



Verification and certification report form for  
GS project activities  
(Version 04.0)

**BASIC INFORMATION**

<b>Title and GS4GG reference number of the project activity</b>	Water for Climate Rwanda Project (GS 6598_GS4GG)
<b>Scale of the project activity</b>	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale
<b>Version number of the verification and certification report</b>	1.2
<b>Completion date of the verification and certification report</b>	11/03/2024
<b>Monitoring period number and duration of this monitoring period</b>	4 <sup>th</sup> Monitoring Period. Duration: 01/01/2022 to 31/12/2022 (including both days)
<b>Version number of the monitoring report to which this report applies</b>	v7.0 of 08/03/2024
<b>Crediting period of the project activity corresponding to this monitoring period</b>	01/03/2019 to 29/02/2024
<b>Project participants</b>	CO2logic
<b>Host Party</b>	Rwanda
<b>Applied methodologies and standardized baselines</b>	Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1
<b>Mandatory sectoral scopes</b>	Sectoral Scope 03: Energy Demand
<b>Conditional sectoral scopes, if applicable</b>	N/A
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD</b>	64,558 tCO <sub>2</sub> e
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period</b>	56,311 tCO <sub>2</sub> e
<b>SDG Impacts:</b>	1 – SDG 1: No Poverty 2 – SDG 3: Good Health and Well-Being 3 – SDG 5: Gender 4 – SDG 6: Clean Water and Sanitation 5 – SDG 13: Climate
<b>Name and UNFCCC reference number of the VVB</b>	E-0052: Carbon Check (India) Private Limited

<p>Name, position and signature of the approver of the verification and certification report</p>	<p><i>Sanjay Agarwalla</i> Sanjay Kumar Agarwalla, Technical Director</p>
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## SECTION A. Executive summary

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The Project Participant, CO2logic has appointed /10/ the Validation & verification body (VVB), Carbon Check (India) Private Ltd. (CCIPL) to perform 4<sup>th</sup> periodic verification of the GS Project Activity “Water for Climate Rwanda Project” in Rwanda (hereafter referred to as “Project Activity”). The project activity “Water for Climate Rwanda Project” involves Water Access Rwanda (WAR) together with CO2logic and Mkaarbon safari implementation of a project to provide safe drinking water to communities in the districts of Rusizi, Ngoma, Rwamagana, Bugesera, Kirehe and Nyagatare.

The project consists of the repair of damaged and defunct boreholes, the drilling of new boreholes and new water points belonging to a stand-pipe system. The rehabilitation of boreholes or provision of new safe water supply points reduces the need for households to boil water as a means of purification or to consume unsafe water being the scenario prior to implementation of the project activity. Boreholes consists of only one water point (being at the location of the borehole) or several water points if a stand-pipe system is connected to a borehole.

This report summarises the findings of the verification of the project, performed on the basis of Gold standard for global goals (GS4GG), as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the Gold Standard. Verification is required for all registered GS project activities intending to confirm their achieved emission reductions and proceed with request for issuance of ERs. This report contains the findings and resolutions from the verification and a certification statement for the verified emission reductions.

Verification is the periodic independent review and ex-post determination of both quantitative and qualitative information by a Validation & verification body (VVB) of the monitored reductions in GHG emissions that have occurred as a result of the registered CDM project activity during a defined monitoring period.

Certification is the written assurance by a Validation & verification body (VVB) that, during a specific period, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the “Water for Climate Rwanda Project” in the host country “Rwanda” for the current monitoring period 01/01/2022 to 31/12/2022 (including both the days).

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data and used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and presented in a concise and transparent manner. CCIPL’s objective is to perform a thorough, independent assessment of the registered project activity.

In particular, the monitoring plan, monitoring report and the project’s compliance with relevant GS and host Party criteria are verified in order to confirm that the component project/s has/have been implemented in accordance with the previously registered project design and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with the registered PDD and the approved monitoring methodology.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered PDD
- To verify the implemented monitoring plan with the registered PDD and applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.

- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

Verification process:

The verification comprises a review of the monitoring report /01-e/ over the monitoring period from 01/01/2022 to 31/12/2022 and based on the revised/registered PDD/09/ in part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by project participant.

Onsite interviews are also performed as part of the verification process.

Conclusion:

The verification team assigned by the Validation & verification body (VVB) concludes that the monitoring report /01-e/, meet all relevant requirements of the Gold Standard as per the requirements of GS4GG /B01-a/. The verification has been conducted in-line with the GS4GG requirements.

The project activity was correctly implemented according to the selected monitoring methodology, monitoring plan and the registered PDD /09/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. The following table provides the resulted emission reduction from the project as verified through the document review and onsite interviews by the verification team. CCIPL as a Validation & verification body (VVB) is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

**SECTION B. Verification team, technical reviewer and approver**

**B.1. Verification team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	Onsite inspection	Interviews	Verification findings
1.	Team Leader/ Technical Expert	IR	Raychoudhury	Rishi K.	CCIPL	X	X	X	X
2.	Trainee Assessor	IR	Raj	Piyush	CCIPL	X	X	X	X
3.	Local Expert	ER	Emmanuel	Ndahiro	CCIPL	NA	X	X	NA

**B.2. Technical reviewer and approver of the verification and certification report**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	C	Indumathi.	CCIPL
2.	Approver	IR	Agarwalla	Sanjay Kumar	CCIPL

**SECTION C. Application of materiality**

The threshold of materiality was evaluated based on “GS4GG – Validation and Verification standard, version 1.0 para. 9.6.3 /B01-b/. It was concluded that the materiality threshold applicable to the project activity based on actual emission reductions achieved is 2% of 56,311 tCO<sub>2e</sub> which is equal to 1,126 tCO<sub>2e</sub>.

In planning the verification, verification team took cognizance of para. 9.6.3 of the “GS4GG – Validation and Verification standard, version 1.0” / B01-b / and a materiality threshold of 1,126 tCO<sub>2e</sub> is determined for the current verification of the project activity.

**C.1. Consideration of materiality in planning the verification**

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human Error: Recording and reporting of the information in the ER spreadsheet.	Medium	All the ER spreadsheet data of the safe drinking water, determination of parameters for safe water per person per day including data calculation. This includes all the parameters to be monitored ex-post as per the PDD	The risk was mitigated by reviewing the training records of the personnel involved in the data capture and calculations. The monitoring responsibilities will be reviewed. Also, the ER data/calculations will be cross-checked to insure error-free data.
2.	Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Medium	The data is recorded in spreadsheets based on the raw data collected during the field visits. Access to the spreadsheets for calculation of ERs, monitoring and sales database and baseline project & baseline, and other test records.	The identified risk was mitigated by reviewing the management of access to the records. It will be confirmed through interviews whether the raw data is collected by the field personnel and then transmitted and stored electronically to the PP's office. The data quality control to be checked.
3.	Sample	Medium	The sample size is not suitable, or the surveyed plants are not random (If applicable)	Cross-check the procedure to identify the sample size against the sampling guideline and standard and confirm the sample size is calculated correctly.

**C.2. Consideration of materiality in conducting the verification**

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In line with the GS4GG – Validation and Verification standard, version 1.0 para. 9.6.2 /B01-b/ in verification, a reasonable level of assurance is defined for the verification of the project by complete verification of all the monitoring records was done by the verification team and compared with the values indicated in the emission reduction spreadsheet.

Some inconsistencies were identified and subsequently finding was raised. These findings are detailed in Appendix 4.

## **SECTION D. Means of verification**

### **D.1. Desk/document review**

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The verification was performed primarily based on the review of the Monitoring report /01-e/ and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodology. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

### **D.2. On-site inspection**

Onsite physical audit has been performed. The Team leader with one team member and local expert has conducted the on-site inspection and in particular the acceptance sampling.

Furthermore, VVB has considered the Site Visit and Remote Audit Requirements and Procedures, version 2.0/B02/ for conducting the onsite visit in accordance with the requirements provided in the para. 3.1.1(b) of the Site Visit and Remote Audit Requirements and Procedures, version 2.0/B02/.

### **D.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Borreguero	Carlos Garcia	CO2logic	12/12/2023 to 15/12/2023	Project implementation and operation, monitoring procedure, data and information flow, VER calculation and completeness of monitoring report, QA/QC Procedures, Quality Assurance – Management and operating system	Rishi K Raychoudhury
2.	Hategekimana	Vanessa	COO- Water Access Rwanda (WAR)	12/12/2023 to 15/12/2023		Piyush Raj
3.	Iradukunda	Didier	WAR	12/12/2023 to 15/12/2023		Ndahiro Emmanuel
4.	Iragena	Aurore	WAR	12/12/2023 to 15/12/2023		
6.	Napomou	Myanyantwari jaena	Kisok Attendant (WAR)	12/12/2023		E-coli test, training & operational of water points
7.	Claudinae	Musabya Maria	Household (Survey ID - 451123534)	12/12/2023	Project survey, campaigns, WCFT and project's SD impacts	
8.	Xuverine	Uwimanimpaye	Kisok Attendant (WAR)	13/12/2023	E-coli test, training & operational of water points	Rishi K Raychoudhury
9.	Vincent	Sibomana	Household (Survey ID - 453272667)	13/12/2023	Project survey, campaigns, WCFT and project's SD impacts	Piyush Raj
10.	Dative	Iyamuremye	Local Health Authority	13/12/2023	E-coli test procedure (Wet Season)	Ndahiro Emmanuel
11.	Gatete	Pacific	Kisok Attendant/ Technician (WAR)	13/12/2023	E-coli test, training & operational of water points	
12.	Anitha	Musabyemaria	Household (Survey ID - 451651930)	13/12/2023	Project survey, campaigns, WCFT and project's SD impacts	
13.	Beatrice	Musabende	Kisok Attendant (WAR)	13/12/2023	E-coli test, training & operational of water points	
14.	Jeanette	Nikuze	Household (Survey ID - 451604426)	13/12/2023	Project survey, campaigns, WCFT and project's SD impacts	Rishi K Raychoudhury
15.	Francoiss	Mukamana	Local Health Authority	13/12/2023	E-coli test procedure (Wet Season)	Piyush Raj
						Ndahiro Emmanuel

16.	Marthe	Uwamahoro	WASH committee head	13/12/2023	Project survey, trainings, campaigns, WCFT and project's SD impacts	
17.	Dative	Musabimana	Household (Survey ID - 483564181)	13/12/2023	Project survey, campaigns, WCFT and project's SD impacts	
18.	Charlotte	Muhimpundu	Household (Survey ID - 453238177)	14/12/2023	Project survey, campaigns, WCFT and project's SD impacts	
19.	Pascaline	Uwamurera	Household (Survey ID - 453272636)	14/12/2023	Project survey, campaigns, WCFT and project's SD impacts	
20.	Janvier	Tuyisenge	Local Health Authority	14/12/2023	E-coli test procedure (Wet Season)	Rishi K Raychoudhury
21.	Oliver	Mukamazi mpaka	Local Health Authority	14/12/2023	E-coli test procedure (Wet Season)	Piyush Raj
22.	Alphonsine / Augustin	Mukamarirwa / Surwumwe	Household (Survey ID - 454760303)	14/12/2023	Project survey, campaigns, WCFT and project's SD impacts	Ndahiro Emmanuel
23.	Felix	Twizeyumu kiza	Technician - WAR	14/12/2023	E-coli test, training & operational hours of water points	
24.	Felicite	Nikuze	LSC (726236436)	14/12/2023	Knowledge of PA & Benefits of PA	
25.	De dien	Iyakare Jean	IPRC (Accredited Lab)	15/12/2023	Biennial E-coli Test	

#### D.4. Sampling approach

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##### PD's sampling approach:

PD has proposed simple random sampling plan using 90/10 as confidence / precision for annual monitoring. This is in line with the applied methodology /B05/. The sample size for each parameter is determined following guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0 (EB86, Annex 4) /B06/.

