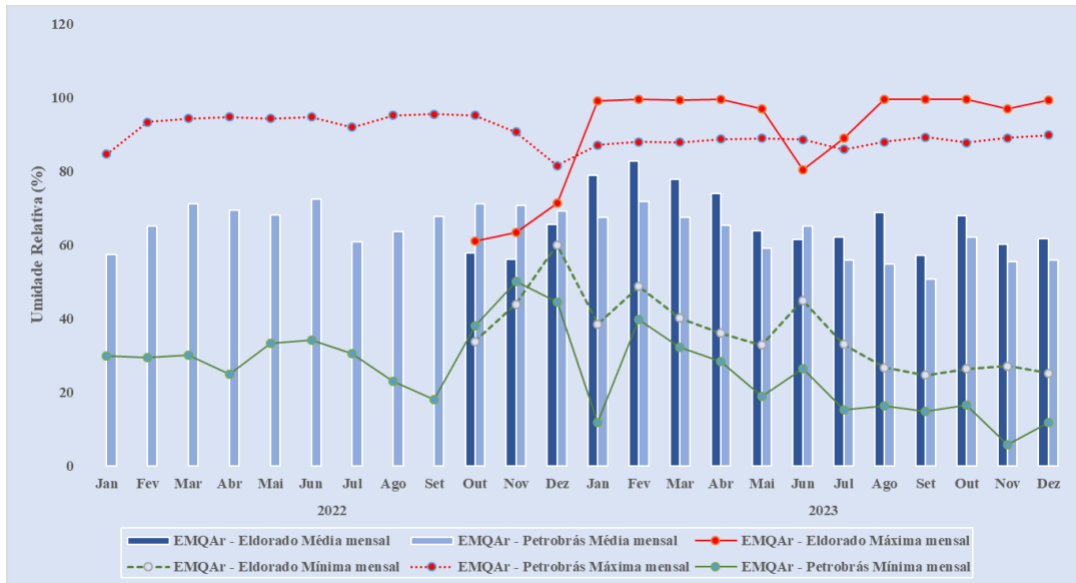


Figura 07. Umidade Relativa - médias mensais e valores extremos - das estações analisadas.



Considering that the IPCC references for this parameter depend on the project's site-specific climatic conditions and factors such as temperature, relative humidity, and the 2019 refinement, the IPCC suggests applying more detailed classification when determining the factor for a project. The classification includes:

Temperate (warm humid and warm dry)

Warm (tropical montane, tropical wet, tropical moist, tropical dry)

Based on this classification, Project 19 falls between tropical wet and slightly closer to tropical moist. Therefore, the applicable value cannot be 76% or 80%, as mentioned in the table.

In conclusion, the PP follows the recommendations of the methodology, and the guidance provided in the IPCC, which were initially recorded in the PD-MR and served as the basis for the project's validation and first verification approval.

## 2.DATA AND PARAMETERS MONITORED<sup>15</sup>

<b>1. Parameter:</b>	<b>T<sub>f</sub></b>
<b>Description:</b>	Combustion temperature of the flare (enclosed flares)
<b>Value:</b>	In the spreadsheet calculation file version 2(CER Calculation MR02 – BCA-BRA-19_v.4/2/ on folder MDy-PEpower,y,ex-post.
<b>Used Equipment:</b>	ALUTAL Standard Thermocouple, Accuracy Class; ± 1.5 °C or ± 0.25%. . Equipment of each project site is described in section C of the PD-MR/1/MR 2/2/
<b>Source of Data and Frequency:</b>	<p>Flare temperature is measured once per minute through thermocouples and recorded by the PLC system (Programmable Logic Control). On its turn, records are monthly collected by the Regional Technician through flash memory. Data collected is gathered monthly and kept on form: 01.001, also known as “Tabela de Dados” /15/. In addition, the QA/QC officer according to the internal procedure verifies Data collected.</p> <p>Every 1-minute measurement and registration by a Control Logic Program (CLP) According to the Monitoring Operational Procedure POP-01 /15</p>
<b>Data Cross Checking:</b>	<p>Historical data was available and was crosschecked by the audit team. The operational conditions of the monitoring equipment were assessed through interview to David Garcia CDM Manager, and it was verified procedure followed as well as the collect data collection and reporting.</p> <p>The audit team on -site take photographs and received current photographic records taken by the PP and taken, evidence related to equipment in operation, such as panoramic views and records of thermocouples at the project sites / 23/25/26/46.</p> <p>It was also verified collected temperature form 08-001 /20/data by considering methane content of biogas against form 01.001 /15/ as well as the emission reduction calculation file /2/.</p>
<b>Consistency Between the QA/QC defined in the Methodology:</b>	It was verified PP fulfils the proposed QA/QC procedures on applicable methodology and presented PD-MR /1/. The records of temperature /16/ /18/ have been thoroughly examined in order to identify correctness when applying figures. The monitoring equipment operated in the range of the technical specifications defined by the manufacturer /10/, and therefore assuring the monitoring conditions in line with requirements set out on applicable methodology.

<sup>15</sup> Validation and Verification Report v.3 /53 /Section 3.4.8. item,2

This chapter also includes adjustments according to Verra's requirements for the datasheets and implementation of the parameters adjusted by the PP during the current monitoring period.

<p>Consistency Between the QA/QC established by the Project Participants in the PD:</p>	<p>QA/QC procedures taken by the project activity are in line with the proposed procedures on PD-MR /1/ as well as applicable methodology /3/ /4/ /19/ 51.</p>
<p>Conclusion:</p>	<p>The overall conclusion on the matters of Parameter T<sub>f</sub> is that the parameter is properly applied according to the monitoring plan, the PD-MR/1/, MR/2/ and in accordance with the applied methodology. In addition, provided information (data and figures) is consistent with the primary and secondary information source used to verify the information as well as the information verified on-site/53/.lcontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed. These forms are based on the company's Operational Procedures (POP).</p>

2. Parameter:	SITE INSPECTION
Description:	Inspection on the site considering relevant regulation and the infrastructure of the site
Value:	<p>Annual follow-up of the documentation to check the expiration date, changes in the production lay-out and surroundings of the digester. Actions within the property and around the biodigesters should be taken both by the contractor and the client Brascarbon. Photos should be attached to the annual inspection report to prove that the system of wastewater management has not changed namely regarding the following items: pipes, gutters, roofs, fences, trees, control panel, flare, terminal boxes and general cleaning.</p> <p>Use of the annex attached at the operational procedure POP-02/16/44</p>
Used Equipment:	Not Applicable
Source of Data and Frequency:	<p>According to the PD-MR/1/, MR/2/ the frequency of site visits is annually; The site inspection is monitored by the use of the form 02.001/14/.</p> <p>In addition, PP visits different project sites once a month in order to collect data and to identify operational conditions of the different project sites in accordance with the monitoring plan.</p>
Data Cross Checking:	<p>Information provided on Form 02.001 and POP 2 /16/ was crosschecked against information by visit on site, relevant sources verified since the archives presented by PP and telephonic interviews and videocall.</p> <p>The audit team received made a field visit on September 13 2022 and took a photographic record of the site of each of the farms, equipment, operating system, status of the biodigestor and records /46/ it also confirmed the georeferenced location of the sites / 36 /.</p>

Consistency Between the QA/QC defined in the Methodology:	Site inspection is performed in the required frequency (according to applicable methodology /3/); furthermore, site inspection is done for each and every project site.
Consistency Between the QA/QC established by the Project Participants in the PD:	PP does site inspection on the frequency described on PD-MR/1/: a copy of the documents is submitted to the central office to the Quality Coordinator, who will verify the data, controlling it through an electronic system and ensuring its integrity.
Conclusion:	Based on assessed evidence, the overall conclusion on the matters of SITE INSPECTION is that the entire project sites are inspected as described on the monitoring plan. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed. These forms are based on the company's Operational Procedures (POP).

