



PROJECT REVIEW REPORT

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

Review Type	Joint Registration and Verification
Project ID	2938
Project Name	Yunshui Wastewater Treatment Plant Project in Guangdong Province
Program(s)	VCS
Verification Period	03 September 2020 - 30 June 2022
Project Proponent	Yunshui Guangdong Environmental Protection Co., Ltd.
Methodology	AM0080 "Mitigation of greenhouse gases emissions with treatment of wastewater in aerobic wastewater treatment plants" Version 01
VVB	Shenzhen CTI International Certification Co., Ltd (CTI)
Assessment Criteria	VCS Version 4
Date of First Issue	12 January 2023
Review Conclusion	Approved
Date of Final Issue	09 March 2023

FINDINGS

1	Incomplete description of project activity	Response	Status
	Issue Section 1.11 of the joint project description and monitoring report does not include information on: a) the manufacturers of the equipment installed; b) types and levels of service (typically in terms of mass or energy flows) provided by installed technologies or systems of each of the 16 plants, including a clear discussion of how the same types and levels of services would be provided in the baseline scenario and; c) list of facilities, systems, and requirements operating under the existing scenario prior to implementation (such as depth, retention time, capacities of each of the open anaerobic lagoons and associated landfills –including the methane capture systems- where the sludge was being disposed). Action item. 1. The VVB must ensure that the project proponent includes in Section 1.11 of the joint project description and monitoring report all the aforementioned information. 2. The VVB must validate this information and update Section 3.1 of the joint validation and verification report as needed. Program rule(s) or methodology section VCS Joint Project Description and Monitoring Report Template v4.1, Section 1.11	Round1: VVB Response: 1. a) VVB confirmed that the manufacturers of the equipment installed has been added to Section 1.11 of the revised joint project description and monitoring report, the name is verified as correct by checking the Equipment purchase contracts; b) The project constructed aerobic wastewater treatment plant to treat wastewater from towns in 16 regions of Guangdong Province. All the 16 wastewater treatment plants use the same aerobic treatment process (A2O+MBR), and the treatment capacity of 16 wastewater treatment plants has been added to Section 1.11 of the JPM which has been verified as correct and actual by checking the Technical agreement of main equipment. Open anaerobic lagoons were used to treat the domestic wastewater in the 16 rural areas in the baseline scenario. Each anaerobic lagoon has different service capacity, which is determined by the amount of wastewater, type (domestic or industrial) and future trend. Via checking the feasibility study report/5/ of the project, VVB confirmed that water consumption and wastewater type of the 16 rural areas remains stable¹ which can ensure that the maximum designed capacity of the wastewater treated is the same under the baseline and the project scenario. Detailed information of the open anaerobic lagoons was added in Section 1.11 of the JPM that have been verified as correct and reasonable by checking the FSR/5/ and baseline survey report/13/.	Closed

¹According to the 7th National Population Census Bulletin of Guangdong Province(<http://stats.gd.gov.cn/attachment/0/421/421375/3284461.pdf>), the rural population in Guangdong Province has remained relatively stable from 2010 to 2020. So the population of the 16 regions where the project is located was stable during this period and is likely to remain stable for a considerable period in the future. It can be inferred that the water consumption of residents will also remain stable.

VCS Joint Validation and Verification Report Template v4.1, Section 3.1	c) The detailed parameters, such as depth, location, retention time, and volume of the 16 open anaerobic lagoons have been added to section 1.11 of the revised JPM that have been verified as correct and reasonable by checking the FSR/5/ and baseline survey report/13/. Via checking the Sludge Disposal Letter Issued by Guangdong Housing and Urban-Rural Development Bureau/14/, VVB confirmed that the sludge generated should be dried under controlled and aerobic conditions, and then sent to the landfills with methane recovery for disposal respectively. Even in the baseline scenario, through checking the Baseline Survey Report/13/, it is confirmed that the sludge was treated in the same way as the project scenario. The landfills are not included in the project boundary, and they are not associated facilities of the project. The Sludge Landfill Contracts/73/ signed between the project owner and the landfills have been checked and verified the above demonstration. 2. Section 3.1 of the joint validation and verification report has been updated with above assessment. Verra Review: The Joint PD-MR has been updated sufficiently to close this finding Round 2:
2 Insufficient information about regulations compliance <u>Issue</u> Section 1.14 of the joint project description and monitoring report does not clearly indicate if each of the 16 projects has the EIA approval/Permit. <u>Action item</u> 1. The VVB must ensure that the project proponent includes in Section 1.14 of the joint project description and monitoring report the details of the EIA approval/Permits for each of the 16 plants included in the project activity. 2. The VVB must validate this information and update Section 3.1 of the joint validation and verification report as needed.	Round1: Closed VVB Response: 1. All the 16 wastewater treatment plants belong to the same PP. The planned construction time of these plants is about the same, and the same aerobic treatment process (A2O+MBR) was used. And then, considering that these 16 wastewater treatment plants have the characteristics of small scale and large quantity. So the 16 plants were summarized as a consolidated project to complete the one FSR and one EIA. However, the design proposal for each plant was made according to its different capacity. The EIA was finally approved by Guangdong Ecological Environment Department, which covered all the 16 plants. Via check the FSR/5/, project approval/8/ and EIA approval/7/, VVB confirmed that the project has only one FSR, one project approval and one EIA approval, which contains all information of