The monitoring parameters monitored through the sampling plan are:

- 1) Number of person days consuming water supplied by project scenario p through year y
- 2) Quantity of safe water supplied in the project scenario p during the year y, using the "zero or low" emissions' clean water supply technology
- 3) Quantity of raw or unsafe water that is still boiled after installation of the water treatment technology.
- 4) Quantity of safe (treated, or from safe supply) water boiled in the project scenario p, after installation of project technology
- 5) Usage rate in project scenario p during year y



- 6) Leakage in project scenario p during year y
- 7) Performance of the treatment technology – less than 1 Colony Forming Unit (CFU) of E-Coli / 100 ml of safe water
- 8) Hygiene campaigns carried out among project technology users.
- 9) Quantity of grid electricity consumed for pumping water in a standpipe system to the different water points in year y.
- 10) Quantity of diesel consumed for pumping water in a standpipe system to the different water points or any other water point in year y
- 11) Proportion of households perceiving less often incidence of water borne diseases like cholera, diarrhea, typhoid fever or Hepatitis A/E since the start of the project in year y
- 12) Proportion of women in households perceiving reduced amount of time and effort spent for collecting water and wood fuel since the start of the project in year y
- 13) Number of organized Water Sanitation and Hygiene trainings in year y

### CC IPL's verification sampling approach:

As per para. 25 of the Standard: Sampling and surveys for CDM project activities and programmes of activities (version 09.0) /B07/, the verification team has to verify whether the project participant have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan. The verification includes determining:

- (a) Whether the required confidence/precision has been met;
- (b) Whether the selected sample was representative of the population.

In line with para. 26 of the Standard: Sampling and surveys for CDM project activities and programmes of activities (version 09.0) /B07/, the verification team has applied a sampling approach for onsite surveys as part of verification. Since PD had applied a sampling approach, the verification team has chosen acceptance sampling for monitoring parameters in accordance with para. 28 of the Standard: Sampling and surveys for CDM project activities and programmes of activities (version 09.0) /B07/.

CC IPL has considered para. 39 (a) of "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 09.0" /B07/ for determining the sampling size to be visited by VVB. In case of the current verification, the estimated emission reduction is 64,558 tCO<sub>2</sub>e per year, the verification team determined the sample size for acceptance sampling by evaluating the following, using its own professional judgment and guidance in the Standard 'Sampling and surveys for CDM project activities and programme of activities' version 09.0 /B07/: Considering Acceptable Quality Level (AQL): 0.5% Unacceptable Quality Level (UQL): 20% and producer risk of 5% and consumer risk of 20% a sample size of 8 was required as per Table 2 in the referred Standard /B07/. Acceptance number (c) thus determined for the sample size is 0. CC IPL choose 8 samples to verify the project activity. The verification team selected random samples from PD's sample list. The operational status of project systems was checked during the onsite audit for the identified samples. The water point details (unique serial number, date of commissioning, , technology, name of user and address) were also checked and found to be consistent with that reported in the installation database. Some inconsistency was observed in 1 sample out of the 8 samples i.e., one household denied using water from project water point, with respect to the observations interviews & document review that reported in the survey report /05/. PD has made appropriate reasonable adjustment in ERs for inconsistency in line with para. 36 of "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 09.0" /B07/ which further reduce ERs from initial calculation /02-d/. This assessment of the selected samples was done to ascertain the implementation status of the project activity w.r.t. the operational of water points, serial number, location, consumption of safe water from water points etc.

### D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	-	CAR 01	-
Compliance of the project implementation and operation with the registered PDD	CL 01	CAR 02	-
Post-registration changes	-	-	-
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	CL 02 CL 03	CAR 03	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	CL 04	CAR 04 CAR 05	-
Assessment of reported sustainable development co-benefits	CL 05	-	-
Global stakeholder consultation	-	-	-
Others (please specify) Previous Verification FAR	-	-	-
<b>Total</b>	<b>05</b>	<b>05</b>	<b>00</b>

## SECTION E. Verification findings

### E.1. Compliance of the monitoring report with the monitoring report form

<b>Means of verification</b>	Desk Review & Interview
<b>Findings</b>	CAR 01 was raised and closed satisfactorily. Kindly refer appendix 4 for more details.
<b>Conclusion</b>	VVB confirms that the monitoring report version 7.0 of 08/03/2024 /01-e/ and earlier versions are prepared using GS monitoring report template version 1.1 of 14/10/2020 /B03/ which is the latest available template and completed with relevant information as per the template requirement.

### E.2. Remaining forward action requests from validation and/or previous verifications

<b>Means of verification</b>	Desk Review and Interview
<b>Findings</b>	No finding raised.
<b>Conclusion</b>	There was no forward action requests from the previous verification.

### E.3. Compliance of the project implementation and operation with the registered project design document

<b>Means of verification</b>	Desk Review and Interview
<b>Findings</b>	CL 01 & CAR 02 was raised and closed satisfactorily. Kindly refer appendix 4 for more details.
<b>Conclusion</b>	<p>CCIPL by means of onsite interviews and document review, assessed that all the features (technology, project equipment and monitoring) of the registered PDD /09/ are in place and that the project participants have operated the project as per the registered PDD /09/.</p> <p>The location of the project activity is clearly defined in the registered PDD /09/. Water Access Rwanda (WAR) together with CO2logic and mkaarbon safari has implemented a project to provide safe drinking water to communities in the districts of Rusizi, Ngoma, Rwamagana, Bugesera, Kirehe and Nyagatare. The company SPADEL has provided the funding for the project.</p> <p>The project consists of the repair of damaged and defunct boreholes, the drilling of new boreholes and new water points belonging to a stand-pipe system. The rehabilitation of boreholes or provision of new safe water supply points reduces</p>

the need for households to boil water as a means of purification or to consume unsafe water being the scenario prior to implementation of the project activity.

Boreholes consists of only one water point (being at the location of the borehole) or several water points if a stand-pipe system is connected to a borehole. In case of a standpipe system water is pumped from the borehole to different water points using solar energy. In case solar energy is not available, diesel generators are used. No grid electricity has been used during this monitoring period.

The project has implemented 61 water points /04/ out of which 12 water points belong to 2 stand-pipe systems, with 7 water points (Rukoronko standpipe system in Bugesera).

These water points consist of either boreholes or standpipe system. The standpipe system is operated by Solar PV during the reported monitored period and the same was confirmed during the onsite interviews.

Thus, there was no grid electricity, however for one diesel generators (in the standpipe systems Rukoronko) have been used from time to time as a back-up to solar energy during this monitoring period by the project and PD has appropriately accounted for the project emission on account of same.

The district wise /04/ breakup of the water points are as below:

- Rusizi: 16 water points
- Rwamagana: 8 water points
- Ngoma: 9 water points
- Bugesera: 12 water points
- Kirehe: 12 water points
- Nyagatare: 4 water points

The start date of the project activity is 03/10/2018 as per the registered PDD /09/, that is the date on which the first borehole has been rehabilitated /11/ under this project activity. This is the real action taken by the PD in accordance with the "Glossary of CDM term".

As verified through document review and onsite interviews, the project implementation and operation, all physical features of the project comply with the project design document /09/.

Verification team has checked the information in the monitoring report /01-e/ and compared against the registered PDD /09/ and found consistent.

Verification team-based review of provide documents and onsite interviews has checked the project location, implementation, technology applied, project equipment, physical features and monitoring system against the information in the registered/revised PDD /09/.

The verification team based on onsite interviews and document review, was able to conclude that the project activity has been commissioned and implemented as per the registered PDD /09/ and that physical features of the project are in place.

Verification team confirms that:

- a) The project activity is implemented as per registered PDD /09/.
- b) The actual operation of the proposed CDM project activity is in line with the registered PDD /09/.
- c) It has reviewed the registered PDD /09/ including the monitoring plan, the applied monitoring methodology and found that the final MR/01-e/ for this monitoring period is in line with all the above-mentioned documents.

Verification team of CCIPL has also reviewed the following documents, which confirms that a robust and effective grievance addressable mechanism is in place

	<p>and the same is being followed by the PD and also during the reported monitoring period:</p> <ol style="list-style-type: none"> <li>1. Grievance Register /06/ which includes summary of grievance received/recorded during the monitoring period.</li> <li>2. Records of Grievance handled during the monitoring period /06/. The addressal of Grievance is being done in a way to resolve any technical issue. The technical improvements at the water points to address any Grievance was also checked during the onsite interviews of the sample water points.</li> </ol> <p>In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered PDD /09/.</p>
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#### **E.4. Post-registration changes**

##### **E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents<sup>1</sup>**

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Verification team based on review of the monitoring report and onsite interviews confirms the following deviations during the reported monitoring period:

Some of the water points were tested for E. coli with delays, i.e., some of them exceeded the 6 months for the 1st test after rehabilitation/drilling or start of commissioning (in case of standpipe water points) or the 3 months for subsequent E. coli tests. In such cases the project technology days have been only considered in the ER calculation, if the 2 consecutive tests were E. coli negative. No project technology days and hence no emission reductions have been accounted for in the period between a negative and a subsequent positive test or a positive and a subsequent negative test. No project technology days and hence no emission reductions would have been accounted for in the period between a negative and a subsequent positive test or a positive and a subsequent negative test. The worksheet tab 'E. coli delays' in the Project Water Point Database /03/ provides an overview of when E. coli tests would have been due and when they have been finally conducted. However, since there were no positive E. coli tests during this monitoring period, it was not needed to discount any project technology days due the delay of E. coli tests.

In the opinion of verification team, the approach opted by the PD for the deviation is appropriate as well as conservative (for section above) and thus acceptable to the verification team.