3.Parameter:	$N_{LT,y}$
Description:	Annual average number of animals of type "LT" in year "y"
Value:	The values of $N_{LT,y}$ can be found in calculation file for every project site /6/
Used Equipment:	Not Applicable
Source of Data and Frequency:	The actual figure of animals at each of the project sites is done monthly. PSO provides monthly reports using form 03.003 and 03.001 (Animal control system form) /17/, the one presents the daily entrance and exits records (such as purchase, transfers, sales, deaths, and internal transfer); in addition, the previously mentioned forms include information related to number of animals per animal category for each project site, specific for each specific farm. Data aggregation and reporting is monthly /17/ by the owner or manager of each farm. Calculation and reporting is managed through the monitoring system put in place by Brascarbon. The audit team verified all files provided by PP and related to animal figures. Files are listed on reference section /17/.
Data Cross Checking:	Information provided on excel files of the form 03.001 /17/, were cross-checked by comparing figures on Calculation file /6/ as well as livestock inventory stated in the MR stated on form 03.003 /17/
Consistency Between the QA/QC defined in the Methodology:	The calculation procedures as well as QA/QC measurements taken by PP are in accordance with requirements.
Consistency Between the QA/QC established by the Project Participants in the PD:	QA/QC measures taken by PP for the different project sites are in line with proposed QA/QC measures described on PD-MR.
Conclusion:	The overall conclusion is that PP correctly applies the parameter, taking into account data collection and reporting. In addition,

	QA/QC procedures agree with proposed procedures on PD-MR./1/, MR/2/.
--	--

4.Parameter:	$BG_{burnt,y}$
Description:	Biogas flared or used as a fuel in the year “y”
Value:	The values of $BG_{burnt,y}$ can be found in the calculation file /2/.
Used Equipment:	Flow Meter, Endress+Hauser thermal mass flow meter t-trend – ATT12 A99D31A4D1 MODEL, /27/Accuracy class $\pm 5\%$ of factory full scale. Equipment of each project site is described in section 6.1 of. The PD-MR/1/, MR/2/.
Source of Data and Frequency:	<p>Data related to the parameter is continuously recording,</p> <p>Collected monthly from the field with a flow meter. On its turn, collected data is gathered by the Regional Technician, Mr Sinomar dos Santos on a monthly basis and stored on forms 04.001 /18/, and 01.001 /15/.</p> <p>Related equipment measures the actual biogas volume on wet basis. As the flow meter registers the biogas that is directed to the flare cumulatively (and that is also the data registered in the PLC), the <math>BG_{burnt,y}</math> is calculated by differential with the previous biogas volume reading.</p>
Data Cross Checking:	Flow meter operation was verified crosschecking the calculation file /2/ against form 04.001 /18/ and form 01.001 /15/, /20/, against. In addition the regional technician confirmed the origin of data and the procedure of collection as described in MR /5/.
Consistency Between the QA/QC defined in the Methodology:	QA/QC procedures follow mandatory requirements from applicable methodology.
Consistency Between the QA/QC established by the Project Participants in the PD:	QA/QC procedures are in line with proposed procedures on PD-MR
Conclusion:	<p>Calculation of the parameter was correctly addressed as the audit team confirmed. Furthermore, PP correctly applied procedures defined on PD-MR/1/. In addition, data related to the parameter has been correctly collected and kept by the project; furthermore, information provided by the equipment (flow meter) has been correctly taken into account for calculation procedures.</p> <p>Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.</p>

5.Parameter:	$W_{CH_4,y}$
Description:	Methane content in biogas in the year “y”
Value:	The values of $W_{CH_4,y}$ can be found in the calculation file /2/ and PD-MR /1/.

<p>Used Equipment:</p>	<p>Biogas Check Portable Digital Analyzer from Geotech/Landtech. Accuracy CH4: <math>\pm 1.5</math> °C or 0,25%</p> <ul style="list-style-type: none"> <li>• CH4: <math>\pm 0.5\%</math> from 0-5% CH4 content; <math>\pm 1.0\%</math> from 5-15% CH4 content; <math>\pm 3.0\%</math> from 15%-full scale CH4 content</li> <li>• Temperature: <math>\pm 0.20</math>C (Biogas check analyzer accuracy) <math>\pm 0.50</math>C (temperature probe accuracy)</li> <li>• Pressure: <math>\pm 4</math>mbar typically and <math>\pm 15</math> mbar maximum</li> </ul> <p>Equipment is described in section 5.2 PD-MR/1/, MR/2/.</p>
<p>Source of Data and Frequency:</p>	<p>Data is collected in accordance to the sampling plan by the Regional Technician as set out mandatory on methodological tool. Data is collected through a Portable Gas Analyzer and reported in form 04.001 /18/ at the suitable monitoring frequency: monthly. Since methodology /3/ requires that parameter WCH4,y to be measured with the confidence level defined on PD-MR /1/ , PP measured the parameter assuring the required confidence level as well as in accordance with the sampling methods required /22/.</p> <p>Monthly measured methane (According with the data/parameter table 6 of the methodology AMS III.D version 21.0 /3/), content (<math>W_{CH4,y}</math>) is taken as <math>f_{V_{CH4,RG,h}}</math> (average). This approach is considered to be accurate when calculating <math>PE_{flare,y}</math> since the monthly monitored <math>W_{CH4,y}</math> (measured on wet basis) assures a 90% confidence and 10% precision level in the methane concentration measurement. As assessed on the Sampling Plan /12/</p>
<p>Data Cross Checking:</p>	<p>Data collected and reported through calculation file /2/ was crosschecked against Form 04.001 /18/ provided for the verification process and regarding all of the project sites, therefore assuring the integrity of data available for the monitoring period. No differences were found between stated figures within the different data sources.</p>
<p>Consistency Between the QA/QC defined in the Methodology:</p>	<p>QA/QC is in line with requirements determined by the applicable methodology /3/ when measuring with a 90% confidence level the parameters <math>W_{CH4,y}</math> and <math>f_{V_{CH4,RG}}</math>. The audit team verified the data collection is in line with the confidence level required /3/ and stated /1/</p>
<p>Consistency Between the QA/QC established by the Project Participants in the PD:</p>	<p>QA/QC activities were carried out as defined on PD-MR as well as monitoring plan and, as required by methodology /3/. The audit team performed interview with the personnel on charge of the QA/QC procedures In order to verify the consistency with the procedures.</p>
<p>Conclusion:</p>	<p>The parameter has been measured consequently with mandatory requirements as well as stated on PD-MR/1/, therefore the overall conclusion is that the project activity complies with measurement requirements. Data collection is also reliable and calculations using these data have been taken adequately. Lastly the application of the sampling plan /12/ is in accordance with the methodological requirements for</p>

	<p>sampling /24/ the methane content of the biogas described in the applicable methodology /3/ /4/52/ and POP 5/36. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.</p>
--	--