	<u>Program rule(s) or methodology section</u> VCS Joint Project Description and Monitoring Report Template v4.1, Section 1.14 VCS Joint Validation and Verification Report Template v4.1, Section 3.1	16 wastewater treatment plants. Footnote 2 has been added to Section 1.14 in updated JPM. 2. Section 3.1 and 3.3.1 of the joint validation and verification report has been updated with above assessment. Verra Review: The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding Round 2:	
3	Misleading information on SDGs contributions <u>Issue</u> Table 1 of the joint project description and monitoring report states that the net impact of the project on the 6.3.1 SDG indicator is to decrease the proportion of domestic and industrial wastewater flows safely treated, while the net impact should be to increase. <u>Action item</u> The VVB must ensure that the project proponent includes, in Table 1 of the joint project description and monitoring report, the correct contribution to the 6.3.1 SDG indicator. <u>Program rule(s) or methodology section</u> VCS Joint Project Description and Monitoring Report Template v4.1, Section 1.17	Round1: VVB Response: Via check the table 1 of the revised JPM, VVB confirmed it has been revised accordingly. Please refer to the table 1 of section 1.17.2 in the updated JPM. Verra Review: The typo has been corrected Round 2:	Closed
4	Incomplete information on consultation with local stakeholders <u>Issue</u> As per the information included in Section 2.2 of the joint project description and monitoring report and: a) Related to the stakeholder consultation undertaken before the construction of the project: it is not clear how the consultation process ensured that the stakeholders from all the 16 plants have been included since the meeting was conducted only in one location.	Round1: VVB Response: 1. a). The section 2.2 of JPM has been updated. Multiple measures have been taken to ensure that the stakeholders from all the 16 plants were invited to the consultation process, Firstly, posters of physical meetings were posted at the gates of the 16-wastewater treatment plants. The content of the poster includes key information of the project and the consultation meeting (location,	Closed

- b) Related to the consultation during the monitoring period: it is not clear what type of public announcements were put up at the villages near the project site and how the 320 questionnaires have been distributed.

Action Item

- 1) The VVB must ensure that the project proponent includes, in Section 2.2 of the joint project description and monitoring report, all the required information related to the consultations undertaken before the construction of the projects and during the monitoring period.
- 2) The VVB must further validate this information and update Section 3.3.2 of the joint validation and verification report as needed.

Program rule(s) or methodology section

VCS Joint Project Description and Monitoring Report Template v4.1, Section 2.2

VCS Joint Validation Verification Report Template v.4.1, Section 3.3.2

date and purpose) which has been confirmed by checking the LSC records.

Secondly, there are no barriers to go to the meeting place, which is located in the conference room of Yunshui Guangdong Environmental Protection Co., Ltd. The transportation in Guangdong Province is convenient. The local public transit network covers bus and train, the stakeholders can choose the most suitable transportation mode.

Thirdly, stakeholders involved in the 16 plants were also invited by emails and telephones. The above measures can ensure all the stakeholders involved in the 16 plants can be invited.

Finally, grievance mechanism of the project was established. The stakeholders who cannot participate the consultation meeting can contact PP through email, telephone or the grievance book. The contact information of PP was announced to the stakeholders through the posters and emails before the consultation meeting.

Thus based on above different approaches, VVB confirmed that the consultation process ensured that the stakeholders from all the 16 plants have been included.