##### **E.4.2. Corrections**

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Not Applicable

##### **E.4.3. Changes to the start date of the crediting period**

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Not Applicable

##### **E.4.4. Inclusion of a monitoring plan**

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Not Applicable

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<sup>1</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

**E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents**

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1. To record diesel consumption using rulers or weighing scales as stated in the monitoring plan was not the actual monitoring system at the water point site. Instead, the hours and minutes are continuously recorded the diesel generators and the Diesel fuel consumption is then calculated by multiplying the time (HH:MM) the diesel generators are switched on by the calculated hourly consumption (based on manufacturer’s specifications and load factor). The calculated diesel fuel consumption is compared with the purchase receipts and in case that the value based on the purchase receipts is higher, the latter one is used for conservativeness.

In the opinion of verification team, the monitoring approach opted by the PD is appropriate as well and also represents the actual practice at the site and thus acceptable to the verification team. Verification team has reviewed the records /13/ to operation of DG set at two standpipe systems along with the calculation and receipt of diesel purchased. Based on this review, it can be confirmed that PD has opted the higher value of diesel (as per the purchase receipt) /13/ to account for the project emission and the same is deemed a conservative approach.

**E.4.6. Changes to the project design**

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The project participant has added diesel generators as additional back-up option besides grid electricity. Any emissions from diesel consumption would be taken into account in the ER calculation as soon as they are material, i.e., consist of more than 5% of the overall project emissions. VVB has verified this permanent change at the time of 1st issuance. No GSTAC approval or GS Design Change is needed. Since this design change is not considered to be material. Furthermore, as per the review of monitoring report /01/, revised PDD/09/ emission reduction spreadsheet/02/ and response received from GS on this clarification it can be verified that project emission from diesel generator /13/ cannot be considered as design change since it is expected to be lower than 5%.

**E.4.7. Changes specific to afforestation and reforestation project activities**

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Not Applicable

**E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	No findings raised.
<b>Conclusion</b>	The verification team has checked the actual monitoring plan against the registered monitoring plan /09/ and monitoring methodology /B05/ and applicable tools. Furthermore, the verification team has checked monitoring system by means of comparison with the information given in the monitoring plan and monitoring methodology. The monitoring plan is completely in accordance with the approved methodology /B05/ applied by the registered PDD /09/.

**E.6. Compliance of monitoring activities with the registered monitoring plan**

**E.6.1. Data and parameters fixed ex ante or at renewal of crediting period**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	No finding raised.
<b>Conclusion</b>	Verification team confirms that the data and parameters fixed ex ante are in compliance with the registered PDD /09/ and monitoring plan. Please refer to the Annex 1 for assessment of each parameter.

**E.6.2. Data and parameters monitored**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	CL 02, CL 03 & CAR 03 was raised and closed satisfactorily. Kindly refer appendix 4 for more details.
<b>Conclusion</b>	<p>The verification team confirms that the data and parameters monitored are in compliance with the registered PDD /09/ and the monitoring plan.</p> <p>It is confirmed that the verification team assessed the data / information flow from the point of monitoring to emission reduction calculation and found no gap in the same.</p> <p>Detailed assessment of each parameter has been provided in Annex 2.</p>

**E.6.3. Implementation of sampling plan**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	No findings raised.
<b>Conclusion</b>	<p>The Vérification team has note that as per the registered monitoring plan the following sampling is involve. The assesment for each of the parameter has been provided below.</p> <p><b><u>Leakage assessment</u></b></p> <p>As per the MR/01-e/ and Interview, Leakage assessment carried out in the 3<sup>rd</sup> MP is applicable to the fourth (4<sup>th</sup>) performance certification for the leakage assessment as per monitoring frequency mentioned in registered PDD /09/.</p> <p>a) The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project.</p> <p>The verification team find that above point is not applicable for the subject project. As per the MR/01-e/ the baseline technologies are referred to the devices used for water boiling which are three stone fires, traditional cookstoves and to a minor extent improved cookstoves and confirmed in a leakage survey in which 97% of the households confirmed to continue using the device for cooking and 3% confirmed to have destructed the device which was previously used for boiling (see excel file “220614 W4C-Leakage survey_clean_final.xlsx” for more details. Whereas, the verification Team crosscheck during the onsite audit and finds that the acceptance sampling confirmed the survey result provided by the PD and is deemed to be consistent and correct. All the interviewed /12/ HHs are using the Borehole. So, verification Team finds the project has no leakage.</p> <p>b) Non-project users who previously used lower emitting energy sources use the non renewable biomass or fossil fuels saved under the project activity.</p> <p>Not applicable and the verification team confirms that the no leakage is accounted for the subject project because the energy source used in the baseline for water boiling is firewood /09/. As per the MR/01-e/ and onsite audit /12/ of the leakage assesment, the verification team did not find any HHs using the non-GHG emitting methods like chlorine treatment for water purification.</p> <p>c) The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario.</p> <p>Not applicable. Due to the relatively small size of the project, it's not expected that it will have significant influence on the national NRB fraction.</p>

- d) The project population compensates for loss of the space heating effect of inefficient technology by adopting some other form of heating or by retaining some use of inefficient technology.

Not applicable. As it was confirmed in the leakage survey, none of the interviewed households has applied the boiling of drinking water at the same time for space heating.

- e) By virtue of promotion and marketing of new technology with high efficiency, the project stimulates substitution within households who commonly used a technology with relatively lower emissions, in cases where such a trend is not eligible as an evolving baseline.

Not applicable.

The verification Team finds that the project has no leakage through crosschecking the leakage survey Report /05/ and Interviews of HHs /12/.

#### **Usage/Monitoring Survey**

As per the applied methodology/registered monitoring plan, the minimum total sample size for Usage/Monitoring Survey is 100, with at least 30 samples for project technologies of each age being credited. Verification team confirms that PD has conducted simple random survey for 130 selected households.

Usage survey has been conducted together with the monitoring survey. Verification team based on review of sample list confirms that the samples were randomly selected /15/ by the Pd.

Simple random sampling was the applied as sampling method. The sampling frame consisted of all the households which were recorded in end-user lists by the WASH committees using the project water points.

A random number generator tool (<https://www.randomdraws.com/random-sequence-generator/>) was used to generate a random sample list amongst all households. Those households which were at the top of the list were selected for the survey, going down the list until the pre-defined sample size was reached.

The methodology requires to sample at least 100 households, however the PD decided to do some oversampling, hence 130 households were visited /05/ in person and some of households in the sample list were omitted because the household was either not willing to participate or not available.

#### **Water Consumption Field Test (WCFT)**

As per the applied methodology/registered monitoring plan, two valid options are allowed for the statistical analysis of the WCFT. In all cases, the sample size must be greater than 20:

1. 90/10 rule. When the sample size is large enough to satisfy the "90/10 rule", i.e. the endpoints of the 90% confidence interval lie within +/- 10% of the estimated mean, overall emission reductions can be calculated on the basis of the estimated MEAN of each of the respective variables measured through the WCFT.
2. When the sample size is such that the results do not meet the "90/10 rule", the result used for each of the respective variables measured through the WCFT is not the mean (or average) test result, but a lower value, i.e. the lower bound of the one-sided 90% confidence interval (in order to reach a conservative estimate) is used for the parameters and  $Q_{p,y}$  and  $Q_{p,y}$ , rawboil, $y$  and a higher value, i.e. the upper

	<p>bound of the one-sided 90% confidence interval (in order to reach a conservative estimate) is used for the parameter <math>Q_{p, \text{cleanboil}, y}</math>.</p> <p>Moreover, VVB wants to confirm that the usage survey and WFCT Test was conducted during this verification. And on the basis of review of MR, registered PD /09/ and also with the interview with the PD. It is confirmed that usage survey to be conducted annually and WFCT needs to be conducted biennially and thus the PD has conducted usage survey and WFCT in the current/this monitoring period/verification. The verification team selected 08 random samples from PD's sample list to verify usage survey and WCFT (explained in section D.4).</p> <p>Furthermore, verification team interviewed those who conducted the survey as well as checked the training records and it is based on this confirms the following:</p> <ul style="list-style-type: none"> <li>• Enumerators were trained by the carbon consultants, both in form of a theoretical and practical training</li> <li>• A QA/QC system is in place to check for plausibility and consistency after the raw data had been received from the Enumerators.</li> </ul> <p>Please also refer to appendix 3 of verification report.</p> <p><b><u>Water quality testing</u></b></p> <p>Verification team noted that PD provided the E. Coli test results /17/ and confirm that all results are negative (not shown any presence of E. coli) which is conducted by the WAR own mWater presence/absence test of E. coli.</p> <p>Moreover, Verification Team confirms that the water quality must be tested every quarter, with the first test within 6 months of the stated project start date. The start date of project is the date of rehabilitation/drilling dates of each water point which are provided in the Excel sheet "W4C MP4 Project Water Point Database_.xlsx" by the PD. And for those water points which were rehabilitated within the last 6 months of the monitoring period, or which were not functional in the rainy season, no E. coli tests in the presence of the local health authority were conduct. All of the E. coli tests were negative, or in other words did not show any presence of E.coli in the water.</p>
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**E.7. Compliance with the calibration frequency requirements for measuring instruments**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	No finding raised.
<b>Conclusion</b>	There is no monitoring equipment involved in monitoring of the required parameters. Hence, no calibration requirement applicable for the project activity.

**E.8. Assessment of data and calculation of emission reductions or net removals**

**E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	CAR 04 was raised and closed satisfactorily. Kindly refer appendix 4 for more details.
<b>Conclusion</b>	<p>The equations for baseline emissions, as provided in the monitoring report /01-e/ and confirmed with the registered PDD /09/, the methodology Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1/B05/ and supporting tools are:</p> <p><b>Calculation of baseline value for SDG 13 outcome</b></p> <p><b>The equation used to calculate the baseline fuel consumption is calculated in line with the applied methodology and registered PDD and is as follows:</b></p> $B_{b,y} = (1 - X_{\text{boil}}) * (1 - C_j) * N_{p,y} * W_{b,y} * (Q_{p,y} + Q_{p, \text{rawboil}, y})$



