

PROJECT REVIEW REPORT

This project review report includes findings raised during Verra's review of the project specified below. The VVB must address the findings before the project request can be considered for approval by Verra. The project review report will be made publicly available on the Verra Registry. Confidential information may be provided in separate attachments.

Project ID	5366
Project Name	Henan Zhumadian Youran Xiping Dairy Farm Biogas Utilization Project
Review Type	Registration & Verification Approval
Program(s)	VCS Program
Verification Period	15-April-2023 to 31-December-2024
Project Proponent	Zhumadian Youran Animal Husbandry Co., Ltd. Climate Bridge (Shanghai) Ltd.
Methodology	AMS-III.D.- Methane recovery in animal manure management systems, version 21.0
VVB	CTI Certification Co., Ltd.
Assessment Criteria	VCS Standard Version 4.7
Date of First Issue	01 July 2025
Review Conclusion	Approved
Date of Final Issue	27 October 2025

FINDINGS

1	Sustainable development contribution	
<u>Issue</u> PP has claimed that the project achieves SDG 12.5, and the indicator has been defined as 'The amount of Volatile Solids (on a dry matter weight basis) contained in the animal manure waste treated'. However, as per SDG metadata, Target 12.5 is associated with reducing waste generation through prevention, reduction, recycling, and reuse. However, the PP does not explain how the project achieves waste reduction through prevention, reduction, recycling, and reuse. <u>Action Required</u> 1. The VVB must explain how it validated that the project is achieving SDG 12.5 for preventing, reducing, recycling, or reusing Volatile solids, leading to waste reduction. <u>Program Rule(s)</u> VCS Joint Project description and Monitoring Report Template, v4.4, section VCS Standard Version 4.7, section 3.17	Round 1 <u>VVB Response</u> The project activity, located in Hongcunpu Village, Leizu Town, Xiping County, Zhumadian City, Henan Province, P.R China, uses anaerobic digesters, i.e. Completely Stirred Tank Reactor (CSTR), to treat the dairy cattle manure, of which the main purpose is to avoid methane emissions through collecting and destroying the biogas generated from the anaerobic digester for power generation and natural gas upgrading (in the future), displacing fossil fuel-based electricity generation and natural gas with renewable energy sources. PP claimed SDG 7 instead of SDG 12. Descriptions have been supplemented in section 1.18.1 of the Joint PDMR and relevant assessment has been supplemented in section 3.1 of the JVVR.	Closed
	<u>Verra Response</u> VVB confirms that PP has implemented the necessary corrections in the PDMR based on the raised findings, which they have reviewed and found to be accurate. VVB has also updated their JVVR, which has been assessed and found to be satisfactory. This finding is closed.	
	Round 2 <u>VVB Response</u> (Pending)	
	<u>Verra Response</u> (Pending)	
	Round 3 <u>VVB Response</u> (Pending)	
	<u>Verra Response</u> (Pending)	

2	Incomplete information under Applicability of Methodology and Tool 6		
	<u>Issue</u> 1. Section 3.2 of the Joint PD MR does not provide any information on how the project meets the applicability condition in relation to para (b) of Tool 6. 2. The Joint PD MR and VR does not contain any information on how the VVB assessed the enclosed flare installed at the project activity is operating in accordance with the manufacturer's specification in accordance with Page 15 of Tool 6. 3. Section 3.2 of the Joint PD MR does not provide clear information on how the project is applicable to the applied methodology AMS III-D. <u>Action Required</u> 1.VVB must ensure that PP shall update the PD MR to provide further project specific information on how the project meets applicability condition (b) of Tool 6 2.The VVB must provide further information on how it assessed that the flares are enclosed and are operating in accordance with manufacturers specification in accordance with para 17 of Tool 6 . The PP must update this information in the Joint PD MR. 3.The VVB must ensure that PP shall update the Joint PD MR to provide further project-specific information on how the project meets the applicability condition of AMS III-D version 21.0. <u>Program Rule(s)</u> VCS Joint Project description and Monitoring Report Template, v4.4, section 3.2 VCS Standard Version 4.7, section 3.6	Round 1 <u>VVB Response</u> 1.Section 3.2 of the updated Joint PDMR has been included the applicability condition in relation to para (b) of Tool 6. The relevant assessment has been updated in section 3.4.2 of the JVVR. 2. The monitoring parameter SPEC_{flare} has been included in section 6.1 of the updated JPM. The relevant assessment has been included in section 3.4.8 of the JVVR. 3. The clear information on how the project is applicable to the applied methodology AMS III-D. has been included in section 3.2 of the updated JPM. The relevant assessment has been updated in section 3.4.2 of the JVVR. <u>Verra Response</u> 1. VVB has confirmed that PP has included the applicability condition in relation to para (b) of Tool 6 in the PDMR. Closed. 2. VVB has confirmed that PP has updated monitoring parameter SPEC_{flare} has been included in section 6.1 of the updated PDMR. Closed. 3. Section 3.2 of the Joint PD MR still does not provide clear information on how the project is applicable to the applied methodology AMS III-D. Open. <u>Action Required</u> 3. The VVB must ensure that PP shall update the Joint PD MR to provide further project-specific information on how the project meets the applicability condition of AMS III-D version 21.0. Round 2 <u>VVB Response</u> The applicability of the project to AMS III-D has now been clearly explained in section 3.2 of the updated JPM. In addition, the corresponding assessment has been revised and updated in	Closed