- b) PP took the following steps:

During this monitoring period, questionnaire survey was adopted for stakeholder consultation. From 05-August-2020 to 10-August-2020, the project proponent put up public announcements at the villages near the project site. The purpose of this public announcements is to enable residents around the project to participate in the questionnaire survey. The content of the announcements mainly includes key information of the project, the way to participate the survey, the time period of the survey and contact information of the PP. The local residents who missed the questionnaire survey can contact the PP for further plan of the project.

The questionnaire survey was conducted by PP from 16-September-2020 to 26-September-2020. The questionnaires were distributed by the PP randomly in the surrounding areas of the 16 plants. There was a total of 6 questions in the questionnaire and it can be finished within 10 minutes. The completed questionnaires were collected by the PP immediately. Any other questions or suggestions about the project were also replied at the same time. 320 questionnaires were distributed during the survey and all questionnaires were collected.

	Detailed information about the stakeholder consultation process was added to section 2.2 of the JPM. 2. Section 3.3.2 of the joint validation and verification report has been updated with above assessment. Verra Review: The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding Round 2:	
5 Missing information on actions taken to mitigate potential negative environmental impacts <u>Issue</u> Sections 2.1/2.3 of the joint project description and monitoring report do not describe the actual actions taken in order to mitigate the potential negative environmental impacts described in the EIA(s) of the 16 plants. It shall be noted that most of the actions are described as proposed actions. Further, the title under Section 2.3 is not correct. <u>Action Item</u> 1. The VVB must ensure that the project proponent includes in Section 2.1 of the joint project description and monitoring report a clear description of the real actions taken in order to mitigate the potential environmental impacts and that the title under Section 2.3 is correct. 2. The VVB must validate the information provided by the project proponent and update Sections 3.3.1/3.3.3 of the joint validation and verification report as needed. <u>Program rule(s) or methodology section</u> VCS Joint Project Description and Monitoring Report Template v4.1, Section 2.1/2.3	Round1: VVB Response: 1. The actual actions taken in order to mitigate the potential negative environmental impacts during construction period and operation period has been added to section 2.1/2.3 of the updated JPM. 2. VVB has provided the assessment in Sections 3.3.1/3.3.3 of the joint validation and verification report as below, During the construction period, via interview with the local officer from local Environmental Protection Bureau/13/, it is confirmed that the potential environmental impacts have been sufficiently identified for the construction period, such as air pollution, wastewater, noise and solid waste etc. The conclusion of the analysis has been described in the Joint-PD-MR as per the EIA report/6/ and the related mitigation measures have been listed as per the approval of EIA report/7/. Due to the project has been implemented during the site inspection, it is confirmed that the impact during the construction period has been solved and no significant environmental impacts are expected from the project activity. Associated with the review of EIA, there was no adverse effect on the ecology, air, water and solid waste, for the project subject to the implementation of pollution mitigation measures according to the EIA report. There was also no any endangered species found in the project location. Verra Review:	Closed

VCS Joint Validation and Verification Report Template v4.1, Section 3.3.1/3.3.3	The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding
Round 2:	
6 Further demonstration and assessment required on applicability condition 1 and baseline S2 <u>Issue</u> Section 3.2 of the joint project description and monitoring report does not fully demonstrate how each project activity instance complies with condition 1 of AM0080, v.01 and baseline S2. <u>Action Item</u> 1) The VVB must ensure that the project proponent includes, in Section 3.2 of the joint project description and monitoring report, a detailed description on which were the 16 local landfills that received the sludge from each of the 16 anaerobic lagoons in the pre-project scenario, including: name, location and type of installations included for the methane recovery (including installation dates). 2) The VVB must validate this information and update Section 3.4.2 of the joint validation and verification report as needed. <u>Program rule(s) or methodology section</u> VCS Joint Project Description and Monitoring Report Template v4.1, Section 3.2 VCS Joint Validation Verification Report Template v.4.1, Section 3.4.2 <u>Background information</u> Applicability conditions AM0080, v.01 (page 2) The sludge produced in the aerobic wastewater treatment plant in the project activity is:	Round1: Closed VVB Response: 1) PP has updated the detailed description on which were the 16 local landfills that received the sludge from each of the 16 anaerobic lagoons in the pre-project scenario in JPM. The project introduces 16 aerobic wastewater treatment plant to treat rural residents' domestic wastewater in 16 regions of Guangdong Province. The previous 16 existing anaerobic open lagoons were replaced by the newly built aerobic wastewater treatment systems. As per the Baseline Survey Report, the sludge generated in this baseline scenarios was dried under controlled and aerobic conditions, and then sent to landfills with methane recovery for disposal (S2) respectively. As per Sludge Disposal Letter issued by Guangdong Housing and Urban-Rural Development Bureau, the sludge generated in this project scenario is also dried under controlled and aerobic conditions, and then sent to the same landfills with methane recovery for disposal (S2) respectively. Therefore, the sludge produced in the aerobic wastewater treatment plants in the project activity is treated in the same way as the sludge that would have been produced in the anaerobic open lagoons. They are all dried under controlled and aerobic conditions, and then sent to the same landfills with methane recovery for disposal (S2). As above, each project activity instance complies with condition 1 of AM0080, v.01 and baseline S2. Please refer to section 3.2 of the revised JPM for more details. So based on above demonstration, the landfills are not included in the project boundary, and they are not associated facilities of the project. The contracts signed between the project owner and the landfills can also be used as evidence. 2) Section 3.4.2 of the VVR has been updated accordingly. Verra Review:

Treated in the same way as the sludge that would have been produced in the anaerobic open lagoons system in the baseline scenario would have been treated. This includes one of the following two options: (i) the sludge is dumped or left to decay; or (ii) the sludge is dried under controlled and aerobic conditions, and then disposed to a landfill with methane recovery or used in soil application.

(page 3)

Finally, this methodology is only applicable if the most plausible baseline scenario, as determined by the "Procedure for the identification of the most plausible baseline scenario and assessment of additionality" further below in this methodology, is that: The sludge that would have been produced in the baseline lagoons system would have been dumped or left to decay (S1), or dried under controlled and aerobic conditions and then disposed to a landfill with methane recovery or used in soil application (S2).

The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding

Round 2:

7

Further demonstration and assessment required for baseline W3

Round1:

Closed

Issue

Section 3.4 of the joint project description and monitoring report does not fully demonstrate how each of the 16 existing anaerobic open lagoons are a plausible baseline alternative to the project activity since there is no specific information on how each of the lagoon systems complied with the applicable water quality/discharge standards.

Action Item

- 1) The VVB must ensure that the project proponent includes, in Section 3.4 of the joint project description and monitoring report, a detailed description on how each of the 16 anaerobic open lagoons that existed in the pre-project scenario complied with the applicable water quality/discharge standards.

VVB Response:

1. Via checking the FSR/5/ and baseline survey report/13/, it is confirmed that the 16 plants' wastewater amount treated and COD (influent and effluent) in the project scenario are the same with that of the baseline scenario and the water consumption and wastewater type of the 16 rural areas remains stable² which is also confirmed in the FSR. Based on the local expertise of VVB and searching the national standard of wastewater treatment, VVB confirmed that the treated wastewater should meet Level A standard (50mg/L) of the "Emission Standard for Pollutants from Municipal Wastewater Treatment Plants (GB18918-2002)" and the level 1 standard of the Guangdong local standards "water pollutants emission limits (DB44/26-2001)" (40mg/L) regardless of what treatment technology. Therefore, VVB confirmed that the analysis for the baseline scenario is reasonable and 16 anaerobic open lagoons that existed in the pre-project scenario complied with the applicable water quality/discharge standards.

Commented [Office1]: I think this info is crucial as there 3 lagoons that had a COD effluent higher than 100 as per page 99 of the PD-MR (I do not know the limit in China but in Argentina that is the value for discharging in rivers).

Further, please note what footnote 2 of the methodology states: The reason for a mandatory use of an investment analysis for this type of project activities is that aerobic wastewater treatment plants are often used as a preferred option in situations where tight water quality standards are required. Under such circumstances, the use of anaerobic open lagoons systems could become prohibitively expensive or even technically not feasible. Therefore, the assessment of having anaerobic open lagoons systems as a credible alternative to the proposed CDM project activity depends mainly on the costs of both options based on the project specific circumstances (e.g., water standards to be met, land availability, etc.). A barrier analysis, for example by using a "first of a kind" argument, could result in the project claiming emission reductions which never would have been a realistic alternative to the project activity.