<b>6.Parameter:</b>	<b>T<sub>biogas</sub></b>
Description:	Temperature of the biogas at ambient conditions
Value:	The values of T <sub>biogas</sub> can be found in the spread-sheet calculation file /2/ and PD-MR /1/
Used Equipment:	Biogas Check Portable Digital Analyser from Geotech/Landtech. Accuracy Temperature: ± 0.2°C (Biogas check analyser accuracy) ± 0.5oC (temperature probe accuracy) /11/. Equipment is described in section 6.1 of PD-MR/1/, MR/2/.
Source of Data and Frequency:	Data is collected in form 04.001 /18/ and the monitoring frequency is monthly by the regional technician as verified by the audit team through telephonic interview. Since methodology AMS III.D version 21.0 /3/ requires that parameter WCH <sub>4,y</sub> be measured with a 90/10 confidence level, PP correctly designed and applied a sampling plan /12/, the one was developed by using the “Guidelines for sampling and survey” /21/.
Data Cross Checking:	Data collected and reported through calculation file /2/ was crosschecked against Form 04.001 /18/ provided for the verification process and regarding all of the project sites, therefore assuring the integrity of data available for the monitoring period. No differences were found between stated figures within the different data sources.
Consistency Between the QA/QC defined in the Methodology:	QA/QC activities were carried out as defined on PD-MR/1/ as well as monitoring plan and, as required by methodology /3/ and Guidelines for sampling /21/. The audit team performed interview with the personnel on charge of the QA/QC procedures in order to verify the consistency with the procedures.
Consistency Between the QA/QC established by the Project Participants in the PD:	QA/QC activities were carried out as defined on PD-MR as well as monitoring plan and, as required by methodology /3/.
Conclusion:	<p>The parameter has been measured consequently with mandatory requirements as well as stated on PD-MR /1/, MR/2/, therefore the overall conclusion is that the project activity complies with measurement requirements. Data collection is also reliable and calculations using these data have been taken adequately and is used th- POP-05 - at the Brascarbon Operational Procedure Manual.</p> <p>Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data</p>

	for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.
--	---

7.Parameter:	D <sub>CH<sub>4</sub>,y</sub>
Description:	Density of the methane combusted
Value:	<p>The values of the parameter can be found in the calculation file /2/ and MR /1/. Used formula:</p> $D_{CH_4,y} = \frac{P_n}{\frac{R_u}{MM_{RG,h}} \times T_n}$ <p>DCH<sub>4</sub>,y: Density of methane in the biogas (kg/m<sup>3</sup>) P<sub>n</sub>: Pressure of biogas (Pa) R<sub>u</sub>: Universal Gas Constant (8314 Pa.m<sup>3</sup>/Kmol.K) MMRG<sub>h</sub>: Molecular mass of methane (16.04 kg/kmol) T<sub>n</sub>: Biogas temperature (K)</p>
Used Equipment:	Not applicable
Source of Data and Frequency:	POP 07.001 /31/ states the monitoring procedure and data regarding pressure and temperature are collected with the frequency determined in the sampling plan /12/, the one is in line with the sampling and survey framework /21/ /24/.
Data Cross Checking:	Formulae used in the calculation file /2/ was crosschecked against mandatory formulae stated in the methodological tool /4/ finding compliance and coherent use of formulae.
Consistency Between the QA/QC defined in the Methodology:	Both, calculation and data collection for calculation were done applying requirements set out on the applicable methodology /3/.
Consistency Between the QA/QC established by the Project Participants in the PD:	QA/QC procedures applied are in line with provisions on PD and applicable requirements.
Conclusion:	Methane density was correctly calculated by PP, applying the and methodological tool /4/ and according to POP 07/31.

8.Parameter:	FE (η <sub>flare,h</sub> )
Description:	Enclosed Flare Efficiency
Value:	80% (if all the conditions below are met).The values of the parameter can be found in the spread sheet calculation file /2/, /1/, MR/2/..
Used Equipment:	Enclosed Flare, is used in the entire project in addition a thermocouple
Source of Data and Frequency:	<p>Every 1 minute measurement and registration by a CLP of flare temperature and biogas flow rate. Data is recovered monthly for Flare Efficiency hourly calculation.</p> <p>Enclosed flare (low height) is used in the entire project.</p> <p>Brascarbon registers the gas flow sent to the flares and the combustion temperature of the flares every minute.</p> <p>According to the methodology /3/ and Tool 6 /4/: the PP selected option A of tool 6 as follow:</p>

	<p>A 80% efficiency for a specific hour is considered if the following conditions are met for all minutes in that specifiers:</p> <ul style="list-style-type: none"> <li>(i) all temperature records are above or equal to 500o Celsius and</li> <li>(ii) the temperature of the flare (TEG,m) and the flow rate of the residual gas to the flare (FRG,m) are within the manufacturer's specification for the flare (SPECflare).</li> <li>(iii) The flame is detected in minute m (Flamem).</li> </ul> <p>Otherwise, a 0% efficiency for the specific hour is applied if at any minute the records of temperature measurement are below 500o Celsius or the flare is operating outside of the manufacturer's specification (SPECflare).</p> <p>This discount will be applied to the volume of that specific hour since it is a more conservative approach than to discount in the average of the flare efficiency percentage for any giving hour.</p> <p>Information related to flare efficiency of each hour for 24 hours per day is registered on the form 08.001 /20/ and obtained through a macro applied to form 01.001 /15/ (temperature and biogas volume registered minute by minute, data stored in the PLC). The hourly flare efficiency is compounded monthly for emission reduction calculation through monthly weighted average that takes into consideration the number of hours that the flare has operated in each different condition (80%, 50%, 0%).</p>
<p>Data Cross Checking:</p>	<p>As part of the verification activities, the verification team assessed the form 08.001 /20/ of each project site of the proposed project activity; this is to say: the audit team verified each and every hour covering the monitoring period. Data aggregated was crosschecked against data used on calculation file /2/, finding no differences between stated figures.</p> <p>The audit team verified that during the first control period the flare mainly operated within the range of the manufacturer's specifications and when it was below 500°C the VCUs were discounted as indicated in paragraph 18 of tool 6./4/.</p>
<p>Consistency Between the QA/QC defined in the Methodology:</p>	<p>PP took into account applicable requirements as well as registered PD-MR /1/ and performed QA/QC according to applied methodology /3/ and the Tool 06 version 4 /4/. The verification process included a dully assessment on flare temperature records /18/, finding PP correctly applied methodology, those periods of time where temperatures were lower than 500 °C, and therefore 0% flare efficiency, were not claimed by the project as emission reductions. Consequently, all data and parameters that are required to monitor the flare operation within the range of operating conditions according to manufacturer`s specifications were continuously monitored according to the methodology requirements.</p> <p>Taking into account that the methodology defines in its tool 6/4 the justification for the use of this parameter to determine the combustion efficiency of the FE, the PP selected option A: default value and paragraphs 21, 22 and 23 which state</p>

	<p>that:...." The flare efficiency for minute m (flare,m) is 90% when the following two conditions are met to demonstrate that the flare is operating:</p> <p>(a) The flare temperature (TEG,m) and the waste gas flow rate to the flare (FRG,m) are within the 'manufacturer's operating specifications for the flare (SPECflare) at minute m; and</p> <p>(b) Flame is detected at minute m (Flamem).</p> <p>22. Otherwise, flare,m is 0%.</p> <p>23. For enclosed flares that are defined as low flare, the flare efficiency will be adjusted, as a conservative approach, by subtracting 10 percentile" points..." For this reason, and although it meets the above conditions, the PP conservatively applied this parameter in that the default applied value is 80%, "instead of 90%."</p> <p>Since manufacturer specifications /11/ have been presented by PP which stated: "system is made to the natural flow of biogas, which works under atmospheric pressure, without forced ventilation systems for biogas once the flare is designed and customized for each farm working exclusively with the atmospheric pressure". The monitoring equipment has been put in operation and, the verification team assesses all relevant information related to the parameter, it is concluded the parameter has been correctly monitored and determined and it follows the proposed monitoring plan described at the revised and approved PD.</p>
<p>Consistency Between the QA/QC established by the Project Participants in the PD:</p>	<p>Q/A/QC included maintenance (replacement) procedures as described on PD, therefore there is consistency for the QA/QC procedures.</p>
<p>Conclusion:</p>	<p>The overall conclusion is that PP correctly determined parameter "Flare Efficiency" on the basis of a reliable data collection system. Furthermore, the parameter measurement methods and calculation follow requirements set out in the methodology and tool /3/ /4/. Since the equipment is operated according to manufacturer's specifications the audit team confirms that, measurements and flare efficiency parameter are reliable and in monitored in accordance with all the requirements and specifications. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed. These forms are based on the company's Operational Procedures (POP).</p>

<b>9.Parameter:</b>	<b>QDM</b>
Description:	Sludge soil application
Value:	N/A. Sludge was not removed during this monitoring period.
Used Equipment:	Not Applicable
Source of Data and Frequency:	Sludge Soil Application will be reported through form 09.001 and POP 09/33. Nevertheless, at the moment the project activity has not carried out any sludge application as verified by the lead auditor.
Data Cross Checking:	Not Applicable since there has not been sludge applied, the audit team did verify no sludge application has taken place within the project boundaries.
Consistency Between the QA/QC defined in the Methodology:	Not Applicable since there has not been sludge applied.
Consistency Between the QA/QC established by the Project Participants in the PD:	Not Applicable since there has not been sludge applied.
Conclusion:	By the time the verification process was carried out no sludge application was confirmed by the PP, for this reason the parameter has neither been measured nor reported for this monitoring period.