		Section 3.4.2 of the JVVR.	
		<u>Verra Response</u>	
		VVB confirmed that PP has updated the PDMR to provide further project-specific information on how the project meets the applicability condition of AMS III-D version 21.0. This finding is closed.	
		Round 3	
		<u>VVB Response</u> (Pending)	
		<u>Verra Response</u> (Pending)	

3	Insufficient Quantification of emission reduction calculations		
	<u>Issue</u> <u>Section 5.1 of PDMR –</u> 1. All default IPCC values have been considered for high productivity system, which according to Volume 4-Chapter 10, of 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, are systems which are: • 100 percent market oriented • High level of capital input requirements with high level of overall herd (flock) performance	Round 1	Closed
		<u>VVB Response</u>	
		1. As justified in section 3.4.6 of the JVVR, by checking FSR (approved by local government, i.e. the development and reform commission of Xiping County), Project Approval and through onsite inspection, it was confirmed that the dairy cattle farm is 100 percent market oriented, requires high level capital inputs and shows high level overall herd (flock) performance. 2 photos taken during VVB's site visit were listed below.	

- Feed is purchased from local or international market or intensively produced on farm.
- Animals are improved through breeding practices for commercial production.

In the absence of any monitoring to establish the above features concerning the AWMS project instances, it is not clear how the VVB has validated that the project farms will continue to qualify as high productivity systems for the entire crediting period. Further, it is not clear how the VVB validated the above points based on objective evidence, in addition to the Feasibility Study Report as described on Page 46 of the PD.

2. It is unclear why Equation 2 or Equation 3 was not considered in accordance with the applied methodology during the estimation of the VS_{LT} .

3. MCF – According to footnote 23 on page 36 of the PD, the average annual rainfall is reported as 850–980 mm, whereas elsewhere in the PD it is stated as 846.1 mm. Additionally, the web links provided in footnotes 26 and 27 are not functional.

4. The source of the formula for " $Q_{CH4,flare,y}$ " is not cited in the PD document.

Section 5.3 of PDMR –

5. It is unclear how long the cattle bedding material (dried solid part of digestate) is stored before use and under what condition it is stored in order not to be an anaerobic condition. In addition, what measures PP has taken in order that the cattle bedding materials does not generate emissions while in use.