²According to the 7th National Population Census Bulletin of Guangdong Province (<http://stats.gd.gov.cn/attachment/0/421/421375/3284461.pdf>), the rural population in Guangdong Province has remained relatively stable from 2010 to 2020. So the population of the 16 regions where the project is located was stable during this period and is likely to remain stable for a considerable period in the future. It can be inferred that the water consumption of residents will also remain stable.

	2) The VVB must validate this information and update Section 3.4.4 of the joint validation and verification report as needed. <u>Program rule(s) or methodology section</u> VCS Joint Project Description and Monitoring Report Template v4.1, Section 3.2 VCS Joint Validation Verification Report Template v.4.1, Section 3.4.2	Besides, the unit of COD more than 100 is total mass per year (tCOD/a) instead of mg/L. In China, the wastewater discharge control parameter is usually in the unit of mg/L. 2. Section 3.4.4 of the VVR has been updated accordingly. Verra Review: The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding Round 2:
8	Missing information of FSR and Sludge Disposal Letter <u>Issue</u> The joint project description and monitoring report does not indicate the dates of the FSR and Sludge Disposal Letter. Further, it is not clear if only one FSR was approved since the project activity consists of 16 plants. <u>Action Item</u> The VVB must ensure that the project proponent includes all the required information on the FSR and Sludge Disposal Letter in the joint project description and monitoring report. <u>Program rule(s) or methodology section</u> VCS Joint Project Description and Monitoring Report Template v4.1	Round1: Closed VVB Response: The dates of the FSR and Sludge Disposal Letter has been added to the revised JPM (Version 03) which are verified as actual and correct. All the 16 wastewater treatment plants belong to the same PP. The planned construction time of these plants is about the same, and the same aerobic treatment process (A2O+MBR) was used. And then, considering that these 16 wastewater treatment plants have the characteristics of small scale and large quantity. So the 16 plants were summarized as a consolidated project to complete the one FSR and one EIA. However, the design proposal for each plant was made according to its different capacity. The FSR was finally approved by Guangdong Provincial Government, which covered all the 16 plants. Verra Review: The Joint PD-MR has been sufficiently updated to close the finding Round 2:
9	Further clarification required on investment analysis <u>Issue</u> The investment analysis has been conducted as per the comparison of the unit cost of wastewater treatment (UCWT) for Alternative 1 and Alternative 2. Further clarification is required on the appropriateness	Round1: Closed VVB Response: 1. As mentioned above, one FSR was made for the whole 16 wastewater plants. Open anerobic lagoons were used in the baseline scenario. Anerobic treatment process (A2O+MBR) was used in the project scenario. Even if each plants have different service capacity, to achieve the Level A wastewater discharge

of calculating one UCWT for Alternative 1 given that the project activity includes 16 plants.

Action Item

1. The VVB must ensure that the project proponent clearly demonstrates in Section 3.5 of the joint project description and monitoring report, the suitability of calculating only one UCWT for Alternative 1 given that the project consists of 16 plants.
2. The VVB must validate this information and update Section 3.4.5 of the joint validation and verification report as needed.

Program rule(s) or methodology section

VCS Joint Project Description and Monitoring Report Template v4.1, Section 3.5

VCS Joint Validation Verification Report Template v.4.1, Section 3.4.5

standard, the unit cost of wastewater treatment is within a relatively fixed range for the same treatment technology³. As per the calculation results of UCWT, in baseline and project scenario was 0.5 and 1.87 separately. UCWT in the project scenario is 3.74 time to the baseline scenario.

2. Section 3.4.5 of the VVR has been updated accordingly.

Verra Review:

The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding

Round 2:

Commented [Office2]: This issue is also linked to the FSR issue, as it is not clear if the FSR includes all the 16 plants....

Commented [DL3R2]: I agree

10 Incorrect approach of common practice analysis

Round1:

Closed

Issue

The common practice analysis has been performed considering the output capacity as +/-50% of the total capacity of the 16 plants, which is not correct since it has to be calculated considering the capacity of each individual plant.

Action Item

1. The VVB must ensure that the project proponent calculates correctly the capacity range for the common practice analysis, in Section 3.5 of the joint project description and monitoring report.