<b>10.Parameter:</b>	<b><math>W_{site}</math></b>
Description:	Average animal weight of a defined livestock population at the project site
Value:	The values of $W_{site}$ can be found in the calculation file /2/ in the folder Bey ex-post – Pey ex-post, and PD-MR /1/, MR/2/.
Used Equipment:	Not Applicable
Source of Data and Frequency:	The data collection is carried out quarterly by each project site owner and is provided to PP in order to be incorporated in the GHG emission reductions calculations. The quarterly weight of the animals for each producer of the PD-MR is made following internal procedures of each farm and is not under the PP's control. Nevertheless the producers (project site owners), weight animals on a 100% basis since all animals arriving the farm are weighted in order to determine animal production variables, used for production purposes. More important, animals are weighted one again when sold, replaced or transferred. The animal weight data is collected on Brascarbon form 16.001 /30/ after a crosscheck by the PP, using the information collected on-site when each batch of animals leaves each farm; the template was designed to quarterly report animal weight per category (based on sampling following ASSUGLORIA (Associação de Suinocultores de Gória de Dourados) and provided to the PP. ASSUGLORIA is the Pig Producers Association to whom the farms contained in the PD are associated. its main role is to act as a third party responsible for the assurance of all the logistics associated with the swine producers, providing the animal nutrition, genetics and all the overall animal weight.

<p>Data Cross Checking:</p>	<p>Reported data was verified by comparing different figures of calculation file /2/ and raw data on form 16.001 /30/, finding no differences between figures.</p> <ul style="list-style-type: none"> <li>• Pig standard weights, available on the website: <a href="https://www.embrapa.br/documents/1355242/0/Curso+Su+inocultura+-+Apostila.pdf">https://www.embrapa.br/documents/1355242/0/Curso+Su+inocultura+-+Apostila.pdf</a>. Source: EMBRAPA Empresa Brasileira de Pesquisa Agropecuária (as in English: Agricultural Research Brazilian Corporation) allowing a crosscheck of the values provided in the form 16.001, used for the monitoring and control of the parameter Wsite,</li> <li>• Purchase records /28/ are provided as part of the support documents.</li> <li>• Livestock inventory – form 03.003/17 per site</li> </ul> <p>Through the above primary and secondary sources, PP and VVB confirm the consistency between the reported Wsite values and the indirect information, in line with the methodological framework /3/. Therefore, values presented by the PP are crosschecked both with literature values (EMBRAPA) as well as the real swine production when each batch of each farm is sold assuring the required consistency.</p>
<p>Consistency Between the QA/QC defined in the Methodology:</p>	<p>Data collection and its subsequent use for calculations follows requirements set out on applicable methodology /3/.</p> <p>ICONTEC confirmed, based on interviews that the data collection is carried out quarterly per year by ASSUGLORIA (following the association’s internal procedures) to the PP are cross-checked against two different credible sources:</p> <ul style="list-style-type: none"> <li>- reference figures from EMBRAPA (an undisputed Brazilian Agricultural Research Corporation nationally recognized for the these scope) for each category; and</li> <li>- the figures provided by ASSUGLORIA when each of the swine batches exits each farm (each batch stays around 5 to 6 months per farm), as explained below. Here FAZENDAS provides with 100% of the animals weight (and number), allowing a full cross-check with the weight values provided and assuring all the information is accurate.</li> <li>- The Project Proponent (PP) has complied with the guidance set forth in methodology AMS-III.D. version 21, which states that monitoring must reflect the actual conditions and operational practices of the project. In this case, the project comprises 10 sites or farms, and of these, only one site – Lote 23 Quadra 27 - SITE ID BCA-323MS1-19 – includes a full production cycle, as defined in the PD and MR. The remaining nine sites operate exclusively as swine finishing units.</li> </ul> <p>It is important to highlight farm owners rely on the quality of the values measured weights since their sole professional occupation is the pig production and, therefore, it is within their best interests to have a correct and reliable way to assess the weighting of the animals based on their experience and internal procedures(POP- 16).</p>

<p>Consistency Between the QA/QC established by the Project Participants in the PD:</p>	<p>QA/QC is performed as described in the PD-MR; PP correctly measured the actual animal weight at the various project sites.</p>
<p>Conclusion:</p>	<p>PP correctly measured, reported and usage data for calculations on the matters of the parameter <math>W_{site}</math>, In addition QA/QC procedures follow applied methodology /3/ and provisions on PD-MR</p> <p>Monitoring of the parameter was monitored in accordance with the revised PD -MR and therefore, calculation method as well as frequency were pre-determined on revised monitoring plan and performed accordingly for the verification period. Data collection is carried out quarterly by each farm owner and provided to the PP.</p> <p>The business as usual practice of swine production is that each farm performs regular and periodical weighting activities in order to adjust animal nutrition, health issues and general growing conditions. Weight data is required swine operations such as the ones featured on the project sites. Farm owners rely on the quality of the values measured since their sole professional occupation is the pig production and it is within their best interests to have a correct and reliable way to assess the weight of the animals based on their experience and internal procedures.</p> <p>The audit team can confirm the consistency between the reported <math>W_{site}</math> values and the indirect information, in line with the paragraph 36 (a) of the methodology AMS-III.D /3/. Therefore, values presented by the PP are crosschecked both with literature values (EMBRAPA) as well as the real swine production when each batch of each farm is sold assuring the required consistency of the methodology AMS-III.D Version 21.0.</p> <p>The audit team confirmed and verified that figures of parameter <math>W_{site}</math> considered in the monitoring report are in line the reference figures, the exit values of each batch and that all values are within the admissible weight difference. Therefore, in conclusion, the parameter has been correctly assessed and was monitored in accordance with the revised monitoring plan available in the revised PD-MR /1/, MR/2/.</p> <p>Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.</p>

<p>11.Parameter:</p>	<p><math>ER_{y,ex-post}</math></p>
<p>Description:</p>	<p>Ex-post emission reductions achieved by the project activity based on monitored values for the year “y”.</p>
<p>Value:</p>	<p>The values of <math>ER_{y,ex-post}</math> can be found in the spread-sheet calculation file /2/ and PD-MR /1/, MR/2/.</p>

Used Equipment:	Not Applicable. No direct use of equipment
Source of Data and Frequency:	The parameter is calculated on the basis of all collected data. As it was verified, PP uses formula provided on methodology ( $ER_{y,ex-post} = \min[(BE_{y,ex-post} - PE_{y,ex-post}), (MD_y - PE_{power,y,ex-post})]$ ), in order to calculate the parameter on a yearly basis. Ad in accordance with the methodology /3/.
Data Cross Checking:	<p>Figures of Baseline emissions (<math>BE_{y,ex-post}</math>), project emissions (<math>PE_{y,ex-post}</math>) and methane captured and destroyed (<math>MD_y</math>) Reported on MR and CERs calculation file /3/ were assessed as part of the desk review activities. The assessment involved a review of the raw data necessary to calculate the parameter. Further in this verification report calculations and its verification will be presented.</p> <p>On its turn <math>PE_{y,ex-post}</math> calculations were verified by crosschecking them against records collected on each and every project site. In addition, calculation file provided /6/ was assessed in order to verify compliance with PD and applicable methodology /3/.</p>
Consistency Between the QA/QC defined in the Methodology:	QA/QC activities are in line with the applicable methodology /3/.
Consistency Between the QA/QC established by the Project Participants in the PD:	During the monitored period QA/QC activities have been carried out in accordance to PD.
Conclusion:	Emission reductions calculation comply with mandatory requirements set out on methodology AMS-III.D version 21.0, applicable tool, and revised PD-MR /1/, MR/2/, including the revised monitoring plan for the validation and verification period. The Monitoring operational procedure POP-17/42. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.