During onsite investigation, it was verified feed is intensively

6. The PD states that the biogas slurry (liquid fraction) is returned to nearby farmland via a lifting pump station. However, it is unclear how methane emissions resulting from the application of slurry in the farmland will be monitored and recorded. The registered PD and the VR s not clearly demonstrate compliance with Paragraph 34 of the applied methodology. Section 5.4 of PDMR– 7. PD does not demonstrate with the applicable formula while estimating the • $PE_{flare,y}$ as 3,940 tCO₂e • $PE_{power,y} = PE_{EC,y} = 5,864$ tCO₂e. 8. Inconsistencies in the reporting units are found between the PDMR and the ERR sheet for parameters $Q_{biogas,y}$ ($BG_{burnt,y}$), $BG_{elec,y}$, $BG_{heat,y}$, and $Q_{biogas,flare,y}$ ($BG_{flare,y}$). In the ERR sheet, these are reported in Nm³ CH₄, whereas in the PDMR, the same parameters are presented in m³. Similarly, "There is an inconsistency in the units reported for the parameters $BG_{burnt,y}$, $BG_{flare,y}$, $BG_{heat,y}$, $BG_{elec,y}$, and D_{CH4}. These are presented in Nm³ in the data tables, whereas Section 7.1 of the PDMR reports the same parameters in m³. This discrepancy should be clarified to ensure consistency and accuracy in reporting Action Required 1. The VVB to justify how it validated that the project farms will continue to qualify as a high productivity system for the entire crediting period. 2. PP shall justify why the equation 2 or 3 is not applied for calculating VS_{LT} in accordance with AMS III D. 3. The Project Proponent (PP) shall provide a justification for not considering the average annual rainfall as referenced in	produced on farm, and dairy cattle are genetically improved through breeding practices for commercial production, which has been cross checked against Import Cattle Agency Agreement, Feed Source Statistics Record for Livestock Cattle and the Livestock Frozen Semen Supply Contract, and Customs Declaration and Quarantine Certificate of imported Bovine Semen. Besides, as verified in section 4.1.2 of the JVVR, the monitoring value of W_{site} of both vintages in this monitoring period was 520 kg and 513 kg respectively, which is verified to higher to IPCC default value of live weights for finishing dairy cattle in high productivity systems (PS) in Asia sourced from 2019 Refinement to 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 10, Table 10A.5, i.e. 485kg. Therefore, the assessment team deemed the dairy cattle farm fulfills the definition of High Productivity Systems. Section 3.4.6 of the JVVR has been updated accordingly. 2. As per AMS III.D version 21, Project participants may adjust default IPCC values for VS for a site-specific average animal weight. If so, it shall be well explained and documented. $VS_{LT,y} = \left(\frac{W_{site}}{W_{default}} \right) \times VS_{default} \times nd_y$ By checking Dairy Weight Record Table, it was verified the average weight of dairy cattle of this project in 2023 and 2024 is respectively 512 kg and 518 kg, more than the default IPCC value, i.e. 485kg animal⁻¹. Therefore, the assessment team confirmed that it was very conservative to apply directly IPCC default value of dairy cattle weight in calculating $VS_{LT,y}$, other than adjusting default IPCC values for VS for a site-specific average animal weight using equation (3) above.	
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Footnote 23. Additionally, the PP is requested to correct the non-functional web links provided under Footnotes 26 and 27 note 4. The Project Proponent (PP) shall provide a reference to the source from which the formula for $Q_{CH4, flare, y}$ has been derived or applied. 5. The Project Proponent (PP) shall demonstrate that the solid, dried portion of the digested cattle bedding material will not be stored under anaerobic conditions. Additionally, the PP shall provide details regarding the timing of its usage and the specific storage conditions to ensure compliance with the applicable methodology. cattle bedding material. 6. The Joint Project Description and Monitoring Report Document (JPDMR) shall include detailed information on the monitoring of total liquid slurry generation and the quantity of slurry supplied to the farmland. Furthermore, the Project Proponent (PP) shall demonstrate compliance with Paragraph 34 of the applied methodology, particularly with respect to slurry handling, usage, and monitoring requirements. 7. The Joint PDMR shall include the applicable formulas used in the calculation of both $PE_{flare, y}$ and $PE_{power, y}$, in accordance with the applied methodology. 8. The Project Proponent (PP) shall provide information, based on the flow meter specifications, indicating whether the biogas flow is measured in cubic meters (m^3) or normal cubic meters	$W_{site} (TAM_{T,P})$ would be monitored ex post. The detailed monitoring information has been included in the JPM and relevant assessment has been included in JVVR. Both JPM and JVVR has been updated accordingly. 3. The mean annual precipitation (MAP) in the JPM and JVVR has been corrected as 850–980 mm. The updated data source has been included in the footnotes and verified by the assessment team (refer to screenshot below). And the potential evapotranspiration (PET) has been revised to 1314.15 mm based on the new weblink in both JPM and JVVR. 	
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(Nm³). In case the flow is measured in m³, the PP shall also explain the methodology and parameters used to convert the measured volume to Nm³, including temperature and pressure conditions. VVB must ensure that PP shall correctly and consistently report the unit for biogas flow in the PDMR.

9. The VVB shall ensure that findings 1-8 listed above are adequately addressed in point form, and the joint PD&MR is revised accordingly.

10. VVB to assess the updates and revise the joint V&V report where applicable.

Program Rule(s)

VCS Joint Project description and Monitoring Report Template, v4.4, section 5.1, 5.3, 5.4
VCS Standard Version 4.7, section 3.15

https://sthjj.zhumadian.gov.cn/zwyw/hbyw/xzgs/hpsjgs/202106/P020241220600092178698.pdf

汽车研究进展 项目 华电万方 网易有道 在线翻译 有道 百度翻译-200种 国家法律法规 在线汉语GB 213 CNKI翻译助手 智能诊断 让工业

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季风气候明显，四季分明，温热适中，雨热同季。据驻马店气象站 1969 年以来的观测资料，多年平均降水量 936.0mm，最大降水量 1575.8mm（1982 年），最小降水量 415.9mm（1992 年），降水量年际变化大，丰枯不均，最大与最小值为 3.43:1，多年平均蒸发量 1314.15mm，年最大蒸发量 1678.7mm（1997 年），年最小蒸发量 782.1mm（2003 年）。年内蒸发 5-8 月最高，占全年的 52.53%，11 月至翌年 2 月最低，占全年的 14.43%。温度适中，年平均气温 14.6℃-15℃。1 月最冷，月平均气温 0.8-1.6℃，最低气温-15℃；7 月份最热，月平均 27.2-27.6℃，最高气温 40℃ 以上。全年无霜期 220-230 天。

2016 年降水相对集中，主要在 5-10 月份，占全年降水量的 78.5%，2016 年降水量为 908.0mm，与上年相比增加了 32.8%，详见表 3.1-2。

表 3.1-2 2014-2016 年驻马店市降水量统计 单位: mm

年份	1 月	2 月	3 月	4 月	5 月	6 月	7 月	8 月	9 月	10 月	11 月	12 月	合计
2014	10	17	36	56	105	110	138	109	96	155	43	33	908.0
2015	14	18	39	62	70	177	74	91	34	19	79	6.9	683.9
2016	5.5	48.6	/	119.5	116.5	134.9	50.7	159.2	286.4	128.1	33.7	0.8	1083.9

4. For the project activity, the mass flow of CH₄ in the residual gas ($F_{CH_4, RG, m}$), i.e. $Q_{biogas, flare, y}$ is determined using equation (2) in Tool 14 "Project and leakage emissions from anaerobic digesters" (version 03.0). PP chose equation 2 from option 2 (Procedure using a default value) of Tool 14 to calculate the amount of biogas monitored at the inlet of the flaring system in a year ($Q_{biogas, flare, y}$), which is verified by the assessment team to be reasonable and acceptable.