VVB Response:

1. As mentioned above, the project made the 16 wastewater treatment plants as a consolidated project. Via checking the VCS standard 3.6.6, it requests that "*The baseline determination and additionality demonstration for all project activity instances in a project shall be combined*". Furthermore, as per requirements of Step 1 of Tool 24 (Version 03.1), range as +/-50% of the total design capacity of the project should be calculated. Hence it is confirmed that the total capacity of the 16 plants have to be considered rather than the capacity of each individual plant. As per the requirements of Step 2 of Tool 24 (Version 03.1), similar projects should meet all the following conditions,
 - 1) The project activity is not CDM project activities;

³ <https://www.ceett.org.cn/huanbao/static/file/upload/20200415173752607.pdf>. The data in this report shows that the unit cost of aerobic wastewater treatment technology is always higher than that of open anaerobic lagoons when wastewater discharge standard achieves the Level A.

2. The VVB must validate this information (including the existence of similar plants in the province with the new capacity range) and update Section 3.4.5 of the joint validation and verification report as needed.

Program rule(s) or methodology section

TOOL24, v.3.1

VCS Joint Project Description and Monitoring Report Template v4.1, Section 3.5

VCS Joint Validation and Verification Report Template v4.1, Section 3.4.5

- 2) The project activity belongs to "avoiding methane formation" with treatment of wastewater treatment before 03-September-2020;
- 3) The project activity is aerobic wastewater treatment process, the treated effluent meets the Level A standard of the "Emission Standard for Pollutants from Municipal Wastewater Treatment Plants (GB18918-2002)" and the level 1 standard of the Guangdong local standards "water pollutants emission limits (DB44/26-2001) ", and the sludge is dried under controlled and aerobic conditions, and then transported to the landfills with methane recovery for landfill treatment;
- 4) The wastewater treatment capacity is 87,575 m³/d–262,725 m³/d in Guangdong Province.

For condition 3), as per Emission Standard for Pollutants from Municipal Wastewater Treatment Plants (GB18918-2002) and Emission Standard for Pollutants from Municipal Wastewater Treatment Plants (GB18918-2002), Level A and Level 1 standard is the most strictest wastewater discharge standard.

For condition 4), by searching the website of Department of Ecology and Environment of Guangdong Province, which is responsible for EIA approval, there is no wastewater treatment plant with the capacity between 87,575 m³/d–262,725 m³/d. Therefore, there is no aerobic wastewater treatment plant that can meet all the above conditions at the same time. No similar projects are identified.

2. Section 3.4.5 of the VVR has been updated accordingly.

Verra Review:

The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding

Round 2:

Commented [Office4]: Seems to me a Little bit strange that there are no sewage aerobic treatment plants in the whole province....but the VVB mentions that they have checked official sources....I do not know how to raise an issue on that since I cannot check the linked sources as they are in Chinese.

Commented [DL5R4]: The VVB must explain in English of course how it checked

11	Updated version of IPCC Guidelines to be used	Closed
	Issue	
	The joint project description and monitoring report uses the 2006 IPCC Guidelines for National Greenhouse Gas Inventories to determine and calculate the default and ex-ante values used in the emission reduction calculations, while the updated 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories shall be used.	
	Action item	
	1. The VVB must ensure that the project proponent uses data from the 2019 Refinement to the 2006 IPCC Guidelines for the calculation of the ex-ante and default values used in the project description. 2. The VVB must validate that the ex-ante and default parameters used by the project proponent have been sourced and calculated with data from the most recent available IPCC Guidelines.	
	Program rule(s) or methodology section	
	2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories	
	Round1:	
	VVB Response:	
	1. The latest version of the IPCC guideline is “2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories”. For the parameters that are not revised in the 2019 version, the values in 2006 version will still be used. The parameters sourced from the IPCC guideline are summarized as follows, For the parameter of B_0 (Maximum methane producing capacity of wastewater treated in the year y, expressing the maximum amount of CH_4 that can be produced from a given quantity of chemical oxygen demand), as per Table 6.2 Volume 5 Chapter 6 of IPCC 2019, the results 0.25 kg CH_4/kg COD is the same with that of IPCC 2006. However, as per the requirements of the applied methodology, the conservative value of 0.21 kg CH_4/kg COD should be used. Data source of B_0 has been updated to IPCC 2019 in the JPM. There is no update for the parameter of $EF_{BL,j,y}$, $EF_{PJ,j,y}$ (CO_2 emission factor of the transportation fuel j in the year y) in IPCC 2019. Therefore, the value for it is still 74.1 tCO_2/TJ, and data source of it is Table 3.2.1 Volume 2 Chapter 3. 2. The related parts in VVR has been updated accordingly with the latest reference of 2019 Refinement to the 2006 IPCC.	
	Verra Review:	
	The Joint VR have been sufficiently updated to close the finding	
	Round 2:	

12	Further clarification on monitored parameter T2,m <u>Issue</u> Section 5.5 of the joint project description and monitoring report states that the Average temperature at the project site in month m (T2,m) uses data from the local bureau while page 33 of AM0080, v.01 requires this parameter to be measured <i>on site</i>. <u>Action item</u> The VVB must ensure that the project proponent measures the parameter T2,m as per the applied methodology <u>Program rule(s) or methodology section</u> VCS Joint Project Description and Monitoring Report Template v4.1, Section 5.5	Round1: VVB Response: On-site measurement of the temperature was conducted by meteorological bureau of each town as per the requirements of the applied methodology. The monthly average temperature of the 16 plants during this monitoring period was summarized in temperature monitoring report for the 16 wastewater treatment plants. The higher the average temperature, the larger the related baseline emissions. To get the conservative value of the average temperature, the results were cross-checked with the public statistics. The lower value was used, which is sourced from: https://www.tianqi24.com/city/history.html. The related information has been updated in both JPM and VVR for this parameter. Verra Review: The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding Round 2:	Closed
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13	Misleading information on monitoring of $f_{PJ,d,y}$	Round1:	Closed
<u>Issue</u>		VVB Response:	
Section 5.2 of the joint project description and monitoring report is not clear on whether $f_{PJ,d,y}$ is going to be measured or not, since the information in the Frequency of monitoring/recording section states that the monthly measurements will be conducted and the average value will be calculated.		Via checking the Technical Construction Plan for Wastewater Treatment Plant which refer to the Standard for design of outdoor wastewater engineering ⁴ , the design depth of the effluent channels of the 16 wastewater treatment plants is not more than 1m ⁵ . As per the requirements of applied methodology for the parameter, if the depth on methane generation is less than 1m, the results of the parameter is 0%. The information in the Frequency of monitoring/recording has been changed to "N/A".	
<u>Action item</u>		The related information has been updated in both JPM and VVR for this parameter.	
<u>Program rule(s) or methodology section</u>		Verra Review:	
VCS Joint Project Description and Monitoring Report Template v4.1, Section 5.2		The Joint Joint VR have been sufficiently updated to close the finding	
		Round 2:	

⁴ <http://down.foodmate.net/standard/yulan.php?itemid=45559>

⁵ According to section 4.2.1 on page 27 and section 4.2.7 on page 29 of the Standard for design of outdoor wastewater engineering (GB 50014-2006), the calculation formula for the flow of effluent channels is $Q = A \cdot V$, where the flow rate (Q) is equal to the cross-sectional area (A) times the flow velocity (V). The flow rate range for 16 wastewater treatment plants in the project is 3700-28000m³/d. Calculated based on a flow velocity of 0.6 m/s, the diameter range of the drainage pipes is 0.15-0.4 m. Therefore, the diameter of the pipes for the 16 wastewater treatment plants does not exceed 1 m.

14	Further information required on pre-project scenario open anaerobic lagoons	Round1: Closed
<u>Issue</u>	Section 3.4 of the joint project description and monitoring report does not detail the residence time of the organic matter and the depth of each of the 16 open anaerobic lagoons used in the pre-project scenario.	VVB Response:
<u>Action Item</u>	1) The VVB must ensure that the project proponent includes, in Section 3.4 of the joint project description and monitoring report, a detailed description on the residence time of the organic matter and the depth of each of the open anaerobic lagoons used in the pre-project scenario. 2) The VVB must validate this information and update Section 3.4.4 of the joint validation and verification report as needed.	1. Via checking the local baseline survey report/13/, it is confirmed that for each of the 16 open anaerobic lagoons used in the pre-project scenario, the residence time of the organic matter are all one year, and depth are all more than 5m respectively. It has been added to section 3.4 of the revised JPM (Version 03). 2. Section 3.4.4 of VVR has been updated accordingly.
<u>Program rule(s) or methodology section</u>	VCS Joint Project Description and Monitoring Report Template v4.1, Section 3.4 VCS Joint Validation Verification Report Template v.4.1, Section 3.4.4	Verra Review:
<u>Background information</u>		The Joint PD-MR and the Joint VR have been sufficiently updated to close the finding
		Round 2:

15	Missing Information for calculation of estimated and achieved emission reductions	Round1: Closed
	<u>Issue</u> Sections 4.4 and 6.5 of the joint project description and monitoring report do not include sufficient information (such as which value has been used for each parameter of the equations) to allow the reader to reproduce the calculation of the estimated and achieved GHG emission reductions. The related spreadsheets have not been provided. <u>Action item</u> The VVB must ensure that the project proponent provides all the necessary information used in the emission reduction calculations in order to allow a third party to reproduce the results. Further, the related spreadsheets must be provided. <u>Program rule(s) or methodology section</u> VCS Joint Project Description and Monitoring Report Template v4.1, Sections 4.4 and 6.5	VVB Response: Please refer to the submitted document named <i>Yunshui_Emission reduction sheet_VCS_V03</i> and <i>MR-MP1-Yunshui_Emission reduction sheet_VCS_V03</i> for the detailed calculation process of ER in section 4 and section 6 of the MR. Due to the calculation process and used data are in big size, so it is not possible to show in the MR clearly all the data, so refer to the calculation process in ER sheet. Verra Review: The Joint PD-MR and the Joint VR have been sufficiently updated. The ex-ante and ex-post spreadsheets have also been submitted. Round 2:

16	Missing comparison of estimated and achieved emission reductions	Round1: Closed
<u>Issue</u>	The joint project description and monitoring report does not include the comparison between the estimated and achieved emission reductions during the monitoring period.	VVB Response:
<u>Action item</u>	1) The VVB must ensure that the project proponent includes, in Section 6.5 of the joint project description and monitoring report, the comparison between the estimated and achieved emission reductions during the monitoring period. 2) The VVB must verify this information and update Section 4.2 of the joint validation and verification report as needed.	1. The comparison between the estimated and achieved emission reductions during the monitoring period has been added to section 6.5 of the revised JPM (Version 03). 2. Section 4.2 of the VVR has been updated with related assessment.
<u>Program rule(s) or methodology section</u>	VCS Joint Project Description and Monitoring Report Template v4.1, Section 6.5 VCS Joint Validation Verification Report Template v.4.1, Section 4.2	Verra Review:
		The same is included and the lower values are sufficiently and reasonably justified.
		Round 2:

17	Incorrect dates for emission reductions periods	Round1: Closed
<u>Issue</u>		VVB Response:
Section 4.4 of the joint project description and monitoring report includes end dates of emission reductions period which are later than the end date of the crediting period (i.e., 02 September 2030). Further, the start dates of the emission reductions periods are duplicated for each plant.		1. The section 4.4 of updated JPM has been checked, it is confirmed that the end date of the crediting period should be 02-September-2030, all the typo error to the end date has been revised. Besides, the duplicated start dates of the emission reductions periods have been removed. 2. No need to update the VVR as no fault.
<u>Action item</u>		Verra Review:
1) The VVB must ensure that the project proponent corrects the start dates and end dates of the emission reductions periods for each treatment plant in line with the start and end date of the crediting period. 2) The VVB must verify this information and update the joint validation and verification report as needed.		The Joint VR has been sufficiently updated to close the finding.
<u>Program rule(s) or methodology section</u>		Round 2:
VCS Joint Project Description and Monitoring Report Template v4.1, Section 4.4		
VCS Joint Validation Verification Report Template v.4.1		

18	Further clarification on plants visited	Round1:	Closed
<u>Issue</u>		VVB Response:	
As per the information provided in Section 2.4 of the joint validation and verification report, it remains unclear how many and which have been the treatment plants visited.		Pls check the section 2.3 for the interview list of all the representatives, it is clearly shown that all the treatment plants have been visited.	
<u>Action item</u>		And the section 2.4 has been updated with clear information clearly.	
1) The VVB must further explain which and how many treatment plants have been visited during the site inspection activities and, if all not all the plants have been visited, further elaborate how a reasonable level of assurance was achieved.		Verra Review:	
<u>Program rule(s) or methodology section</u>		Round 2:	
VCS Joint Validation Verification Report Template v.4.1., Section 2.4		The response is found to be sufficient to close the finding.	