	<p>Where:</p> <p><math>B_{b,y}</math> Quantity of fuel consumed in baseline scenario b during the year in tonnes (L/p/d)</p> <p><math>X_{boil}</math> Percentage of premises that in the absence of the project activity would have used non-GHG emitting technologies like chlorine treatment techniques (if available) in the project boundary</p> <p><math>C_j</math> Percentage of users of project safe water supply who were already in baseline using a non-boiling safe water supply</p> <p><math>N_{p,y}</math> Number of person.days consuming water supplied by project scenario p through year y</p> <p><math>W_{b,y}</math> Quantity of fuel in tonnes required to treat 1 litre of water using technologies representative of baseline scenario b in year y as per Baseline Water Boiling Test.</p> <p><math>Q_{p,y}</math> Quantity of safe water in litres consumed in the project scenario p and supplied by project technology per person per day in year y</p> <p><math>Q_{p,rawboil,y}</math> Quantity of raw water boiled in the project scenario p per person per day</p>
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**E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	No finding raised.
<b>Conclusion</b>	<p>The equations for project emissions, as provided in the monitoring report /01-e/ and confirmed with the registered PDD /09/. The methodology /B05/ are:</p> <p><b>Calculation of project value or estimation of project situation of each SDG outcome</b></p> <p>The equation used to calculate the project fuel consumption is calculated in line with the applied methodology and registered PDD and is as follows:</p> $B_{p,y} = (1 - C_j) * N_{p,y} * W_{p,y} * (Q_{p,rawboil,y} + Q_{p,cleanboil,y})$ <p>Where :</p> <p><math>B_{p,y}</math> - Quantity of fuel f consumed in project scenario p during the year y in tonnes</p> <p><math>C_j</math> - Percentage of users of project safe water supply who were already in baseline using a non-boiling safe water supply</p> <p><math>N_{p,y}</math> - Number of person. Days consuming water supplied by project scenario p through year y</p> <p><math>W_{b,y}</math> - Quantity of fuel in tons required to treat 1 liter of water using technologies representative of baseline scenario b in year y as per Baseline Water Boiling Test.</p> <p><math>Q_{p,rawboil,y}</math>- Quantity of raw water boiled in the project scenario p per person per day</p> <p><math>Q_{p,cleanboil,y}</math>- Quantity of safe water boiled in the project scenario p per person per day in year y</p> <p><b>Project emissions from possible grid electricity consumption</b></p> $PE_{EC,y} = EF_{grid,y} * EC_y$

	<p>PE<sub>EC</sub> - Project emissions from grid electricity consumption during year y in tCO<sub>2</sub>e</p> <p>EF<sub>grid,y</sub> - CO<sub>2</sub> emission factor of the grid electricity in year y</p> <p>EC<sub>y</sub> - Quantity of grid electricity consumed for pumping water in a standpipe system to the different water points in year y</p> <p><b>Project emissions from possible diesel consumption</b></p> <p>PE<sub>FC,y</sub> = EF<sub>CO2,diesel,y</sub> X FC<sub>diesel,y</sub> X NCV<sub>diesel,y</sub> X Density<sub>diesel</sub></p> <p>PE<sub>FC,y</sub> - Project emissions from diesel consumption during year y in tCO<sub>2</sub>e</p> <p>EF<sub>CO2,diesel,y</sub> - CO<sub>2</sub> emission coefficient of diesel in year y</p> <p>FC<sub>diesel,y</sub> - Quantity of diesel consumed for pumping water in a standpipe system to the different water points or any other water point in year y</p> <p>NCV<sub>diesel,y</sub> - Net calorific value of diesel in year y</p> <p>Density<sub>diesel</sub> - Density of diesel in year y (only relevant in case that volume of diesel consumption is measured)</p> <p>The transparent calculations of the outcome of SDG 13 (i.e. CO<sub>2</sub>e reductions) are provided in a separate excel spreadsheet /02/ uploaded to GS Registry. For the used data/parameters, see the sections D.1 and D.2. in this monitoring report.</p>
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**E.8.3. Calculation of leakage GHG emissions**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	CL 04 was raised and closed satisfactorily. Kindly refer appendix 4 for more details.
<b>Conclusion</b>	<p>The verification team confirms there is No leakage emission has been accounted for the current monitoring period as per the MR/01-e/, which is crosschecked by the interviews of HHs/end users /12/ and leakage survey report/05/. The verification team finds Leakage survey results/05/, is deemed to be consistent with the interview of HHs/end users which is done by the VVB through the acceptance sampling.</p> <p>The leakage assessment has been carried out at this 4<sup>th</sup> performance certification/01-e/ by the PD which is conducted between 30/05/2022 and 20/06/2022 along with a re-assessment of the information provided in the PDD and revealed that there is no leakage (for details see excel spreadsheet “220614 W4C-Leakage survey_clean_final.xlsx”).</p>

**E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	No finding raised.
<b>Conclusion</b>	<p>The emission reductions in this monitoring period are:  <math>ER_y = BE_y - PE_y - LE_y</math>                  Where,                  ER<sub>y</sub> is the total emission reductions of the project activity during the year y in tCO<sub>2</sub>e;                  BE<sub>y</sub> is the baseline emissions for the project activity during the year y in tCO<sub>2</sub>e;                  PE<sub>y</sub> is the emissions for the project activity during the year y in tCO<sub>2</sub>e;                  LE<sub>y</sub> is the leakage emissions for the project activity during the year y in tCO<sub>2</sub>e.</p> <p>As explained in section E.8.1 above, the resulted Baseline emissions (BE<sub>y</sub>) for the monitoring period is 64,418 tCO<sub>2</sub>. Similarly, as explained in section E.8.2 and section E.8.3 project emission is 8,107 tCO<sub>2</sub> for the monitoring period and leakage</p>

	<p>emissions are accounted considering an adjustment factor 1.0 (multiplying with BE<sub>y</sub>).</p> <p>Therefore, resulted emission reduction for the monitoring period is 56,311 tCO<sub>2e</sub> (rounddown value).</p> <p>The data presented in the monitoring report /01-e/ and emission reduction worksheet /02-d/ were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. Sufficient evidences were presented and verified by VVB for the reported emission reductions as listed above.</p>
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**E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	No finding raised.
<b>Conclusion</b>	<p>The ex-ante estimate value of the emission reductions for the monitoring period as per the PDD /09/ is 64,558 tCO<sub>2e</sub> and the actual emission reductions achieved for the monitoring period is 56,311 tCO<sub>2e</sub>. Actual emission reductions are less by 12.81% of the estimated one for the current monitoring period.</p> <p>The monitoring report provides reason for decrease in the actual emission reduction and the same was confirmed by the verification team by interviewing the representatives of PD and by reviewing the actual implementation status of the project.</p> <p>The emission reduction calculations provided in the spreadsheet /02-d/ have been verified to be correct and in line with the registered PDD /09/.</p>

**E.8.6. Remarks on difference from estimated value in registered PDD**

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	CAR 05 was raised and closed satisfactorily. Kindly refer appendix 4 for more details.
<b>Conclusion</b>	<p>The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /09/ is 64,558 tCO<sub>2e</sub> and the actual emission reductions achieved for the monitoring period is 56,311 tCO<sub>2e</sub>. For SDG 13, since actual emission reduction is lower than the estimated value and hence it is acceptable to the verification team. The monitoring report provides reason for decrease in the actual emission reduction and the same was confirmed by the verification team by interviewing the representatives of PD and by reviewing the actual implementation status of the project.</p> <p>For other SDG parameters, PD has provided justification in the Monitoring report and assessment of the same is provided below:</p>

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 13	64,558 tCO <sub>2</sub> e	56,311 tCO <sub>2</sub> e
SDG 1	80,482,500 l/monitoring period	72,769,585 l/monitoring period
SDG 3	80%	98%
SDG 5	90%	92% (less time needed for women to collect water) 93% (less time needed for women to collect wood fuel)
SDG 6	70 Campaign <sup>2</sup>	4,763 people from 61 communities campaigns have been trained so far as well as 26 trainers.

- SDG 13: Actual emission reductions are significantly less than the estimated ones. The reason for such decrease has been provided in the MR; checked and found justified.
- SDG 3: The actual value slightly exceeds than the estimated value.
- SDG 5: The actual value slightly lower than the estimated value.
- SDG 6: Verification team based on review of documents and interview with PD confirms that the actual value of this SDG exceeds the estimated value taking into account the sum of WASH campaigns carried out for communities and trainers and thus acceptable to the verification team.

#### E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

<b>Means of verification</b>	Desk Review and Interviews											
<b>Findings</b>	No finding raised.											
<b>Conclusion</b>	<table border="1"> <tr> <td>GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012</td> <td>GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards</td> </tr> <tr> <td>NA</td> <td>56,311 tCO<sub>2</sub>e</td> </tr> <tr> <td colspan="2">Year-wise breakup of emission reductions:</td> </tr> <tr> <td>Year</td> <td>Emission Reductions (tCO<sub>2</sub>e)</td> </tr> <tr> <td>2022</td> <td>56,311</td> </tr> </table> <p>The emission reduction calculations provided in the ER spreadsheet /02-d/ have been verified to be correct and in line with the final PDD /09/, also the values are consistently reported in the MR for this monitoring period.</p>		GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards	NA	56,311 tCO <sub>2</sub> e	Year-wise breakup of emission reductions:		Year	Emission Reductions (tCO <sub>2</sub> e)	2022	56,311
GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards											
NA	56,311 tCO <sub>2</sub> e											
Year-wise breakup of emission reductions:												
Year	Emission Reductions (tCO <sub>2</sub> e)											
2022	56,311											

#### E.9. Assessment of reported sustainable development co-benefits

<b>Means of verification</b>	Desk Review and Interviews
<b>Findings</b>	CL 05 was raised and closed satisfactorily. Kindly refer appendix 4 for more details.
<b>Conclusion</b>	The verification team verified that whether the Sustainable development co-benefits are reported in MR /01-e/ . Further, it is also confirmed that Project Developer has monitored the sustainable development co-benefits.

<sup>2</sup> It was foreseen to conduct one campaign per water point.

SDG	SDG Impact	Baseline estimate	Project estimate	Net Benefit	VVB Assessment
1	Total quantity of safe water in litres per year supplied by the rehabilitated/newly drilled boreholes of the project to the communities	Consumption of unsafe/unclean water leads to more poverty. Since money has to be spent for e.g. medicine/hospital and loss of productive working hours	72,769,585 litres of clean (safe) water has been provided during the monitoring period.	72,769,585 litres of clean (safe) water has been provided during the monitoring period.	VVB has reviewed the ER sheet /02/ monitoring survey /05/, database /03/ and WCFT survey /04/. The same has been verified during onsite audit /12/ and found the value appropriate.
3	Proportion of households perceiving less often incidence of water borne diseases like cholera, diarrhea, typhoid fever or Hepatitis A/E since the start of the project	People consume unsafe/unclean water resulting in water borne diseases.	Less people (98%) suffering of diarrhea and other water-borne diseases in the project scenario compared to the baseline scenario.	Less people (98%) suffering of diarrhea and other water-borne diseases in the project scenario compared to the baseline scenario.	VVB has reviewed the ER sheet /02/ monitoring survey /05/, database /03/ and WCFT survey /04/. The same has been verified during onsite audit /12/ and found the value appropriate.
5	Proportion of women in households perceiving reduced amount of time and effort spent for collecting water since the start of the project  Proportion of women in households perceiving reduced	Women spend significant amount of time for collecting water and wood fuel to boil unsafe/unclean water.	More than 92% and 93% of the women need less time and efforts to collect water and wood fuel respectively.	More than 92% and 93% of the women need less time and efforts to collect water and wood fuel respectively.	VVB has reviewed the ER sheet /02/ monitoring survey /05/, user database /03/ and WCFT survey /04/. The same has been verified during onsite audit /12/ and found the value appropriate.

		amount of time and effort spent for collecting wood fuel since the start of the project				
	6	Number of organized Water Sanitation and Hygiene trainings	Prior to the project the local communities received no regular training on water, sanitation and health related issues.	2022 4,763 people in 61 Community campaigns have been trained so far as well as 26 trainers.	2022 4,763 people in 61 Community campaigns have been trained so far as well as 26 trainers.	VVB has reviewed the ER sheet /02/ monitoring survey /05/, user database /03/ and Training records /16/. The same has been verified during onsite audit /12/ and found the value appropriate.
	13	Certified Emissions Reductions/Removals	64,418 tCO <sub>2</sub> e	8,107 tCO <sub>2</sub> e	56,311 tCO <sub>2</sub> e	VVB has reviewed the ER sheet /02/ monitoring survey /05/, user database /03/ and WCFT survey /04/. The same has been verified during onsite audit /12/ and found the value appropriate.