The source of the formula for " $Q_{biogas, flare, y}$ " has been included in section 5.1 of the updated JPM. The relevant assessment has been updated in section 3.4.6 of the JVVR.

5. During onsite inspection, it was verified the cattle bedding material (dried solid part of digestate) is stored in biogas residue storage room. Via checking usage records of cattle bedding material and interviewing staff from PP, the assessment team confirmed the bedding material will be used within one day. Via onsite inspection and interview, the assessment team deemed the storage room is a dry and

		ventilated environment that does not produce anaerobic conditions and thus will not generate emissions. The picture of storage room taken during VVB's site visit was below:  6. PP has included monitoring of soil application of the digestate in section 6.2 and 7.1, to ensure that the residual waste from the animal manure management system is handled aerobically. The relevant assessment has been included in JVVR. 7. The applicable formula while estimating the $PE_{flare,y}$ and $PE_{power,y}$ has been included in section 5.4 (equation 6 and 8) of the updated JPM. The relevant assessment has been included in section 3.4.6 of the JVVR. 8. Nm^3 is the gas volume measured at standard conditions ($0^{\circ}C$, 1 atm), whereas m^3 is the actual volume under the real temperature and pressure on site. Considering the flow meter readings have been automatically converted to value at room temperature ($20^{\circ}C$) and 1 atm pressure, PP has updated the units of the parameters $Q_{biogas,y}$ ($BG_{burnt,y}$), $BG_{elec,y}$, $BG_{heat,y}$, and $Q_{biogas,flare,y}$ ($BG_{flare,y}$) as Nm^3 in the updated JPM. The JVVR has been updated accordingly.	
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		<u>Verra Response</u> VVB confirms that PP has implemented the necessary corrections in the PDMR based on the raised findings, which they have reviewed and found to be accurate. VVB has also updated their JVVR, which has been assessed and found to be satisfactory. This finding is closed. Round 2 <u>VVB Response</u> (Pending) <u>Verra Response</u> (Pending) Round 3 <u>VVB Response</u> (Pending) <u>Verra Response</u> (Pending)	
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4	Incomplete information on ex-post parameters		
	<u>Issue</u> <u>Section 6.2 of PDMR -</u> 1. The JPDMR does not provide information on how the parameter MS%_{i,y} will be monitored. 2. The measurement procedures for the parameters "N_{da,y}" and "N_{p,y}" are not clearly described in accordance with the applied methodology. The Joint PDMR should explicitly outline the system used to monitor livestock population. Additionally, consistency between the reported values and indirect evidence—such as sales records and food purchase records—should be thoroughly assessed. 3. QA/QC procedures must be clearly defined in the PD for the following parameters to ensure transparency, accuracy, and consistency in data monitoring and reporting. .	Round 1 <u>VVB Response</u> 1. Based on the monthly report and Operation Log from Zhumadian Youran Xiping Dairy farm, on-site inspection and investigation, it was confirmed all the manure of the project were cleaned by scrapers to the closed transportation pipeline and finally to the anaerobic digesters within 7 hours for anaerobic fermentation. Also, via onsite inspection and investigation, it is confirmed no other sequential manure management system existed at the project site and thus 100% is applied. The information has been included in the updated JPM. The relevant assessment has been updated in the JVVR. 2. Via onsite inspection and investigation, it was verified the PPhas established a unique identification tag for each dairy cattle, which is an electronic ear tag (see below photo taken during VVB's site visit). Through electronic ear tags, the system can count the alive condition and number of dairy cattle. In addition, via interviewing the staff from PP, it was verified on-site inventory of the cattle herd	Closed