<b>12.Parameter:</b>	<b>FFR</b>
Description:	Formulated feed rations
Value:	Not applicable
Used Equipment:	Not Applicable
Source of Data and Frequency:	Data provided on form 14.001 /14/ (internal control document) was crosschecked by the audit team against records of animal feed rations /22/.
Data Cross Checking:	Information provided on PD-MR, and support documents /1//22/
Consistency Between the QA/QC defined in the Methodology:	Keeping records and supplier evidence are in line with methodology /3/ requirements.
Consistency Between the QA/QC established by the Project Participants in the PD	PP followed proposed QA/QC procedures on PD, therefore the QA/QC procedure complies with pre-established.

Conclusion:	<p>The parameter has been monitored adequately and in accordance to the monitoring plan and the PD-MR /1/, MR/2/; furthermore, information provided by PP is consistent with the secondary information sources used to verify the information. Lastly the technical expertise of the audit team allowed concluding formulated feed rations have been implemented in order to acquire an stable productive cycle in terms of the number the animals are present in the farms. Formulated feed rations allow to standardize the swine productive system being nutritional therefore balanced rations the basis of modern animal production systems.</p> <p>(See also updated VS<sub>default</sub> parameter in MR/2/)</p>
-------------	---

<b>13.Parameter:</b>	<b>P<sub>biogas</sub></b>
Description:	Pressure of the biogas at operation conditions
Value:	The values of P <sub>biogas</sub> can be found in the spread-sheet calculation file /2/ and PD-MR /1/, MR/2/.
Used Equipment:	Biogas Check Portable Digital Analyzer from Geotech/Landtech. Accuracy. Pressure: ± 4mbar typically and ±15 mbar maximum. Equipment is described in section 6.1/1/
Source of Data and Frequency:	Data is periodical collected in form 04.001 /18/ and the monitoring frequency is monthly by the regional technician as verified by the audit team through telephonic interview. Since methodology /3/ requires that parameter W <sub>CH<sub>4</sub>,y</sub> be measured with a 90% confidence level, based on the statistical analysis performed to determine methane concentration according to the characteristics of data /23/, calibration records of the gas analyzer /31/ the one is in line with methodology /3/.
Data Cross Checking:	Data provided through calculation file /2/ was crosschecked against Form 04.001 for every project site. No differences were found between stated figures on different data sources. Data was also crosschecked against records available on each project site.
Consistency Between the QA/QC defined in the Methodology:	QA/QC is in line with requirements determined by the applicable methodology /3/ and Measurement according with Operational Procedure POP-13 /34/.
Consistency Between the QA/QC established by the Project Participants in the PD:	QA/QC activities were carried out as defined on PD-MR as well as approved monitoring plan and, as required by methodology /3/.
Conclusion:	The parameter has been measured consequently with mandatory requirements as well as stated on PD-MR /1/, MR/2/, therefore the overall conclusion is that the project activity complies with measurement requirements. Data collection is also reliable and calculations using these data have been taken adequately. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.

<b>14.Parameter:</b>	<b>GENETIC SOURCE</b>
Description:	Genetic source from annex I party
Value:	Western Europe genetic
Used Equipment:	Not Applicable
Source of Data and Frequency:	Genetic source is internally reported (every project site reports) by using form 15.001 /27/. The frequency annually
Data Cross Checking:	Information provided by PP /27/ was crosschecked against support documentation provided /28/.There were no differences among reported information
Consistency Between the QA/QC defined in the Methodology:	Support letter confirms genetic source of each producer /25/ according to Operational Procedure POP-15 /24/. In addition, there is consistency between procedures and provisions on Methodology /3/.
Consistency Between the QA/QC established by the Project Participants in the PD:	Procedures for the monitoring period of reference are in accordance with PD-MR/1/.
Conclusion:	Genetic source is the adequate for the project activity as verified while carrying out the Desk Review stage, furthermore animal genetic supplier confirmed through a letter /25/ genetic source. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.

<b>15.Parameter:</b>	<b>MS%<sub>i,y</sub></b>
Description:	Fraction of manure handled in system “i”, year “y”.
Value:	1 (100%)
Used Equipment:	Not Applicable
Source of Data and Frequency:	Information related to the manure fraction handled is described on form 02.001 /16/; the actual fraction is monitored on annually based on daily measurement and monthly aggregation
Data Cross Checking:	Information provided on PD- MR /1/, MR/2/. was assessed thanks to interview with relevant personnel evidence suggesting a different fraction of the manure is handled; in fact, manure collection system handles a 100% all over the project sites.
Consistency Between the QA/QC defined in the Methodology:	Procedures are in line with applicable methodology /3/.
Consistency Between the QA/QC established by the Project Participants in the PD:	Site visit inspections are carried out by PP as determined on PD /1/.
Conclusion:	Percentage of manure handled has been correctly determined by PP. On the other hand, the verification process, allowed the lead auditor to state that the figure of 100% is accurate. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data

	for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.
--	---

<b>16.Parameter:</b>	Nda,y
Description:	Number of days animal is alive in the farm, in year “y”
Value:	The values Nda,y can be found in the calculation file /2/ - same parameter NLT,y
Used Equipment:	Not Applicable
Source of Data and Frequency:	The animal inventory records are kept in formulario 03.003 /17/. The actual figure of animals at each of the project sites is done monthly. PCL provides monthly reports using form 03.003 and 03.001 (Animal control system form) /17/, the form 03.003 (summarized in form 03.001) presents the records regarding livestock entrance and exits (such as purchase, births, internal transfer, sales, deaths, internal transfer); this information helps to determine the number of days the animals are alive in each farm. The Recording frequency is annually, based on monthly records: data aggregation and recording is done monthly by the owner or manager of each farm. Calculation and reporting are made on the Brascarbon Monitoring Report System. The audit team verified all files provided by PP and related to animal figures. Files are listed on reference section as /17/.
Data Cross Checking:	Information provided on excel files of the form 03.001 /17/, were crosschecked by comparing figures on Calculation file /2/ as well as livestock inventory stated in the MR
Consistency Between the QA/QC defined in the Methodology:	The calculation procedure as the QA/QC measures taken by PP are in accordance with requirements.
Consistency Between the QA/QC established by the Project Participants in the PD:	QA/QC measures taken by PP for the different project sites are in line with proposed QA/QC measures described on PD-MR/1/,/2/.
Conclusion:	The overall conclusion is that PP correctly applies the parameter, taking into account data collection and reporting. In addition, QA/QC procedures agree with proposed procedures on PD. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed. These forms are based on the company’s Operational Procedures (POP).

<b>17.Parameter:</b>	$N_{p,y}$
Description:	Number of animals produced annually of type “LT” in year “y”
Value:	The values $N_{p,y}$ can be found in the calculation file /2/
Used Equipment:	Not Applicable
Source of Data and Frequency:	The animal inventory records are kept in formulario 03.003. The actual figure of animals at each of the project sites is done monthly (Annually, based on monthly records). PCL provides monthly reports using form 03.003 and 03.001 (Animal control system form) /17/, the form 03.003 (summarized in form 03.001) presents the records regarding livestock entrance and exits (such as purchase, births, internal transfer, sales, deaths, internal transfer, among others); this information helps to determine the number of days the animals are alive in each farm. Data aggregation and recording is done monthly by the owner or manager of each farm. Calculation and reporting are made on the Brascarbon Monitoring Report System. The audit team verified all files provided by PP and related to animal figures. Files are listed on reference section as /17/.
Data Cross Checking:	Information provided on excel files of the form 03.001 /17/, were crosschecked by comparing figures on Calculation file /2/ as well as livestock inventory stated in the MR
Consistency Between the QA/QC defined in the Methodology:	The calculation procedure as the QA/QC measures taken by PP are in accordance with requirements.
Consistency Between the QA/QC established by the Project Participants in the PD:	QA/QC measures taken by PP for the different project sites are in line with proposed QA/QC measures described on PD The same parameter $N_{LT,y}$ and MR/2/.
Conclusion:	The overall conclusion is that PP correctly applies the parameter, taking into account data collection and reporting. In addition, QA/QC procedures agree with proposed procedures on PD-MR/1/ MR/2/. Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.