**E.10. Global stakeholder consultation**

<b>Means of verification</b>	Not Applicable
<b>Findings</b>	Not Applicable.
<b>Conclusion</b>	Not Applicable.

**SECTION F. Internal quality control**

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The verification report passed a technical review before being submitted to the Gold Standard. The technical review is performed by a technical reviewer qualified in accordance with CCIPL’s qualification scheme for CDM validation and verification.

**SECTION G. Verification/ Certification opinion**

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Carbon Check (India) Private Ltd. (CC IPL) has performed the 4<sup>th</sup> periodic verification of the registered CDM Project Activity “Water for Climate Rwanda Project” GS 6598.

The verification team assigned by the VVB concludes that the project activity as described in the PDD (Version 5.4, date 30/08/2021) /09/ and the Monitoring report (version 7.0, dated 08/03/2024) /01-e/, meets all relevant

requirements of the Gold Standard. The verification has been conducted in-line with the GS4GG requirements /B01-a/ project activities.

#### Verification methodology and process

The Verification team confirms the contractual relationship signed on 12/10/2023 between the VVB, Carbon Check (India) Private Ltd. and the Project Participant CO2Logic. The team assigned to the verification meets the CCIPL's internal procedures including the UNFCCC/GS requirements for the team composition and competence. The verification team has conducted a thorough contract review as per UNFCCC and CCIPL's procedures and requirements.

The verification has been performed as per the requirements described in the GS4GG and constitutes the review and completion of the following steps:

- Reviewing the registered PDD (Version 5.4 dated 30/08/2021) /09/, including the monitoring plan and the corresponding validation report.
- Desk review of the verification report of last MP /08/, current MP MR /01/ and other relevant documents including documents related to the project activities in emission reductions.
- Review of the applied monitoring methodology (Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1 /B05/;
- Onsite interviews/inspection (12/12/2023 to 15/12/2023)
- Resolution of CARs and CLs raised during verification.
- Issuance of Verification Report

The project activity was correctly implemented according to selected monitoring methodology, monitoring plan and the registered PDD. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the document review and onsite interviews, the verification team confirms that the project activity has resulted in the 56,311 tCO<sub>2e</sub> emission reductions /02/ during the 4<sup>th</sup> monitoring period.

This statement covers verification period from 01/01/2022 to 31/12/2022 (including both the dates).

The VVB has raised 05 clarifications and 05 corrective action requests, all of which are closed.

The VVB considers necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan contained in the registered PDD /09/ are fairly stated.

The VVB, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 56,311 tCO<sub>2e</sub> equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

#### **SWS Grievance Resolution**

PD has provided an explanation in section E.4 of the MR. As per this explanation, the revised ERs have been calculated based on the default value of 0.0004 tons/litre for the "Quantity of wood fuel or fossil fuel required to boil 1 litre of water using technologies" and this is the amount which claimed 30,739 tCO<sub>2e</sub> /B10/.

The ERs based on the "Quantity of wood fuel or fossil fuel required to boil 1 litre of water using technologies" value of the registered PDD results in 56,311 tCO<sub>2e</sub>. The PD requests an issuance of the full amount (56,311 tCO<sub>2e</sub>), however makes sure that 25,572 tCO<sub>2e</sub> carbon credits from another GS project will be retired /20/ prior to issuance to account for the difference.

## Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CA	Corrective Action/ Clarification Action
CER	Certified Emission Reduction
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CH <sub>4</sub>	Methane
CL	Clarification Request
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	Carbon Dioxide Equivalent
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final Validation Report
GHG	Greenhouse gas(es)
MWh	Mega Watt Hour
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MP	Monitoring Period
MR	Monitoring Report
MWh	Mega Watt Hour
OSV	On Site Visit
PE	Project Emissions
PD(s)	Project Developer(s)
PRC	Post registration change
QC/QA	Quality Control/ Quality Assurance
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
VVB	Validation & verification body
WAR	Water Access Rwanda



## Appendix 2. Competence of team members and technical reviewers



**Carbon**  
CHECK

**Carbon Check (India) Private Limited**

*Certificate of Competency*

**Mr. Rishi K Raychoudhury**

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

*for the following functions and requirements:*

<input checked="" type="checkbox"/> Validator	<input checked="" type="checkbox"/> Verifier	<input checked="" type="checkbox"/> Team Leader	<input checked="" type="checkbox"/> Technical Expert
<input type="checkbox"/> Technical Reviewer	<input type="checkbox"/> Health Expert	<input type="checkbox"/> Gender Expert	<input type="checkbox"/> Plastic Waste Expert
<input type="checkbox"/> CCB Expert	<input type="checkbox"/> Legal Expert	<input checked="" type="checkbox"/> Financial Expert	<input type="checkbox"/> Environmental, Health and Safety financial matters
<input checked="" type="checkbox"/> SDG+	<input checked="" type="checkbox"/> Social no-harm(S+)	<input checked="" type="checkbox"/> Environment no-harm(E+)	
<input checked="" type="checkbox"/> Local Expert for India			

*in the following Technical Areas:*

<input type="checkbox"/> TA 1.1	<input checked="" type="checkbox"/> TA 1.2	<input type="checkbox"/> TA 2.1	<input checked="" type="checkbox"/> TA 3.1	<input type="checkbox"/> TA 4.1
<input type="checkbox"/> TA 4. n	<input type="checkbox"/> TA 5.1	<input type="checkbox"/> TA 5.2	<input type="checkbox"/> TA 7.1	<input type="checkbox"/> TA 8.1
<input type="checkbox"/> TA 9.1	<input type="checkbox"/> TA 9.2	<input type="checkbox"/> TA 10.1	<input type="checkbox"/> TA 13.1	<input type="checkbox"/> TA 13.2
<input type="checkbox"/> TA 14.1	<input type="checkbox"/> TA 15.1	<input type="checkbox"/> TA 16.1		

<p><b>Issue Date</b></p> <p><b>5<sup>th</sup> December 2023</b></p> <p><i>Priya Suman</i></p> <hr/> <p><b>Ms. Priya Suman</b> Compliance Officer</p>	<p><b>Expiry Date</b></p> <p><b>31<sup>st</sup> December 2024</b></p> <p><i>Sanjay Agarwalla</i></p> <hr/> <p><b>Mr. Sanjay Kumar Agarwalla</b> Technical Director</p>
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**Revision History of the document:**

Revision date	Summary of changes
2022	Initial Adoption
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL\_FM 7.9 Certificate of Competency\_V4.0\_112023

<sup>1</sup> Please refer to previous version of FM 7.9 for the revision history



## Carbon Check (India) Private Limited

### Certificate of Competency

**Ms. Indumathi C**

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- |  |  |  |   |
|--|--|--|---|
| <input checked="" type="checkbox"/> Validator              | <input checked="" type="checkbox"/> Verifier | <input checked="" type="checkbox"/> Team Leader  | <input checked="" type="checkbox"/> Technical Expert                        |
| <input type="checkbox"/> Technical Reviewer                | <input type="checkbox"/> Health Expert       | <input type="checkbox"/> Gender Expert           | <input type="checkbox"/> Plastic Waste Expert                               |
| <input type="checkbox"/> CCB Expert                        | <input type="checkbox"/> Legal Expert        | <input type="checkbox"/> Financial Expert        | <input type="checkbox"/> Environmental, Health and Safety financial matters |
| <input type="checkbox"/> SDG+                              | <input type="checkbox"/> Social no-harm(S+)  | <input type="checkbox"/> Environment no-harm(E+) |   |
| <input checked="" type="checkbox"/> Local Expert for India |  |  |   |

in the following Technical Areas:

- |                                  |  |                                  |   |                                  |
|----------------------------------|--|----------------------------------|---|----------------------------------|
| <input type="checkbox"/> TA 1.1  | <input checked="" type="checkbox"/> TA 1.2 | <input type="checkbox"/> TA 2.1  | <input checked="" type="checkbox"/> TA 3.1  | <input type="checkbox"/> TA 4.1  |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1            | <input type="checkbox"/> TA 5.2  | <input type="checkbox"/> TA 7.1             | <input type="checkbox"/> TA 8.1  |
| <input type="checkbox"/> TA 9.1  | <input type="checkbox"/> TA 9.2            | <input type="checkbox"/> TA 10.1 | <input checked="" type="checkbox"/> TA 13.1 | <input type="checkbox"/> TA 13.2 |
| <input type="checkbox"/> TA 14.1 | <input type="checkbox"/> TA 15.1           | <input type="checkbox"/> TA 16.1 |   |                                  |

Issue Date

5<sup>th</sup> December 2023

Expiry Date

31<sup>st</sup> December 2024

**Mr. Sanjay Kumar Agarwalla**  
Technical Director

#### Revision History of the document:

Revision date	Summary of changes
2022 <sup>1</sup>	Annual revision
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL\_FM 7.9 Certificate of Competency\_V4.0\_112023

<sup>1</sup> Please refer to previous version of FM 7.9 for the revision history

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/01/	CO2Logic	a) Initial MR: GS6598_MR_4rd issuance_v2.0_clean. b) Revised MR: GS6598_MR_4rd issuance_v4.0_trackchange. c) Revised MR: GS6598_MR_4rd issuance_v5.0_clean d) Revised MR: GS6598_MR_4rd issuance_v6.0_clean e) Final MR: GS6598_MR_4rd issuance_v7.0_clean	v2.0 dated-24/10/2023 v4.0 dated-16/01/2024 v5.0 dated -14/02/2024 v6.0 dated -05/03/2024 v7.0 dated -08/03/2024	PD
/02/	CO2Logic	a) Initial ER sheet: ER calculation_4th issuance_Water for Climate Rwanda_v0.2 b) Revised ER sheet : ER calculation_4th issuance_Water for Climate Rwanda_v0.3 c) Revised ER sheet: ER calculation_4th issuance_Water for Climate Rwanda_v0.4 d) Final ER sheet: ER calculation_4th issuance_Water for Climate Rwanda_v0.4	v0.2 dated -24/10/2023 v0.3 dated -16/01/2024 v0.4 dated -14/02/2024 v0.5 dated -08/03/2024	PD
/03/	CO2Logic	Water point and user Database		PD
/04/	CO2Logic	WCFT Survey		PD
/05/	CO2Logic	Monitoring Survey Records		PD
/06/	CO2Logic/WAR	Grievance & Maintenance Records		PD
/07/	CO2Logic/WAR	Records of Carbon Credit waiver		PD
/08/	CO2Logic	MR & Verification report of 3 <sup>rd</sup> MP		PD
/09/	CO2Logic	Registered PDD	v5.3, 30/08/2021	PD
/10/	CC IPL	Contract (CC IPL & CO2Logic	12/10/2023	PD