a. $E_{g,y}$ b. $VS_{LT,y}$, c. $Q_{biogas,y}$ ($BG_{burnt,y}$, $BG_{elec,y}$, $BG_{heat,y}$, $Q_{biogas, flare,y}$ ($BG_{flare,y}$) 4. The JPDMR lacks a defined calibration schedule for the monitoring equipment, which is essential to ensure the accuracy and reliability of the collected data. 5. In accordance with the monitoring methodology, the Project Participant (PP) is required to apply a default value of 60% on a dry basis (as per Page 18, Section 5.1 of AMS-III.D). However, since the PP is not monitoring 'wCH₄', it is unclear how compliance with this requirement is being ensured. 6. The absence of monitoring for the parameters 't' and 'P'—representing the temperature and pressure of biogas at the flow measurement site—raises concerns regarding the precision of volumetric flow calculations and overall data reliability. 7. For the parameter FE ($\eta_{flare,m}$), there is no monitoring equipment installed to measure the heat generation from the biogas boiler. However, the Project Participant (PP) has assumed a default efficiency value of 90% without providing justification or evidence to demonstrate the conservativeness of this assumption. Furthermore, it is unclear how the Project Participant (PP) has ensured that the flare operates within the manufacturer's specified operating temperature of no less than 1260 °C, given that the reported flare temperatures are below this threshold. Clarification is required on how compliance with the manufacturer's specifications has been demonstrated. Similarly, for the monitoring parameter 'Flame detection of flare (in minutes, m)', the details of the monitoring equipment used are not provided. This omission makes it unclear how the	have been conducted monthly to check the ear tag numbers and system records, and confirm whether the cattle is alive.  The above has been included in the updated JPM. The relevant assessment has been included in the JVVR. 3. The QA/QC procedures for the parameters $E_{g,y}$, $VS_{LT,y}$ and $Q_{biogas,y}$ ($BG_{burnt,y}$, $BG_{elec,y}$, $BG_{heat,y}$, $Q_{biogas, flare,y}$ ($BG_{flare,y}$) have been included in the section 6.2 of the updated JPM. Relevant assessment has been included in section 3.4.8 of the JVVR. 4. The calibration schedule for the monitoring equipment have been included in the updated JPM, e.g. The flow meters are to be calibrated once every two years by a qualified third party in accordance with the “Verification Regulation of Thermal Mass Gas Flowmeters” (JJG-1132-2017). The temperature transmitter is to be calibrated once every year in accordance with the “Calibration Specification of the Temperature Transmitter” (JJF 1183-2007).	
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	presence and duration of the flare flame are being reliably detected and recorded. 8. The parameter W_{site} is missing from the list of monitored parameters, despite the use of TAM (Typical Animal Mass) for calculating VS_{LT} in accordance with IPCC 2019 guidelines. However, TAM itself is not included as a monitored parameter, which creates a gap in the monitoring framework. <u>Action Required</u> 1. The VVB shall ensure that findings 1-8 listed above are adequately addressed in point form, and the joint PD&MR is revised accordingly. 2. It is unclear how the Validation and Verification Body (VVB) has validated and verified the assumed flare efficiency of 90%, given that the Project Participant (PP) is not monitoring key parameters such as flare temperature, biogas flow rate, and flame detection. Clarification is required on the basis for accepting this efficiency value in the absence of direct monitoring data. 3.VVB to assess the updates and revise the joint V&V report where applicable. <u>Program Rule(s)</u> VCS Joint Project description and Monitoring Report Template, v4.4, section 6.2 VCS Standard Version 4.7, section 3.16	The weight scale will be calibrated once every year in accordance with the “Digital Indicating Weighing Instruments” (JJG539-2016). Both JPM and JVVR has been updated to included the calibration schedule. 5. As per AMS-III.D., Version 21.0, “the fraction of methane in the biogas should be measured with a continuous analyser (values are recorded with the same frequency as the flow) or, with periodical measurements at a 90/10 confidence/precision level by following the “Standard for sampling and surveys for CDM project activities and Programme of Activities”, or, alternatively a default value of 60% methane content can be used. Option chosen should be clearly specified in the PDD. It shall be measured using equipment that can directly measure methane content in the biogas - the estimation of methane content of biogas based on measurement of other constituents of biogas such as CO₂ is not permitted. The methane content measurement shall be carried out close to a location in the system where a biogas flow measurement takes place, and on the same basis (wet or dry)”. PP selected default value 60% as methane content, which is in compliance with AMS-III.D., Version 21.0. Both JPM (section 6.2 and 7.1) and JVVR (section 3.4.8 and 4.2) has been updated to include this monitoring parameter. 6. The flow meter used in this project is a thermal mass flow meter, which directly measures the mass flow of biogas. By checking the User Manual of this thermal flow meter, it is confirmed based on the pre-programmed standard density at reference conditions (20 °C and 1 atm pressure), it converts the mass flow into standard volumetric flow (Nm³/h) without requiring additional temperature or pressure compensation. Therefore, the displayed data is presented	
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		in terms of standard volumetric flow, which has been applied in the JPM. The relevant assessment has been included in the JVVR. 7. The description of no less than 1260°C was a typo, According to the Operation Specification of the flare and onsite interview, it is confirmed the flare operates within the manufacturer's specified operating temperature is at the range of 600 °C - 1260 °C. An ex-ante parameter "SPEC_{flare}" has been included in the JPM. The relevant assessment has been included in the JVVR. By checking FSR and through on site inspection, it is confirmed the project activity utilized an enclosed flare. As per "Project emissions from flaring (version 04.0)", in the case of enclosed flares, PP may choose between the following two options to determine the flare efficiency for minute m ($\eta_{\text{flare},m}$): (a) Option A: Apply a default value for flare efficiency; (b) Option B: Measure the flare efficiency. PP selected option A and a default value was applied for the project activity. For this option, 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 ($T_{\text{EG},m}$) and the flow rate of the residual gas to the flare ($F_{\text{RG},m}$) is within the manufacturer's operating specification for the flare (SPEC_{flare}) in the minute m; and (b) The flame is detected in the minute m (Flame_m). The temperature in the original JPM report refers to the temperature of the igniter, not that of the burner. After cross-checking Flaring System Operation Statistics with the flare operation report, the temperatures of the flare burners in this project are verified to be 687 °C and 712 °C respectively in 2023 and 2024 during this monitoring period, which is within the manufacturer's operating	
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		specification for the flare ($SPEC_{flare}$) ($600\text{ }^{\circ}\text{C} - 1260\text{ }^{\circ}\text{C}$), and thereby the assessment team deemed that the $flame_m$ is ON. Besides, by checking Flaring System Operation Statistics, it was verified the flow rate of the residue gas to the flare ($F_{RG,m}$) is $560.43\text{ Nm}^3/\text{h}$ and $514.96\text{ Nm}^3/\text{h}$ respectively in 2023 and 2024 during this monitoring period, which is within the manufacturer's operating specification for the flare ($SPEC_{flare}$) ($0\sim 1900\text{ m}^3/\text{h}$). Based on the above justifications, it was verified the two conditions can be met to demonstrate that the flare is operating and the adoption of default value 90% as flaring efficiency was reasonable and acceptable. Both JPM and JVVR have been updated accordingly. 8. The parameter W_{site} ($TAM_{T,p}$) has been included in section 6.2 and 7.1 of the updated JPM. The relevant assessment has been included in section 3.4.8 and 4.2 of the JVVR.	
		<u>Verra Response</u> VVB confirms that PP has implemented the necessary corrections in the PDMR based on the raised findings, which they have reviewed and found to be accurate. VVB has also updated their JVVR, which has been assessed and found to be satisfactory. This finding is closed.	
		Round 2	
		<u>VVB Response</u> (Pending)	
		<u>Verra Response</u> (Pending)	
		Round 3	
		<u>VVB Response</u> (Pending)	
		<u>Verra Response</u> (Pending)	