<b>18.Parameter:</b>	$nd_y$
Description:	Number of days in year “y” where the treatment plant was operational
Value:	The values of $nd_y$ can be found in the calculation file /2/ and PD-MR/1/, MR/2/.
Used Equipment:	Not Applicable since the parameter is calculated.
Source of Data and Frequency:	The parameter is calculated on a monthly basis (Annually, based on daily records and monthly aggregation). Aggregate information is kept on form 08.001 /20/ as a result of the PLC data collection. Parameter figure is used for calculations on calculations file /2/.

Data Cross Checking:	Reported figures for the different project sites were crosschecked against form 08.001 /20/ in order to verify the total hours of operation of the equipment, finding no significant disturbance such as stops for installation of equipment, ending of productive cycles, among others.
Consistency Between the QA/QC defined in the Methodology:	<p>PP monitored the parameter as requested on the applied methodology /3/.</p> <p>In compliance with applicability condition 3(c) of methodology AMS-III.D version 21<sup>16</sup>, the Project Proponent (PP) confirms that the project site presents suitable climatic conditions for anaerobic methane generation in the baseline scenario.</p> <p>Specifically, meteorological data obtained from IMASUL and INMET/58/ for the project location indicate that the minimum monthly average temperature remains above 5 °C throughout the year, which supports the validity of the methodology's applicability condition.</p> <p>Based on this, it is appropriate to consider <math>n_{dy} = 365</math>, as methane would be continuously generated in the absence of the project activity. This assumption aligns with paragraph 16(c) of AMS-III.D v.21.</p> <p>It is important to highlight that the project focuses on methane recovery and destruction through biogas flaring systems, and the emission reductions are based on actual monitored destruction of methane. Nonetheless, to fully comply with the methodology, the MR has been updated to include this temperature justification in Section 4.2</p>
Consistency Between the QA/QC established by the Project Participants in the PD:	The QC officer as defined on PD verifies calculations.
Conclusion:	<p>The parameter was monitored in accordance with the approved PD-MR /1/, MR/2/as well as required by the applicable methodology /7/.lcontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.</p> <p>See the complementary information in the following INMET charts, which can be found at the end of section 5.2</p>

<b>19.Parameter:</b>	<b>VS<sub>LT,y</sub> (SVS<sub>JLT,y</sub>)</b>
Description:	Volatile solids for livestock LT entering the animal manure management system in year y
Value:	The values of the parameter can be found in the calculation file /6/. in the folder BEy ex-post – PEy ex-post. and PD-MR /1/, MR/2/.
Used Equipment:	Not applicable since the parameter is calculated
Source of Data and Frequency:	Annually

<sup>16</sup> See the complementary information in the following INMET charts, at the end of section 5.2

Data Cross Checking:	The parameter was assessed in the calculation file /2/ and the figures needed for the calculation are verified. Animal weight, VS default according to animal category and the number of days the treatment plant is operational are verified.
Consistency Between the QA/QC defined in the Methodology:	PP calculated the parameter as requested on the applied methodology /3/, using figures applicable to developed countries.
Consistency Between the QA/QC established by the Project Participants in the PD:	The QC officer as defined on PD verifies calculations. QA/QC activities were carried out as defined on PD as well as approved monitoring plan and, as required by methodology /3/. and the PP internal procedure POP 14 /14/, Form 02.001 /16/.
Conclusion:	<p>The verification team assessed the calculations and assumptions of the calculation of the parameter. The fact the animal production system makes use of formulated feed rations in accordance with animal category and, the animal genetics is closer to the expected genetics of developed countries makes the calculation of the parameter accurate. Lastly, the animal weights monitored allow as well the use of the methodological choice defined by the PP for the project. The overall conclusion is that the proposed project activity correctly calculates the parameter in order to calculate the total volatile solids entering the system and therefore, the emission reductions calculated on the basis of the parameter are correctly stated.</p> <p>Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed.</p>

<b>20.Parameter:</b>	<b>Flame<sub>m</sub></b>
Description:	Flame detection on flare in the minute m
Value:	Figures reported on form 08.001 /20/ Ultraviolet flame sensor Model C7035
Used Equipment:	Enclosed flare
Source of Data and Frequency:	Monitoring system Brascarbon - Once per minute. Flame detection of flare in the minute m ON/OFF
Data Cross Checking:	The flame detection was crosschecked against form 01.001 "Tabela de dados" of each project with the combustion temperature of the flare /15/
Consistency Between the QA/QC defined in the Methodology:	Calibration procedures and frequencies /27/ /28/29/ /32/ as well as maintenance activities /19/

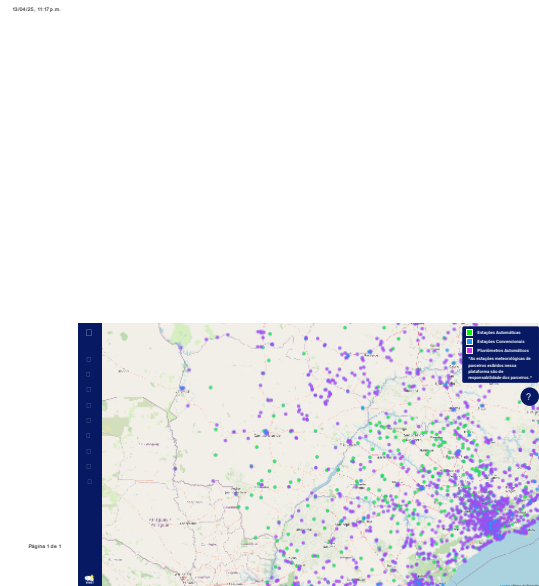
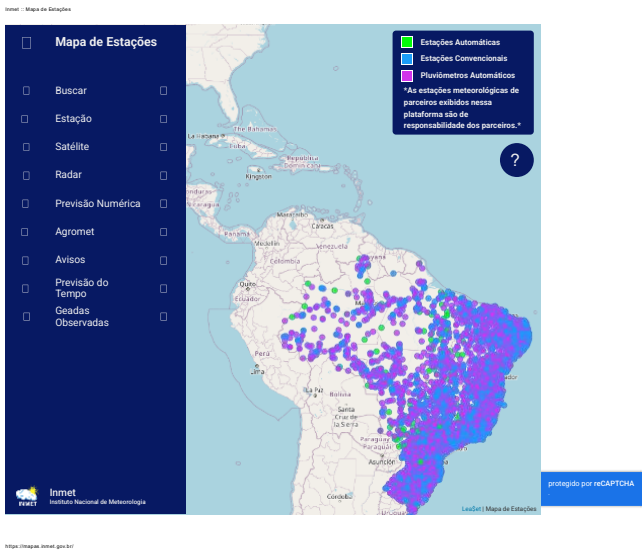
<p>Consistency Between the QA/QC established by the Project Participants in the PD:</p>	<p>Continuous monitoring of operational conditions within the manufacturers' specifications and maintenance (maintenance procedures are stated on form 02.001 /16/)</p>
<p>Conclusion:</p>	<p>The flame detection is assured by following POP 08 as the verification team assessed data collected on form 08.001 /23/ and ER /6/.</p> <p>Icontec confirms that each and every base form used by Brascarbon at each project site, along with the baseline data for information analysis related to the use and monitoring of this parameter for the project, have been reviewed. These forms are based on the company's Operational Procedures (POP).</p>

**18. Parameter nd<sub>y</sub> Number of days in year “y” where the treatment plant was operational**

Below are some excerpts related to the average ambient temperature in the region of Mato Grosso do Sul, with emphasis on Jataí and Dourados, based on data from the nearest automatic weather stations installed by INMET to the project's area of influence./58/.