/11/	CO2Logic/WAR	Borehole Rehabilitation form		PD
/12/	CCIPL	Onsite Audit Records	12/12/2024 – 15/12/2023	PD
/13/	CO2Logic	Fuel consumption & emission record		
/14/	CO2Logic/WAR	Agreement between CO2Logic & Water Access Rwanda	04/06/2018	
/15/	CO2Logic	Evidence for randomness of sample taken		PD
/16/	WAR	Training Records		PD
/17/	WAR	E-coli Test Records		PD
/18/	WAR	Borehole Ownership		PD
/19/	GS4GG	Last MP Performance review		PD
/20/	CO2Logic	SWS compensation request form of previous MP.		PD

### Background Documents

No.	Author	Title	References to the document	Provider
/B01/	GS4GG	a) GS4GG “Principles & Requirements”, version 1.2 b) GS4GG “Validation and Verification standard”, version 1.0	<a href="http://www.goldstandard.org">www.goldstandard.org</a>	Publicly Available
/B02/	GS4GG	Gold Standard - Site visit and remote audit requirements & procedures v2.0	<a href="http://www.goldstandard.org">www.goldstandard.org</a>	Publicly Available
/B03/	GS4GG	GS Monitoring Template v1.1	<a href="http://www.goldstandard.org">www.goldstandard.org</a>	Publicly Available
/B04/	GS4GG	GS Community Activity Requirements v1.2	<a href="http://www.goldstandard.org">www.goldstandard.org</a>	Publicly Available
/B05/	UNFCCC	Technologies and practices to displace decentralized thermal energy consumption (TPDDTEC), version 3.1	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Publicly Available
/B06/	UNFCCC	Guidelines: Sampling and surveys for CDM project activities and programmes of activities (version 04.0)	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Publicly Available
/B07/	UNFCCC	Standard: Standard for sampling and surveys for CDM project activities and Programme of Activities (version 09.0)	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	Publicly Available
/B08/	Ministry of Natural Resources, Rwanda	Second National Communication under the UNFCCC by Republic of Rwanda (Ministry of Natural Resources)		Publicly Available
/B09/	IPCC	IPCC 2006, volume 2, chapter 1		Publicly Available
/B10/	GS4GG	Application of TPDDTEC methodology to safe water supply projects	Version 3.0, 30/06/2022	Publicly Available

## Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FAR from validation and/or previous verifications

<b>FAR ID</b>	-	<b>Section no.</b>	-	<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by project participant</b>				
<b>VVB assessment</b>				<b>Date:</b> DD/MM/YYYY

Table 2. CL from this verification

<b>CL ID</b>	01	<b>Section no.</b>	E.3	<b>Date:</b> 27/12/2023
<b>Description of CL</b>				
<i>PD is requested to provide records for transfer of borehole rights to PD along with rehabilitation form of each borehole.</i>				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024
<i>Both the MoU with the districts as well as the rehabilitation form are provided</i>				
<b>Documentation provided by project participant</b>				
<i>Folders: "MoU with districts" and "Rehabilitation Form"</i>				
<b>VVB assessment</b>				<b>Date:</b> 07/02/2024
<i>PD has provided MoU and rehabilitation form for the boreholes, which establish the ownership of boreholes to the PD. Hence, CL is closed.</i>				

<b>CL ID</b>	02	<b>Section no.</b>	E.6.2	<b>Date:</b> 27/12/2023
<b>Description of CL</b>				
<ol style="list-style-type: none"> <li>1) <i>PD is requested to provide records for the monitoring parameter "Hygiene Campaigns".</i></li> <li>2) <i>PD is requested to provide records and calculation of emission, for the monitoring parameter "FC<sub>diesel,y</sub>".</i></li> <li>3) <i>During site visit it is observed that the E-coli test of water from project water point is done in presence of Local health Authority in Dry season whereas per registered PDD it should be done during wet season. PD is requested to provide QA/QC procedure taken to avoid such scenario.</i></li> </ol>				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024
<ol style="list-style-type: none"> <li>1) <i>PD has submitted the file "WASH metrics" which provides an overview on the different trainings provided by district, as well as the split per gender. Furthermore, a couple of evidence of attendance has also been submitted.</i></li> <li>2) <i>PD has calculated the emissions related to the parameter FC<sub>diesel,y</sub> in the file "Fuel Consumption". The total amounts to less than 5 tCO<sub>2</sub>, wick represents less than 5% of the calculated ER. Therefore, it is negligible. The file "rukoronko fuel" with the operation hours has also been submitted.</i></li> <li>3) <i>As per PDD, E-coli tests should be done during rainy season. However, it is not always easy to define in advance when dry and rainy seasons arrive. Therefore, PD will check the weather forecast and pick up the best period to organize with the regional technicians the tests in the presence of the Public Health Authority. It will keep track of the weather records for each E.Coli test.</i></li> </ol>				

<b>Documentation provided by project participant</b>	
1) Wash Metrics + evidence of trainings attendance 2) Fuel Consumption calculation file + "rukoronko fuel"	
<b>VVB assessment</b>	<b>Date:</b> 07/02/2024
1) PD has submitted records of monitoring parameter "Hygiene Campaigns" which VVB found appropriate. Hence, CL point is closed.	
2) PD has provided records of fuel consumption whereas the calculation is not in line with the description provided in section B.2.4 of the MR. PD is requested to provide appropriate calculation of project emission. Hence, CL point is open.	
3) PD has conducted E-coli test based on weather information available during current monitoring period. Same has been crosschecked by VVB during desk review and records provided by PD for E-coli test. Also, during site visit VVB has interviewed the LHA members and established that the E-coli test has been conducted in presence of LHA member. VVB found records and information on E-coli test is appropriate. The QA/QC procedure provided by PD is appropriate. Hence, CL point is closed.	
<b>Project participant response</b>	<b>Date:</b> 14/02/2024
2 A new file has been submitted, where the fuel consumption has been calculated based on the monthly hours of the generator, and compared with the fuel purchased. It is now in line with section B.2.4 of the MR.	
<b>Documentation provided by project participant</b>	
Rukoronko fuel	
<b>VVB assessment</b>	<b>Date:</b> 22/02/2024
PD has submitted calculation of fuel consumption and emission from it in line with section B.2.4 of the MR which VVB found appropriate. Hence, CL point is closed.	

<b>CL ID</b>	03	<b>Section no.</b>	E.6.2	<b>Date:</b> 27/12/2023
<b>Description of CL</b>				
1) During the onsite visit, one household (Survey ID- 451604426) out of 8 selected samples denied using water from project water point. PD is requested to clarify what QA/QC procedure adopted to ascertain such scenario.				
2) During the onsite visit, it was found in one household (Survey ID - 453272636) out of eight selected households, the no. of family members present during MP is not consistent with the monitoring survey. PD is requested to clarify what QA/QC procedure adopted to ascertain such scenario.				
3) It is observed to VVB that PD has considered children as an adult family member while calculating water consumption which seems to be inappropriate. PD is requested to clarify the consideration of children below 15 as an adult while calculating water consumption.				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024
1) In mWater app, which is used to record the monitoring surveys, there is a procedure which includes an approval steps before the surveys are submitted. A coherence check is therefore done before the answers are accepted and submitted. Also, the monitoring surveys will be conducted in the presence of a WASH committee member. If a HH replies "No" to the question about being a user or not, the surveyor will ask the the WASH Committee member or Kiosk attendant (if there is one) whether the surveyed HH is using the waterpoint or not, to ask for a double opinion. Being accompanied by a Wash Committee member and asking the Kiosk Attendant (when there is one), will be included in the QA/QC procedure for conducting monitoring surveys.  The ER sheet has been adapted accordingly.				
2) In order to avoid this situation, a preliminary question will be asked to the survey: "Were you a user during the MP", to make sure that we get the answers related to MP, not related to the period the survey is conducted (which might occur in couple of months after the end of the MP). Only surveying people who have been using waterpoints for the last 2 years. The ER sheet has been adapted accordingly.				
3) i) the PDD has been approved with person.days without making any distinction between adults and children; ii) the WFCT also considers persons and doesn't make any distinction between adults and children.				

<b>Documentation provided by project participant</b>	
20230710_ER calculation_4th issuance_Water for Climate Rwanda_v0.4	
<b>VVB assessment</b>	<b>Date:</b> 07/02/2024
<p>1) PD has revised ER calculation for the current MP which VVB found appropriate based on para. 36 of sampling standard v09.0. The QA/QC procedure provided by PD is found appropriate to ascertain such scenario. Hence, CL point is closed.</p> <p>2) PD has revised the ER calculation based on VVB observation during OSV, which is correct and appropriate. The QA/QC procedure provided by PD is found appropriate to ascertain such scenario. Hence, CL point is closed.</p> <p>3) The explanation provided by PD is in line with registered PDD. Since the parameter <math>Q_{p,y}</math> (Quantity of safe water in litres consumed in the project scenario p and supplied by project technology per person per day) mention in section A3.1 and subsequently in sub-section D of section A3.3 of Annex 3 of applied methodology only considers water consumption per person per day irrespective of age of family members. Therefore, the explanation provided by PD is acceptable. Hence, CL point is closed.</p> <p>VVB found PD response for the CL appropriate. Hence, CL is closed.</p>	

<b>CL ID</b>	04	<b>Section no.</b>	E.8.3	<b>Date:</b> 27/12/2023
<b>Description of CL</b>				
PD is requested to provide leakage survey records.				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024
The leakage assessment has been carried out at the 3rd performance certification. Therefore, it has not been performed for the 4rd performance certification.				
<b>Documentation provided by project participant</b>				
220614 W4C-Leakage survey_clean				
<b>VVB assessment</b>				<b>Date:</b> 07/02/2024
PD has provided leakage survey records which was conducted in June 2022 as per biennial monitoring plan. VVB found leakage survey consideration in MR appropriate. Hence, CL is closed.				