5	Incomplete information on Data and Parameters Monitored			
	<u>Issue</u> <u>Section 7.1 of PDMR</u> 1. It is unclear how the DOE/VVB has verified that 100% of the manure generated during the current monitoring period (MP) was handled within the project system. <u>Action Required</u> 1. VVB shall provide information on how they cross check the 100% value for MS%. 2.VVB to assess the updates and revise the joint V&V report where applicable. <u>Program Rule(s)</u> VCS Joint Project description and Monitoring Report Template, v4.4, section 7.1 VCS Standard Version 4.7, section 3.16	Round 1 <u>VVB Response</u> Based on the monthly report and Operation Log from Zhumadian Youran Xiping Dairy farm, on-site inspection and investigation, it was confirmed all the manure of the project were cleaned by scrapers to the closed transportation pipeline and finally to the anaerobic digesters within 7 hours for anaerobic fermentation. Also, via onsite inspection and investigation, it is confirmed no other sequential manure management system existed at the project site and thus 100% is applied. The information has been included in the updated JPM. The relevant assessment has been updated in the JVVR.	Closed	
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		Round 3 <u>VVB Response</u> (Pending)		
		<u>Verra Response</u> (Pending)		
6	Inconsistency in GHG Emission Reductions and Carbon Dioxide Removals			
	<u>Issue</u> <u>Section 7.5 of PDMR.</u> 1. Page 20 & 89 of PDMR has incorrectly reported the actual	Round 1 <u>VVB Response</u> 1. The value has been revised to 91,275tCO₂e in the updated JPM.	Closed	

	emission reductions achieved in this monitoring period (603 days) as 94,155.	<u>Verra Response</u>	
	<u>Action Required</u>	VVB confirms that PP has implemented the necessary corrections in the PDMR based on the raised findings, which they have reviewed and found to be accurate. VVB has also updated their JVVR, which has been assessed and found to be satisfactory. This finding is closed.	
	1. PDMR shall report the correct value for actual emission reductions achieved in this monitoring period		
	<u>Program Rule(s)</u>	Round 2	
	VCS Joint Project description and Monitoring Report Template, v4.4, section 7.5	<u>VVB Response</u> (Pending)	
	VCS Standard Version 4.7, section 3.15	<u>Verra Response</u> (Pending)	
		Round 3	
		<u>VVB Response</u> (Pending)	
		<u>Verra Response</u> (Pending)	

7	Inconsistent and insufficient information in Joint Validation and Verification Report		
	<u>Issue</u>	Round 1	Closed
	1. JVVR under page 60, the estimated baseline emission (15-04-2023 to 31-12-2023) is reported incorrect (VR report 42,625 as estimated baseline emission instead of 57,715. Similarly, the total Estimated project emissions is incorrectly reported as 6,013 instead of 211,020.	<u>VVB Response</u>	
	2. JVVR does not include complete VVB's opinion on the suitability of values considered under ex-ante parameters.	1. This is a clerical error. The JVVR has been updated accordingly. 2. Complete VVB's opinion about ex-ante parameters have been included in section 3.4.8 of the JVVR.	
	3. As stated in the JVVR "The meter readings have been automatically converted to value at room temperature (20°C) and 1 atm pressure" under page 71, it is unclear how VVB has verified this information. In addition, if the meter readings	3. As explained in finding 4-6, the flow meter used in this project is a thermal mass flow meter, which directly measures the mass flow of biogas. By checking the User Manual of this thermal flow meter, it is confirmed based on the pre-programmed standard density at reference conditions (20 °C and 1 atm pressure), it converts the mass flow into standard volumetric flow (Nm ³ /h) without requiring additional temperature or pressure compensation. Therefore, the displayed data is presented in terms of standard volumetric flow,	