This is attached as a complement to the response submitted to Verra to explain the compliance by the Project Proponent (PP) with respect to this parameter. The information has already been adjusted in both the Monitoring Report (MR) and the response document to the March 2025 requests. Additionally, supporting documents related to this data record are included in a separate annex.

- <https://portal.inmet.gov.br>
- <https://mapas.inmet.gov.br/#>
- <https://es.weatherspark.com/map?id=29524&pageType=7&yearNumber=2025>



**Two stations linked to the project:**

Weather stations of Jataí and Dourados, located within the project's area of influence. Reports include tables and screenshots from 2023 and 2025(Excerpts related to agroclimatic conditions), as well as the full information available in project files or on the INMET websites.

Table from Jataí station – 2023

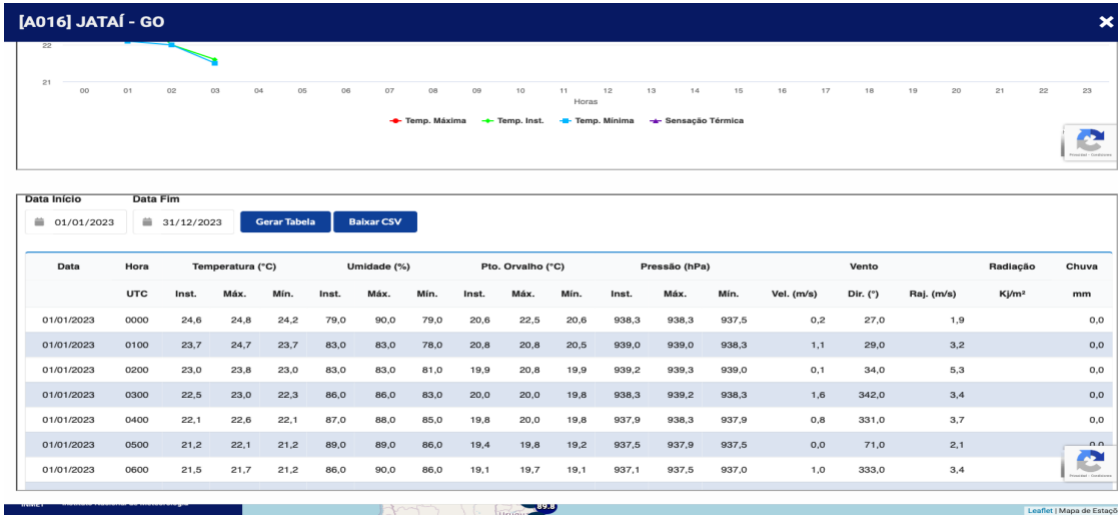
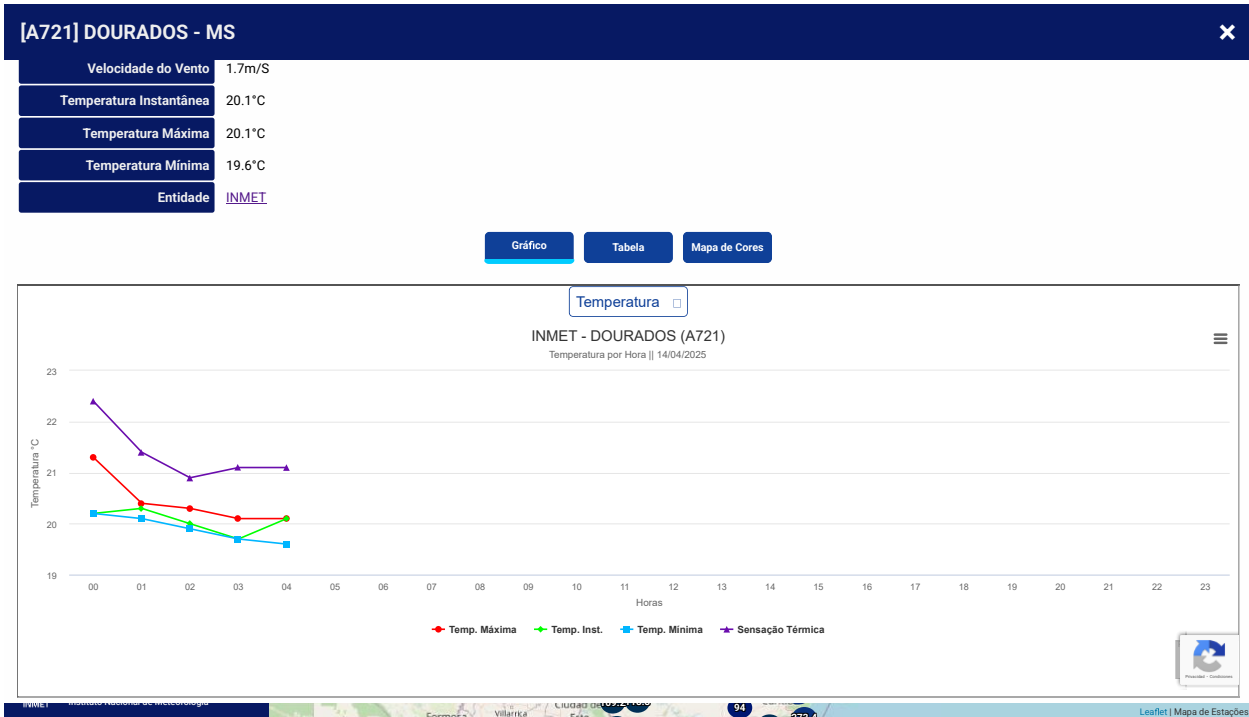


Table from Jataí station – 2025



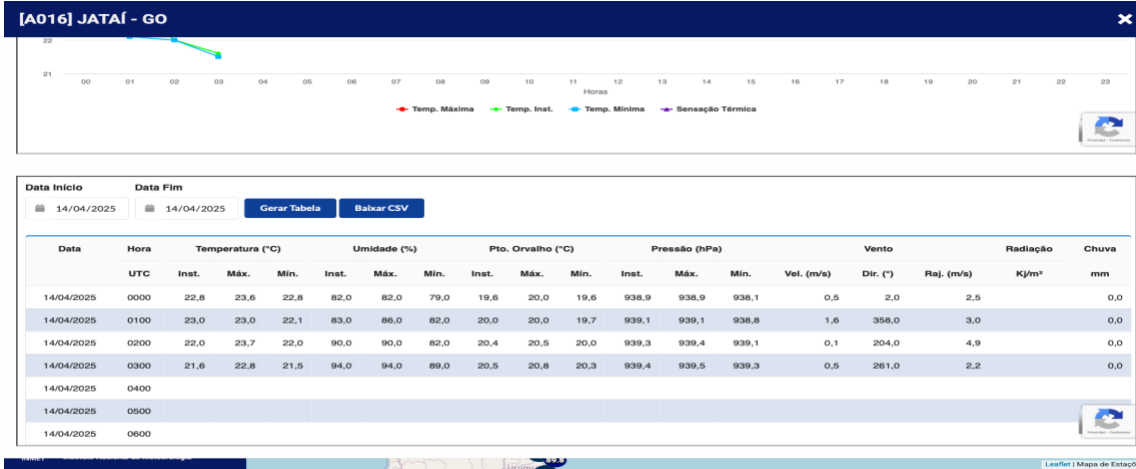


Table from Dourados station – 2023, Excerpts related to agroclimatic conditions

Data	Hora	Temperatura (°C)			Umidade (%)			Pto. Orvalho (°C)			Pressão (hPa)			Vento		Radiação	Chuva	
	UTC	Inst.	Máx.	Min.	Inst.	Máx.	Min.	Inst.	Máx.	Min.	Inst.	Máx.	Min.	Vel. (m/s)	Dir. (°)	Raj. (m/s)	KJ/m²	mm
01/01/2023	0000	25,8	27,8	25,8	81,0	81,0	68,0	22,2	22,2	21,5	957,9	957,9	957,0	1,5	189,0	4,8		0,0
01/01/2023	0100	26,1	26,4	25,7	78,0	82,0	77,0	22,0	22,5	22,0	958,7	958,7	957,8	1,5	202,0	3,4		0,0
01/01/2023	0200	25,5	26,2	25,4	80,0	81,0	78,0	21,8	22,1	21,8	959,0	959,1	958,7	1,6	229,0	3,3		0,0
01/01/2023	0300	25,0	25,7	25,0	82,0	83,0	79,0	21,7	21,9	21,7	958,7	959,0	958,6	1,5	206,0	4,1		0,0
01/01/2023	0400	24,6	25,2	24,5	82,0	83,0	81,0	21,4	21,7	21,4	958,0	958,6	958,0	1,8	212,0	4,8		0,0
01/01/2023	0500	23,7	24,6	23,2	87,0	88,0	82,0	21,5	21,5	20,9	957,4	958,0	957,3	1,2	190,0	4,5		0,0
01/01/2023	0600	23,6	23,8	23,3	87,0	89,0	87,0	21,4	21,6	21,3	957,0	957,4	957,0	1,5	203,0	4,4		0,0
01/01/2023	0700	22,5	23,6	22,4	92,0	92,0	87,0	21,1	21,4	20,9	957,3	957,3	957,0	0,7	202,0	3,5		0,0
01/01/2023	0800	22,7	22,7	22,5	91,0	92,0	91,0	21,2	21,3	21,1	957,2	957,3	957,2	1,1	212,0	2,4		0,0
01/01/2023	0900	22,5	22,9	22,4	92,0	92,0	91,0	21,1	21,4	21,0	957,9	957,9	957,2	1,3	185,0	2,9		0,0
01/01/2023	1000	23,4	23,5	22,5	88,0	92,0	88,0	21,4	21,5	21,1	958,7	958,7	957,9	2,1	214,0	3,5	227,20	0,0
01/01/2023	1100	24,8	24,8	23,4	84,0	89,0	83,0	21,8	22,4	21,4	959,5	959,5	958,7	2,4	211,0	5,6	955,80	0,0
01/01/2023	1200	26,9	27,0	24,6	76,0	84,0	76,0	22,3	22,7	21,6	960,1	960,1	959,4	2,2	193,0	4,7	1754,40	0,0
01/01/2023	1300	28,2	28,4	26,7	68,0	77,0	67,0	21,7	23,2	21,7	960,2	960,3	960,1	2,4	170,0	5,7	2571,70	0,0
01/01/2023	1400	30,5	30,5	28,2	61,0	69,0	61,0	22,3	22,6	21,5	960,2	960,3	960,1	3,6	170,0	6,9	3052,20	0,0
01/01/2023	1500	31,3	31,8	29,6	55,0	63,0	53,0	21,3	22,8	20,4	959,7	960,2	959,7	3,7	151,0	8,1	3272,20	0,0
01/01/2023	1600	32,7	32,8	31,2	51,0	56,0	49,0	21,1	22,1	20,2	958,8	959,7	958,7	3,3	169,0	7,6	3596,00	0,0
01/01/2023	1700	33,1	33,9	31,9	50,0	51,0	44,0	21,2	22,0	19,1	958,0	958,8	958,0	3,6	158,0	7,3	3466,50	0,0
01/01/2023	1800	31,5	33,7	31,5	53,0	53,0	48,0	20,7	21,7	20,2	957,3	958,0	957,3	1,5	124,0	7,5	2160,80	0,0
01/01/2023	1900	32,7	32,9	31,1	49,0	55,0	47,0	20,4	21,4	20,1	956,5	957,3	956,4	0,4	196,0	4,8	1342,90	0,0
01/01/2023	2000	32,1	33,4	32,1	50,0	50,0	46,0	20,3	21,1	19,7	955,7	956,5	955,7	0,6	158,0	4,2	1815,50	0,0

Table from Dourados station – 2025 (April), Excerpts related to agroclimatic conditions

INMET :: Tempo 13/04/25, 11:29 p.m.

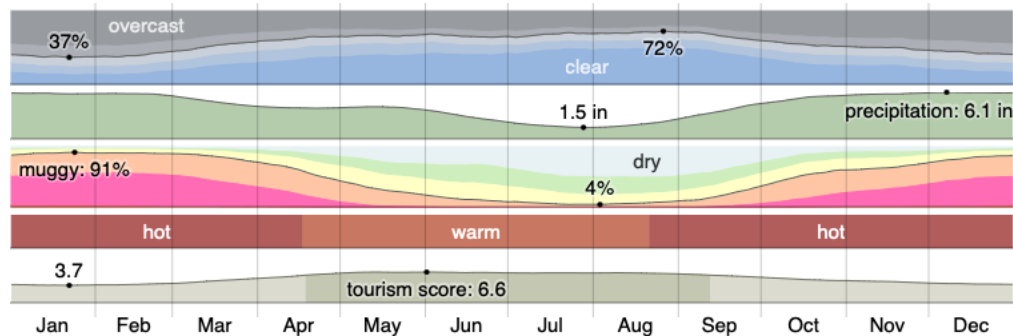
Data Inicio: 14/04/2025    Data Fim: 14/04/2025    [Gerar Tabela](#)    [Baixar CSV](#)

Data	Hora	Temperatura (°C)			Umidade (%)			Pto. Orvalho (°C)			Pressão (hPa)			Vento			Radiação	Chuva
		UTC	Inst.	Máx.	Min.	Inst.	Máx.	Min.	Inst.	Máx.	Min.	Inst.	Máx.	Min.	Vel. (m/s)	Dir. (°)	Raj. (m/s)	Kj/m²
14/04/2025	0000	20,2	21,3	20,2	93,0	93,0	89,0	19,1	19,3	19,1	961,0	961,0	960,2	0,1	9,0	4,8		0,0
14/04/2025	0100	20,3	20,4	20,1	94,0	95,0	94,0	19,3	19,4	19,1	961,7	961,7	961,0	1,5	11,0	3,5		0,0
14/04/2025	0200	20,0	20,3	19,9	96,0	96,0	94,0	19,3	19,4	18,9	961,9	962,0	961,7	1,7	6,0	3,5		0,0
14/04/2025	0300	19,7	20,1	19,7	98,0	98,0	96,0	19,4	19,5	19,2	962,0	962,0	961,9	1,4	357,0	2,8		0,0
14/04/2025	0400	20,1	20,1	19,6	98,0	99,0	98,0	19,8	19,9	19,4	962,0	962,2	962,0	1,7	338,0	3,5		0,0
14/04/2025	0500																	

Climate and Average Weather Year Round in Dourados Mato Grosso do Sul, Brazil

“In Dourados, the summers are long, hot, muggy, and partly cloudy; the winters are short, comfortable, and mostly clear; and it is wet year round. Over the course of the year, the temperature typically varies from 53° F to 89° F and is rarely below 43° F or above 99° F.

Based on the *tourism score*, the best time of year to visit Dourados for warm-weather activities is from mid April to mid September.”



[https://weatherspark.com/y/29524/Average-Weather-in-Dourados-Mato-Grosso-do-Sul-Brazil-Year-Round#google\\_vignette](https://weatherspark.com/y/29524/Average-Weather-in-Dourados-Mato-Grosso-do-Sul-Brazil-Year-Round#google_vignette)<sup>17</sup>

<sup>17</sup> Information consulted in April 2025.

Finally, it is confirmed that the  $ndy$  parameter is appropriately applied by the Project Proponent (PP), since in the absence of the project, the climatic conditions would allow for the natural generation of methane in manure management systems (e.g., anaerobic lagoons), thereby validating the application of methodology AMS-III.D version 21.