<b>CL ID</b>	05	<b>Section no.</b>	E.9	<b>Date:</b> 27/12/2023
<b>Description of CL</b>				
It is observed During the site visit that one household (Survey ID- 453272667) out of eight household mentioned that men bring water from the project water point. PD is requested to reassess the contribution of project activity for SDG 5.				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024
This does is not contradictory as the questions used to calculate SGD 5 is "In terms of time and effort spent for collecting water/wood: Does/Do the woman (or women) in the household spend less time/effort, more time/effort or the same time/effort for collecting water since the project is implemented when compared to the pre-project". The surveys are always conducted with the person who is responsible for collecting wood and water, and it is not always a woman.				
<b>Documentation provided by project participant</b>				
<b>VVB assessment</b>				<b>Date:</b> 07/02/2024
VVB found the project activity SDG 5 contribution mentioned in MR appropriate. Hence, CL is closed.				

Table 3. CAR from this verification

<b>CAR ID</b>	01	<b>Section no.</b>	E.1	<b>Date:</b> 27/12/2023
<b>Description of CAR</b>				
<p>1) The Numeric font is not appropriate throughout the monitoring report. PD is requested to use appropriate font.</p> <p>2) Start date mentioned in Table 2 of MR is not appropriate as per MR template filling guideline. PD is requested to maintain consistency in the table.</p> <p>3) PD is requested to use standard notation of numeric value throughout the MR.</p>				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024

1) The Numeric font has been updated in the MR
2) Start date has been corrected in the MR
3) Notation of numeric value has been corrected.
<b>Documentation provided by project participant</b>
GS6598_MR_4rd_issuance_v4.0_trackchange
<b>VVB assessment</b> <span style="float: right;"><b>Date:</b> 07/02/2024</span>
1) PD has rectified the numeric font throughout the MR. Hence, CAR point is closed.
2) PD has rectified the start date of the monitoring period in table 2 of the MR and maintain consistency for the start date of monitoring period. Hence, CAR point is closed.
3) PD has used standard notation of numeric value throughout the MR. Hence, CAR point is closed.
VVB found PD response appropriate. Hence, CAR is closed.

<b>CAR ID</b>	02	<b>Section no.</b>	E.3	<b>Date:</b> 27/12/2023
<b>Description of CAR</b>				
1) Start date of monitoring period and monitoring period mentioned in KPI section of MR is not appropriate. PD is requested to make it appropriate.				
2) In section G.1 of the MR, it is mentioned that the grievance of household is mentioned in section F.2, which is not traceable in MR. PD is requested to provide grievance details in appropriate section of MR.				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024
1) This has been made consistent in the MR.				
2) This has been corrected in the MR in Section G.1.				
<b>Documentation provided by project participant</b>				
GS6598_MR_4rd_issuance_v4.0_trackchange				
<b>VVB assessment</b>				<b>Date:</b> 07/02/2024
1) PD has made necessary changes in KPI section of MR. Hence, CAR point is closed.				
2) PD has rephrased section G.1 of the MR and included details of grievance mechanism for the project activity in section G.1 of the MR. Hence, CAR point is closed.				
VVB found PD action for the CAR appropriate. Hence, CAR is closed.				

<b>CAR ID</b>	03	<b>Section no.</b>	E.6.2	<b>Date:</b> 27/12/2023
<b>Description of CAR</b>				
In monitoring parameter $P_{IWB,D,Y}$ & $P_{ITEC,Y}$ , the monitored value mentioned under the monitoring table is not appropriate. PD is requested to maintain consistency for the same.				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024
The question 23 had been slightly changed in the monitoring survey: "Last year, did you or your family ever suffer from water-borne diseases like cholera, eye pain, diarrhea, typhoid fever, etc? How often does this occur?"				
In order to be able to monitor the same parameters, an extra survey has been conducted for the households who had responded "yes", in order to understand if this frequency had increased, remained the same or increased. Please see Tab 'Question 23 and "Report" of the file '20230707_GS6598_W4CR_Usage Monitoring survey analysis_MP4_v0.1'				
All the 123 respondents who answered "No", were considered as "Decreased".				
<b>Documentation provided by project participant</b>				
GS6598_MR_4rd_issuance_v4.0_trackchange				
<b>VVB assessment</b>				<b>Date:</b> 07/02/2024
The value mentioned for monitoring parameters $P_{IWB,D,Y}$ & $P_{ITEC,Y}$ is not consistent with other section of MR, PD is requested to maintain the consistency of values for the same. Hence, CAR is open.				
<b>Project participant response</b>				<b>Date:</b> 14/02/2024
This has been modified accordingly in the MR.				
<b>Documentation provided by project participant</b>				
GS6598_MR_4rd_issuance_v5.0_trackchange				
<b>VVB assessment</b>				<b>Date:</b> 22/02/2024
PD has made the necessary changes in MR for the mentioned monitoring parameters. Hence, CAR is closed.				

<b>CAR ID</b>	04	<b>Section no.</b>	E.8.1	<b>Date:</b> 27/12/2023
<b>Description of CAR</b>				



<i>In the ER sheet under comparison with PDD, the ER value mentioned under SDG 13 is not consistent with MR. PD is requested to maintain consistency.</i>	
<b>Project participant response</b>	<b>Date:</b> 16/01/2024
<i>This has been updated in E sheet. Please refer to "20230710_ER calculation_4th issuance_Water for Climate Rwanda_v0.3"</i>	
<b>Documentation provided by project participant</b>	
<i>20230710_ER calculation_4th issuance_Water for Climate Rwanda_v0.4</i>	
<b>VVB assessment</b>	<b>Date:</b> 07/02/2024
<i>PD has made the necessary changes in ER sheet under sub-sheet 'Comparison with PDD'. Hence, CAR is closed.</i>	

<b>CAR ID</b>	05	<b>Section no.</b>	E.8.6	<b>Date:</b> 27/12/2023
<b>Description of CAR</b>				
<i>The estimated value mentioned for SDG 13 under section E.4 and E.5 of the MR is not consistent with registered PDD. PD is requested to maintain consistency for the same.</i>				
<b>Project participant response</b>				<b>Date:</b> 16/01/2024
<i>This has been corrected in section E.4 and E.5 in the MR.</i>				
<b>Documentation provided by project participant</b>				
<i>GS6598_MR_4rd issuance_v5.0_trackchange</i>				
<b>VVB assessment</b>				<b>Date:</b> 07/02/2023
<i>PD has rectified the value of SDG 13 under section E.5. However, the value of SDG 13 in section E.4 of the MR is not in line with ER sheet. Hence, CAR is open.</i>				
<b>Project participant response</b>				<b>Date:</b> 14/02/2024
<i>The MR has been modified accordingly.</i>				
<b>Documentation provided by project participant</b>				
<i>20230710_ER calculation_4th issuance_Water for Climate Rwanda_v0.4</i>				
<b>VVB assessment</b>				<b>Date:</b> 22/02/2024
<i>PD has made the necessary changes in section E.4 of the MR. Hence, CAR is closed.</i>				

Table 4. FAR from this verification

<b>FAR ID</b>	xx	<b>Section No.</b>		<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by project participant</b>				
<b>VVB assessment</b>				<b>Date:</b> DD/MM/YYYY

## Annex 1: Assessment of data and parameters fixed ex-ante at the time of validation

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Percentage of users of project safe water supply who were already in the baseline using a non-boiling safe water supply ( $C_j$ )
<b>Data unit</b>	Percentage
<b>Default values used</b>	18.8 %
<b>Purpose of data</b>	Estimation of emission reductions
<b>Source of verification of the source</b>	Baseline survey records

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Percentage of premises that in the absence of the project activity would have used non-GHG emitting technologies like chlorine treatment techniques (if available) in the project boundary ( $X_{boil}$ )
<b>Data unit</b>	Percentage
<b>Default values used</b>	6.5%
<b>Purpose of data</b>	Estimation of baseline emissions
<b>Source of verification of the source</b>	Baseline survey records

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Quantity of wood fuel or fossil fuel required to boil 1 litre of water using technologies representatives of baseline scenario b during year y ( $W_{b,y}$ )
<b>Data unit</b>	Tonnes/Litre
<b>Default values used</b>	0.00073277
<b>Purpose of data</b>	Estimation of baseline emissions
<b>Source of verification of the source</b>	Baseline Water Boiling Test (BWBT)

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Quantity of wood fuel or fossil fuel required to boil 1 litre of water using technologies representatives of project scenario b during year y ( $W_{p,y}$ )
<b>Data unit</b>	Tonnes/Litre
<b>Default values used</b>	0.00073277
<b>Purpose of data</b>	Estimation of project emissions
<b>Source of verification of the source</b>	Baseline Water Boiling Test (BWBT)

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	CO <sub>2</sub> emission factor arising from use of fuels in baseline scenario ( $EF_{b, CO_2}$ )
<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	112
<b>Purpose of data</b>	Estimation of baseline emissions
<b>Source of verification of the source</b>	IPCC default value for wood

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
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<b>Parameter</b>	Non-CO <sub>2</sub> emission factor arising from use of fuels in baseline scenario ( <b>EF<sub>b, non-CO2</sub></b> )
<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	8.692
<b>Purpose of data</b>	Estimation of baseline emissions
<b>Source of verification of the source</b>	IPCC default value for wood

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	CO <sub>2</sub> emission factor arising from use of fuels in project scenario ( <b>EF<sub>p, CO2</sub></b> )
<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	112
<b>Purpose of data</b>	Estimation of baseline emissions
<b>Source of verification of the source</b>	IPCC default value for wood

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Non-CO <sub>2</sub> emission factor arising from use of fuels in project scenario ( <b>EF<sub>p, non-CO2</sub></b> )
<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	8.692
<b>Purpose of data</b>	Estimation of project emissions
<b>Source of verification of the source</b>	IPCC default value for wood

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Non-renewability status of woody biomass fuel in scenario I during the year y ( <b>f<sub>NRB, I, y</sub></b> )
<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	0.98
<b>Purpose of data</b>	Estimation of emission reductions
<b>Source of verification of the source</b>	MINIRENA (Ministry of Natural Resources of Rwanda, 2016): Projection Scenario of Supply/Demand of Woody Biomass in Rwanda from 2015 to 2026. Department of Forestry and Nature Conservation (DFNC), Rwanda Natural Resources Authority (RNRA), MINIRENA, Kigali

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Net calorific value of the fuels used in the baseline ( <b>NCV<sub>b, fuel</sub></b> )
<b>Data unit</b>	TJ/tonne
<b>Default values used</b>	0.0156
<b>Purpose of data</b>	Estimation of baseline emissions
<b>Source of verification of the source</b>	IPCC default value for wood

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Net calorific value of the fuels used in the project ( <b>NCV<sub>p, fuel</sub></b> )
<b>Data unit</b>	TJ/tonne
<b>Default values used</b>	0.0156
<b>Purpose of data</b>	Estimation of project emissions
<b>Source of verification of the source</b>	IPCC default value for wood

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	CO <sub>2</sub> emission factor of diesel fuel in year y ( <b>EF<sub>CO2, diesel, y</sub></b> )

<b>Data unit</b>	tCO <sub>2</sub> /TJ
<b>Default values used</b>	74.1
<b>Purpose of data</b>	Estimation of project emissions
<b>Source of verification of the source</b>	The value has been verified by reviewing IPCC 2006, volume 2, chapter 1, Table 1.4 /B09/

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Density of diesel fuel ( <b>Density<sub>diesel</sub></b> )
<b>Data unit</b>	kg/l
<b>Default values used</b>	0.84
<b>Purpose of data</b>	Estimation of project emissions
<b>Source of verification of the source</b>	The value has been verified by reviewing second National Communication under the UNFCCC by Republic of Rwanda (Ministry of Natural Resources), page 40 /B08/.