	automatically convert to value at normal temperature, then why the biogas flow units are reported in m3 instead of Nm3. 4. Incorrect total value for Flow rate of the residual gas on a dry basis at reference conditions in the minute m (FRG,m) is reported in JVVR. <u>Action Required</u> VVB shall address findings 1 – 4 and update the JVVR as needed. <u>Program Rule(s)</u> VCS Joint Validation and Verification Report Template, v4.4, section 3.4.6 VCS Standard Version 4.7, section 3.15	which has been applied in the JPM. The relevant assessment has been included in the JVVR. As explained in finding 3-8, Nm³ is the gas volume measured at standard conditions (0°C, 1 atm), whereas m³ is the actual volume under the real temperature and pressure on site. Considering the flow meter readings have been automatically converted to value at room temperature (20°C) and 1 atm pressure, PP has updated the units of the parameters Q_{biogas,y} (BG_{burnt,y}), BG_{elec,y}, BG_{heat,y}, and Q_{biogas,flare,y} (BG_{flare,y}) as Nm³ in the updated JPM. The JVVR has been updated accordingly. 4. This is a clerical error. The value of total amount of F_{RG,m} has been revised to 5,892,857Nm³ in section 4.2 of the JVVR. <u>Verra Response</u> VVB has revised and updated their JVVR and has implemented the necessary corrections based on the raised findings, which has been assessed and found to be satisfactory. This finding is closed. Round 2 <u>VVB Response</u> (Pending) <u>Verra Response</u> (Pending) Round 3 <u>VVB Response</u> (Pending) <u>Verra Response</u> (Pending)	
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#	Finding Description	VVB Response	Status
8	Verification of authenticity of government approvals		
	<u>Issue</u>	Round 1	

	Verra is seeking evidence of the credibility of the relevant government approvals submitted for the project activity. <u>Action Required</u> The VVB must independently assess objective evidence that confirms the carbon project is authorized by the relevant government authorities by taking one of the following two actions: 1. Contact at least two of the relevant government authorities¹ responsible for the approvals listed below (as applicable): a. Environmental Impact Assessment (EIA) b. Power purchase agreement c. Land lease agreement d. Commissioning certificate/approval for operation e. Latest pollution clearances The VVB must submit evidence that the relevant authority confirmed authorization of the project to Verra for review. 2. Present publicly available government records that demonstrate the government authorization for the carbon project exists. If the public records are in language other than English, then a notarized English translation by a certified translator must be submitted. <u>Program Rule(s)</u> VCS Standard v4.7, Section 1.2.1 and Section 3.7.1	<u>VVB Response</u> The VVB has elected to satisfy Verra’s evidence requirement under Option 1 by contacting the relevant government authorities through the governmental website. Via the Xiping County People's Government website, CTI contacted two government departments to verify the commissioning certificate/operation approval and latest pollution clearances. On 22-09-2025, CTI submitted the following queries regarding the project's operation: 1) The project construction site is located at Hongcunpu Village, Leizu Town, Xiping County, Zhumadian City, Henan Province; 2) Whether “Zhumadian Youran Animal Husbandry Co., Ltd.” is responsible for project construction and operation; 3) Project construction was completed and full operations began on 15-04-2023. On the same day, the Xiping County Agriculture and Rural Bureau responded: Zhumadian Youran Farm is located in Hongcunpu Village, Leizhu Town, within our jurisdiction. The biogas utilization project was developed and is operated by the farm, achieving full operational status in 2023 after completing all commissioning activities. Xiping County Agriculture and Rural Bureau confirmed the operation date in their response and stated that the biogas project is developed and run by Zhumadian Youran Farm; it therefore follows	Closed
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¹ The VVB should use the relevant government websites to confirm authorization for the projects. For example, if the project was in Weihai City and required approval from the local authorities, questions should be submitted via <https://www.weihai.gov.cn/>.

		that the project and the farm share the same owner—Zhumadian Youran Animal Husbandry Co., Ltd.. Regarding the latest pollution clearances of the project, CTI also queried on 22-09-2025 as following: Whether the company ("Zhumadian Youran Animal Husbandry Co., Ltd.") has filed a pollution registration. If registered, please verify the registration date of 22-08-2022, with a validity period from 22-08-2022 to 21-08-2027, registration number 91411721MA9FQMZX46001X, and the registration date of 01-07-2024, with a validity period from 01-07-2024 to 30-06-2029, registration number 91411721MA9FQMZX46001X. On 26-09-2025, the Zhumadian City Ecological Environment Bureau Xiping Branch responded: After checking the pollutant-discharge registration database, the pollution registration number for Zhumadian Youran Animal Husbandry Co., Ltd. is 91411721MA9FQMZX46001X, with validity period from 02-04-2025 to 01-04-2030. Given that the government's response timeline differed from CTI's inquiry date, CTI conducted additional verification through the public information on the pollutant-discharge registration database². This supplementary check confirmed the presence of three registration records under number 91411721MA9FQMZX46001X: - version 1: Valid from 22-08-2022 to 21-08-2027 (application) - version 2: Valid from 07-05-2024 to 06-05-2029 (modification) - version 3: Cancellation - Version 4: Valid from 01-07-2024 to 30-06-2029 (application)	
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² <https://permit.mee.gov.cn/register/library/registerShow.vm?enterid=a5004c00-92af-4070-ac38-110e1b7ab02d>

		- version 5: valid from 05-09-2024 to 04-09-2029 (modification) - version 6: Valid from 02-04-2025 to 01-04-2030 (modification) Although the authority's reply only confirmed the current registration (02-04-2025 – 01-04-2030), the pollutant-discharge registration database shows a continuous history under number 91411721MA9FQMQX46001X, including the two earlier periods queried by CTI (22-08-2022 – 21-08-2027 and 01-07-2024 – 30-06-2029), thereby the assessment team confirmed that both the historical records and the latest validity period are accurate. The screenshots of the queries and responses from the government website, as well as the screenshots of the publicly available pollution discharge information, have been translated by Shanghai Linyue Translation Service Co., Ltd., a qualified translation service provider holding ISO 17100 certification. The translated screenshots, certified English translations, and the translator's credentials have been submitted for review. Moreover, as per the Project Approval and EIA Approval, the farm is designed to accommodate 24,000 head of dairy cattle, comprising 14,400 adult dairy cattle, 3,100 breeding cattle and 6,500 calves per year. For emission-reduction calculations the project considers 17,500 head (adult dairy cattle and breeding cattle) and excludes calves. The assessment team confirms that the exclusion is conservative and has a negligible impact on the overall estimate of emission reductions. In the emission reduction calculation for the monitoring period from 15-04-2023 to 31-12-2024, the parameter $N_{p,y}$ for the project refers to the number of adult dairy and breeding cattle, excluding calves (please refer to assessment of parameter $N_{p,y}$ in section 4.2 of the JVVR for details). During this monitoring period, the number of calves was 2,129 and 2,455 heads respectively, and these were	
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		not included in the emission reduction calculation. Given that, in the actual operation of this project, calf manure is collected together with that of mature cows in the same barn and both streams are conveyed by the same scraper into a common channel with no physical separation, the assessment team, on grounds of both conservativeness and accuracy, has requested the project participant (PP), to make further adjustments to the calculation of MD_y (Methane captured and destroyed or used gainfully by the project activity in year y) to ensure that the VS contribution from calves is properly excluded when determine the baseline emission calculations. When calculating project emissions, the actual monitored values of these parameters (without deducting the calf fraction) will be used; this approach is conservative. Since the measured $Q_{biogas,y}$ ($BG_{burnt,y}$), $BG_{elec,y}$, $BG_{heat,y}$, $Q_{biogas,flare,y}$ ($BG_{flare,y}$), NG_y, EG_y is originated from mixed manure (calves included), no physical or analytical basis exists to isolate the fraction derived from calves. For conservativeness, the project will therefore apply the full measured biogas quantities directly when calculating project emissions. While calculating the parameter of MD_y, the data of these parameters will be deducted the biogas generated from calves' manure, which will be calculated in proportion to the number of calves relative to the total number of dairy cattle. while the same data are reduced by the calf fraction (the number of calves / the total number of dairy cattle) when calculating MD_y, thereby excluding the calves contribution from the baseline emissions. Final emission reductions of the project activity are calculated via equation below: $ER_{y,ex\ post} = \min[(BE_{y,ex\ post} - PE_{y,ex\ post}), (MD_y - PE_{power,y,ex\ post})]$	
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		Because only adult dairy cattle and breeding cattle are considered, their average live weight is compared with the IPCC default weight to determine the VS value, when calculating $BE_{y,ex\ post}$. As a result, although MD_y has been reduced by the calf fraction, the finally actual emission reductions were remain unchanged. The detailed calculation has been updated in the ER calculation sheet, JPM and the relevant assessment has been included in the JVVR.	
		<u>Verra Response</u> VVB has confirmed that the project activity has obtained necessary permits/ permissions from the relevant government authorities for operation of the project activity. VVB has contacted two government departments to verify the commissioning certificate/operation approval and latest pollution clearances via Option 1 of the raised findings. VVB has also submitted the English translated notarized version of the govt. approval documents. The VVB's assessment of Verification of authenticity of government approvals are found to be satisfactory. This finding is closed.	
		Round 2	
		<u>VVB Response</u> (Pending)	
		<u>Verra Response</u> (Pending)	
		Round 3	
		<u>VVB Response</u> (Pending)	
		<u>Verra Response</u> (Pending)	