<b>Relevant SDG Indicator</b>	SDG 13, Climate action
<b>Parameter</b>	Net calorific value of diesel fuel in year y ( <b>NCV<sub>diesel,y</sub></b> )
<b>Data unit</b>	TJ/tonne
<b>Default values used</b>	0.043
<b>Purpose of data</b>	Estimation of project emissions
<b>Source of verification of the source</b>	The value has been verified by reviewing IPCC 2006, volume 2, chapter 1, Table 1.2/B09/

## Annex 2: Assessment of data and parameters monitored

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	$N_{p,y}$ Number of persons. days consuming water supplied by project scenario p through year y
Measuring frequency/Time Interval:	At least biennially
Reported value & Unit:	12,770,820 Persons.days
Verified Source of Data	Verification team has cross checked the following documents: <ul style="list-style-type: none"> <li>• End-user lists /03/</li> <li>• Borehole/Standpipe water point maintenance records /06/</li> <li>• E. coli test results /17/</li> <li>• mWater database /03/</li> <li>• Onsite audit records /12/</li> </ul>
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the parameter is calculated. It was checked by the verification team that the parameter has been calculated multiplying the technology days by the number of people indicated in the end-user list /03/ for the respective water point.  The technology days again have been calculated taking into account the start and end date of the monitoring period, any days the water point was down /16/ and the days for which the water could not be ensured to be E. coli /08/ free or during which the E. coli tests were on delay. In the opinion of verification team, the approach used for the calculation of the parameter is appropriate as well conservative.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	N/A
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	$Q_{p,y}$ Liters per person per day (l/person/day)
Measuring frequency/Time Interval:	At least biennially
Reported value & Unit:	5.698 Liters per person per day (l/person/day)
Verified Source of Data	Verification team has cross checked the following documents:  81 WCFT /04/ in randomly selected households have been conducted in person in the period between

	09/08/2022 and 20/09/2022. The sample size was sufficient to comply with the 90/10 rule, hence the mean value, being 5.698 t/p/day of the 90% confidence interval has been applied. The relative precision achieved was 3.34%.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the parameter is based on WCFT /04/ and the same is deemed acceptable to the verification team.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	N/A
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	$Q_{p,y, rawboil,y}$ Liters per person per day (l/person/day)
Measuring frequency/Time Interval:	At least biennially
Reported value & Unit:	0.52, Liters per person per day (l/person/day)
Verified Source of Data	WCFT /04/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, refer assessment above for WCFT. The sample size was not sufficient to comply with the 90/10 rule, hence the upper bound of the 90% confidence interval, being 0.52 l/p/day has been applied and the same is deemed acceptable to the verification team.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	N/A
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	$Q_{p,cleanboil,y}$ Liters per person per day (l/person/day)
Measuring frequency/Time Interval:	At least biennially
Reported value & Unit:	0.21, Liters per person per day (l/person/day)
Verified Source of Data	WCFT /04/

Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, refer assessment above for WCFT. During WCFT, none of the households consumed water from jerrycan 3, hence the water consumption from jerrycan 3 was zero and no statistical analysis was necessary, and the dame is deemed acceptable to the verification team.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	N/A
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	$U_{p,y}$ Usage rate in project scenario p during year y
Measuring frequency/Time Interval:	Annual
Reported value & Unit:	78.83%
Verified Source of Data	Verification team has cross checked the following documents:  Survey records for the usage rate and Impact parameters /05/. This survey has been verified through acceptance sampling during the onsite interviews, please refer to the assessment in section C.4 of this report.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, refer assessment above.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	N/A
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	$LE_{p,y}$ (Leakage in project scenario p during year y)

Measuring frequency/Time Interval:	Every Two Year
Reported value & Unit:	0 tCO2e /year
Verified Source of Data	Verification team has cross checked the document Monitoring (Leakage) Survey and report by doing the Acceptance sampling.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, refer assessment above. The monitoring frequency provided by the PD is two.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	Quality of the treated water
Measuring frequency/Time Interval:	The first test within 6 months of the stated project start date, afterwards quarterly
Reported value & Unit:	Positive or Negative based on the test results, E.Coli / 100 ml
Verified Source of Data	Verification team has cross checked the following documents:  <ol style="list-style-type: none"> <li>1. E-Coli test records /17/ records for each water points</li> <li>2. Project Water Point Database/03/</li> </ol>
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, The verification Team confirms that for this monitoring period, all water points have been tested for E-coli and for those, where needed, as well in the presence of a local health authority in the rainy season when there is a higher risk of contamination. There weas tests by an accredited laboratory during this monitoring period. E. coli test results have been submitted to the VVB. For those water points which were rehabilitated within the last 6 months of the monitoring period, or which were not functional in the rainy season, no E. coli tests in the presence of the local health authority were conducted. All of the E. coli tests were negative, or in other words did not show any presence of E. coli in the water.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	mWater E. coli test kits
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.



In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA
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Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	Hygiene campaigns
Measuring frequency/Time Interval:	Annual hygiene campaigns results
Reported value & Unit:	4,763 people in 61 community campaigns have been trained and 26 trainers.
Verified Source of Data	Verification team has cross checked the following documents by reviewing the records of wash trainings /16/ and committee /16/;
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Refer assessment above
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	Treatment capacity of the project technology/improved sources
Measuring frequency/Time Interval:	Once at the time of registration or at inclusion of new technology
Reported value & Unit:	Liters per day
Verified Source of Data	Verification team has cross checked the following documents: W4C Project Water Point Database /03/ mWater database platform /03/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Refer assessment above
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.

In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA
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Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	EF <sub>grid,y</sub> CO <sub>2</sub> emission factor of the grid electricity in year y
Measuring frequency/Time Interval:	At the time of issuance
Reported value & Unit:	0.654 tCO <sub>2e</sub> /MWh
Verified Source of Data	Verification team has cross checked the following documents: <a href="https://pub.iges.or.jp/pub/iges-list-grid-emission-factors">https://pub.iges.or.jp/pub/iges-list-grid-emission-factors</a> Furthermore, verification team has noted that no grid electricity has been consumed for pumping water in a standpipe system to the different water points.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Refer assessment above
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	EC <sub>y</sub> Quantity of grid electricity consumed for pumping water in a standpipe system to the different water points in year y.
Measuring frequency/Time Interval:	Continuous monitoring and at least monthly recording (provided that there is consumption of grid electricity)
Reported value & Unit:	0 MWh
Verified Source of Data	Verification team has noted that no grid electricity has been consumed for pumping water in a standpipe system to the different water points.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Refer assessment above
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA

Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 13, Climate action
Data / Parameter: (as in monitoring plan of PDD):	$FC_{diesel,y}$ Quantity of diesel consumed for pumping water in a standpipe system to the different water points or any other water point in year y
Measuring frequency/Time Interval:	Continuous monitoring and at least monthly recording (provided that there is diesel consumption)
Reported value & Unit:	1,472.16 Litres
Verified Source of Data	One diesel generators (in the standpipe systems Rukoronko) /13/ have been used from time to time as a back-up to solar energy during this monitoring period.  The diesel consumption has been calculated based on the time (HH:MM) the diesel generators were active (see excel spreadsheet 'rukoronko fuel_v2'/13/) and the calculated diesel fuel consumption per hour (see detailed calculation in the excel spreadsheet 'rukoronko fuel_v2') /13/. This calculated diesel consumption has been compared with the purchase receipts /13/ and the higher value based on purchase receipts has been used for conservativeness.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Refer assessment above
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 1, No poverty
Data / Parameter: (as in monitoring plan of PDD):	$Q_{tot,p,y}$

	Total quantity of safe water in litres per year supplied by the rehabilitated/newly drilled boreholes of the project to the communities in year y
Measuring frequency/Time Interval:	At least biennially
Reported value & Unit:	72,769,585 l/monitoring period
Verified Source of Data	Verification team has cross checked the following documents:  Lists supplied by the WASH committee responsible for the water points, New Wash trainings, W4C Wash Training and WASH committees /04,05/.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Calculated as:  $Q_{tot,p,y} = N_{p,y} * Q_{p,y}$  Where  $N_{p,y}$ = Number of person.days consuming water supplied by project scenario p through year y  $Q_{p,y}$ = Quantity of safe water supplied in the project scenario p during the year y, using the “zero or low” emissions’ clean water supply technology  $Q_{tot,p,y} = 12,770,820 * 5.698 = 72,769,585$ l/monitoring period
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	N/A
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 3, Good health and well-being
Data / Parameter: (as in monitoring plan of PDD):	$P_{IWBD,y}$ Good health and well-being
Measuring frequency/Time Interval:	Annual
Reported value & Unit:	Amongst the households using the project water point: 98% reported a decrease 01% reported no change 01% reported doesn't know
Verified Source of Data	Verification team has cross checked the following documents during the onsite interviews:  Survey records for the usage rate and Impact parameters /05/. This survey has been verified through acceptance sampling during the onsite

	interviews, please refer to the assessment in section C.4 of this report.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, refer assessment above.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	N/A
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 5, Gender equality
Data / Parameter: (as in monitoring plan of PDD):	P <sub>ITEC, y</sub> Gender equality
Measuring frequency/Time Interval:	Annual
Reported value & Unit:	Amongst the households using the project water point: In terms of time required to collect water: 92% reported a decrease 07% reported no change 01% reported an increase  In terms of effort spent for collecting wood fuel: 93% reported a decrease 07% reported no change
Verified Source of Data	Verification team has cross checked the following documents:  Survey records for the usage rate and Impact parameters /05/. This survey has been verified through acceptance sampling during onsite interviews, please refer to the assessment in section D.4 of this report.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, refer assessment above.
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	N/A
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Relevant SDG Indicator	SDG 6, Clean water and sanitation
Data / Parameter: (as in monitoring plan of PDD):	$N_{WASH, y}$
Measuring frequency/Time Interval:	Annual hygiene campaigns results
Reported value & Unit:	4,763 people in 61 Community campaigns have been trained so far as well as 26 trainers.as per the W4C Wash Training and WASH committees.xlsx”
Verified Source of Data	Verification team has cross checked the following documents during the document review and onsite interviews: Records of wash trainings /16/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Refer assessment above
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA