Verification report for GS4GG Programme of Activity (Gold Standard for the Global Goals)	
BASIC INFORMATION	
Title of the GS4GG Project	GS1247: Improved Kitchen Regimes Multi-Country PoA GS1247 VPA 65 Zoba Debub Community Boreholes (GS5038) GS1247 VPA 66 Zoba Dzebub Community Boreholes (GS5039) GS1247 VPA 67 Zoba Debub Community Boreholes (GS5040) GS1247 VPA 68 Zoba Debub Community Boreholes (GS5041) GS1247 VPA 69 Zoba Debub Community Boreholes (GS5042) GS1247 VPA 70 Zoba Debub Community Boreholes (GS5043) GS1247 VPA 119 Zoba Debub Community Boreholes (GS5825) GS1247 VPA 120 Zoba Debub Community Boreholes (GS5826) GS1247 VPA 121 Zoba Debub Community Boreholes (GS5827) GS1247 VPA 176 Zoba Debub Community Boreholes (GS7330) GS1247 VPA 177 Zoba Debub Community Boreholes (GS7331) GS1247 VPA 178 Zoba Debub Community Boreholes (GS7332) GS1247 VPA 179 Zoba Debub Community Boreholes (GS7333) GS1247 VPA 180 Zoba Debub Community Boreholes (GS7334) GS1247 VPA 181 Zoba Debub Community Boreholes (GS7335) GS1247 VPA 182 Zoba Debub Community Boreholes (GS7336)
GS ID of Project	GS5038 GS5039 GS5040 GS5041 GS5042 GS5043 GS5825 GS5826 GS5827 GS7330 GS7331 GS7332 GS7333 GS7334 GS7335 GS7336
Version number of the verification and certification report	2.0
Completion date of the verification and certification report	11/09/2024
Monitoring period number and duration of this monitoring period	MP6/MP5 VPA 65 (GS5038) – MP6 VPA 66 (GS5039) – MP6 VPA 67 (GS5040) – MP6 VPA 68 (GS5041) – MP6

	VPA 69 (GS5042) – MP6 VPA 70 (GS5043) – MP6 VPA 119 (GS5825) – MP5 VPA 120 (GS5826) – MP5 VPA 121 (GS5827) – MP5 VPA 176 (GS7330) – MP6 VPA 177 (GS7331) – MP6 VPA 178 (GS7332) – MP6 VPA 179 (GS7333) – MP6 VPA 180 (GS7334) – MP6 VPA 181 (GS7335) – MP6 VPA 182 (GS7336) – MP6 Duration: VPA 65 (GS5038) – 01/06/2022 - 20/10/2023 (inclusive of both days) VPA 66 (GS5039) – 01/06/2022 - 20/10/2023 (inclusive of both days) VPA 67 (GS5040) – 01/06/2022 - 20/10/2023 (inclusive of both days) VPA 68 (GS5041) – 01/06/2022 - 22/10/2023 (inclusive of both days) VPA 69 (GS5042) – 01/06/2022 - 25/10/2023 (inclusive of both days) VPA 70 (GS5043) – 01/06/2022 - 21/10/2023 (inclusive of both days) VPA 119 (GS5825) – 01/06/2022 - 17/01/2024 (inclusive of both days) VPA 120 (GS5826) – 01/06/2022 - 17/01/2024 (inclusive of both days) VPA 121 (GS5827) – 01/06/2022 - 17/01/2024 (inclusive of both days) VPA 176 (GS7330) – 01/06/2022 - 28/10/2023 (inclusive of both days) VPA 177 (GS7331) – 01/06/2022 - 03/01/2024 (inclusive of both days) VPA 178 (GS7332) – 01/06/2022 - 17/01/2024 (inclusive of both days) VPA 179 (GS7333) – 01/06/2022 - 17/01/2024 (inclusive of both days) VPA 180 (GS7334) – 01/06/2022 - 17/01/2024 (inclusive of both days) VPA 181 (GS7335) – 01/06/2022 - 25/10/2023 (inclusive of both days) VPA 182 (GS7336) – 01/06/2022 - 29/12/2023 (inclusive of both days)
Version number of the monitoring report to which this report applies	4.0 Dated: 31/07/2024
Coordinating/managing entity (CME)	CO2balance UK Ltd.

Project Representative(s)	Johanna Grosssteinbeck Rebecca Barton (CO2balance UK Ltd)
Host Party	State of Eritrea
Applied methodologies and standardized baselines	Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), Version 1.0
Activity requirements applied	☒ Community Services Activities ☐ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Mandatory sectoral scopes	Sectoral Scope 3: Energy Demand
Product requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

SDGs Targeted	SDG Impact	Amounts Achieved	Units/Products
SDG:3 Good Health and Well Being	SDG 3: Good Health and Wellbeing: 3.9.1 Mortality rate attributed to household and ambient air pollution	All VPAs: 95% decrease in household smoke	Percentage
SDG:5 Gender Equality	SDG 5: Gender Equality: 5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location.	Across all VPAs: 0.72 hours of time saved by borehole project on average per household per day	Hours
SDG:6 Clean Water and Sanitation	By 2030, achieve universal and equitable access to safe and affordable drinking water for all.	41,226 additional people gain access to safe water VPA breakdown: GS5038: 2,227 GS5039: 2,214 GS5040: 2,272 GS5041: 2,337 GS5042: 2,187 GS5043: 2,076 GS5825: 2,428 GS5826: 2,281 GS5827: 2,637 GS7330: 2,966 GS7331: 2,671 GS7332: 3,258 GS7333: 3,046	Number of People

		GS7334: 2,773 GS7335: 2,845 GS7336: 3,008	
SDG:13 Climate Action	SDG13: Climate Action (Mandatory): 13.3.2 Number of countries that have communicated the strengthening, systematic and individual capacity-building to implement adaptation, mitigation and technology transfer and development actions.	Total Emission Reductions: 79,172 tCO_2e/y Per VPA: GS5038: 4,108 tCO2e/y GS5039: 4,089 tCO2e/y GS5040: 4,141 tCO2e/y GS5041: 4,014 tCO2e/y GS5042: 3,713 tCO2e/y GS5043: 4,179 tCO2e/y GS5825: 6,529 tCO2e/y GS5826: 6,351 tCO2e/y GS5827: 5,690 tCO2e/y GS7330: 4,648 tCO2e/y GS7331: 4,575 tCO2e/y GS7332: 6,338 tCO2e/y GS7333: 6,303 tCO2e/y GS7334: 5,486 tCO2e/y GS7335: 4,395 tCO2e/y GS7336: 4,613 tCO2e/y	tCO_2e/VERs

Name of the Gold Standard approved auditor (VVB)	Earthood Services Private Limited
Name, position and signature of the approver of the verification and certification report	 Dr. Kaviraj Singh Managing Director

SECTION A. Executive summary

The GS PoA titled "Improved Kitchen Regimes Multi-Country PoA" involves the distribution of improved cookstoves and safe water technologies across several countries. The project's primary goal is to reduce the amount of wood used for cooking and water boiling, with a focus on additional advantages for the local communities, including a decrease in illnesses caused by indoor air pollution, smoke inhalation, and consumption of tainted water; improved gender equality; increased access to safe water and clean cooking technology; increased employment opportunities; and less time and money spent on collecting firewood.

The Gold Standard methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption" Version 1.0/5/ has been applied for multiple VPAs in the Zoba Debub region in the state of Eritrea.

The initiative will enable the provision of safe water through the rehabilitation of borehole technology to hundreds of homes across the Zoba Debub region of Eritrea. By ensuring that households have access to safe water, the project will ensure that they use less firewood for water purification, which will reduce carbon dioxide emissions from combustion. 87 boreholes have been rehabilitated by CO2 balance as part of these VPAs rehabilitation includes replacement of defective parts of the boreholes in order to ensure to ensure the functionality of the borehole. All water points covered by the VPAs are operational but faced with some technical problem hence the PD has discounted the non-functional days from the respective VPAs ERs.

The rehabilitation date was designated as the commencement date for operations. The CME excluded the initial day of credit allocation, and the crediting period commences on the day subsequent to the borehole's rehabilitation. The duration of the initial crediting period is set for 7 years, with the option for two renewals, culminating in a total of 21 years.

GS VPA ID	Start Date	Crediting period start date	Crediting period end date
5038	20/10/2016	21/10/2016	20/10/2023
5039	20/10/2016	21/10/2016	20/10/2023
5040	22/10/2016	23/10/2016	22/10/2023
5041	22/10/2016	23/10/2016	22/10/2023
5042	25/10/2016	26/10/2016	25/10/2023
5043	21/10/2016	22/10/2016	21/10/2023
5825	07/05/2017	08/05/2017	07/05/2024
5826	04/05/2017	05/05/2017	04/05/2024
5827	04/05/2017	05/05/2017	04/05/2024
7330	28/10/2016	29/10/2016	28/10/2023
7331	03/01/2017	04/01/2017	03/01/2024
7332	17/01/2017	18/01/2017	17/01/2024
7333	23/02/2017	24/02/2017	23/02/2024
7334	31/01/2017	01/02/2017	31/01/2024
7335	25/10/2016	26/10/2016	25/10/2023
7336	29/12/2016	30/12/2016	29/12/2023

The start date is established by the date of borehole rehabilitation after the project's initiation.
Boiling of water would have been conducted increasing the usage of fuel (firewood) without the VPAs. Project provides access to safe drinking water reducing the usage of non-renewable biomass fuels and its associated GHG emissions required for its purification.

The coordinating and managing entity (CME) of the PoA and the VPAs is CO2balance UK Ltd which also acts as the VPA implementer and the technology supplier for the all the VPAs.

The monitoring period covered under this verification is as given below (inclusive of both days):

VPA 65 (GS5038) – 01/06/2022 - 20/10/2023
VPA 66 (GS5039) – 01/06/2022 - 20/10/2023
VPA 67 (GS5040) – 01/06/2022 - 20/10/2023
VPA 68 (GS5041) – 01/06/2022 - 22/10/2023
VPA 69 (GS5042) – 01/06/2022 - 25/10/2023
VPA 70 (GS5043) – 01/06/2022 - 21/10/2023
VPA 119 (GS5825) – 01/06/2022 - 17/01/2024
VPA 120 (GS5826) – 01/06/2022 - 17/01/2024
VPA 121 (GS5827) – 01/06/2022 - 17/01/2024
VPA 176 (GS7330) – 01/06/2022 - 28/10/2023
VPA 177 (GS7331) – 01/06/2022 - 03/01/2024
VPA 178 (GS7332) – 01/06/2022 - 17/01/2024
VPA 179 (GS7333) – 01/06/2022 - 17/01/2024
VPA 180 (GS7334) – 01/06/2022 - 17/01/2024
VPA 181 (GS7335) – 01/06/2022 - 25/10/2023
VPA 182 (GS7336) – 01/06/2022 - 29/12/2023

The total GHG emission reductions for the current monitoring period is 79,172 tCO2e/year. Further, The SDG benefits achieved from the programme are listed in the table below in detail:

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/Products
SDG:3 Good Health and Well Being	SDG 3: Good Health and Wellbeing: 3.9.1 Mortality rate attributed to household and ambient air pollution	All VPAs: 95% decrease in household smoke	Percentage
SDG:5 Gender Equality	SDG 5: Gender Equality: 5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location.	Across all VPAs: 0.72 hours of time saved by borehole project on average per household per day	Hours
SDG:6 Clean Water and Sanitation	By 2030, achieve universal and equitable access to safe and affordable drinking water for all.	41,226 additional people gain access to safe water VPA breakdown: GS5038: 2,227 GS5039: 2,214 GS5040: 2,272 GS5041: 2,337 GS5042: 2,187 GS5043: 2,076	Number of people

		GS5825: 2,428 GS5826: 2,281 GS5827: 2,637 GS7330: 2,966 GS7331: 2,671 GS7332: 3,258 GS7333: 3,046 GS7334: 2,773 GS7335: 2,845 GS7336: 3,008	
SDG:13 Climate Action	SDG13: Climate Action (Mandatory): 13.3.2 Number of countries that have communicated the strengthening, systematic and individual capacity-building to implement adaptation, mitigation and technology transfer and development actions.	Total Emission Reductions: 79,172 tCO2e/y Per VPA: GS5038: 4,108 tCO2e/y GS5039: 4,089 tCO2e/y GS5040: 4,141 tCO2e/y GS5041: 4,014 tCO2e/y GS5042: 3,713 tCO2e/y GS5043: 4,179 tCO2e/y GS5825: 6,529 tCO2e/y GS5826: 6,351 tCO2e/y GS5827: 5,690 tCO2e/y GS7330: 4,648 tCO2e/y GS7331: 4,575 tCO2e/y GS7332: 6,338 tCO2e/y GS7333: 6,303 tCO2e/y GS7334: 5,486 tCO2e/y GS7335: 4,395 tCO2e/y GS7336: 4,613 tCO2e/y	tCO_2e/VERs

Scope of verification

The verification is an independent and objective review for determination of the monitored reductions in GHG emissions by the VVB. The verification includes the implementation and

operation of the PoA as set out in the registered PoA-DD/1/ & VPA-DDs/2/ for all VPAs in the monitoring period.

The verification tests the data and assertions set out in the monitoring report prepared for this monitoring period, and it is based on the review of the following:

(i) The approved methodology TPDDTEC – "Technologies and Practices to Displace Decentralized Thermal Energy Consumptions, Version 1.0 /5/
(ii) The registered PoA-DD/1/ & registered VPA-DDs/2/ and monitoring plan/2/
(iii) UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords/32/
(iv) GS4GG requirements /20/
(v) The CDM Validation and Verification Standard (VVS) version 3.0/26/ and The CDM Project Standard (PS) version 3.0/27/
(vi) Relevant decisions, guidance, and clarifications of the CMP and CDM Executive Board and any other information and references relevant to the project activity's reported emission reductions

The verification has considered both the quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC and GS4GG, as appropriate to the PoA. The verification is not meant to provide any consulting or recommendations to the CME/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification Process

The verification process is conducted as per internal GS4GG Requirements, which includes the following steps:

a) Contract with CME and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report)
b) Desk review (refer Section D.1 of this report) of Monitoring Report and corresponding ER sheet by verification team and remote audit/33/ (including sampling approach (refer Section D.4 of this report) to be applied) /3/4/
c) Remote audit (refer Section D.2 of this report) by verification team consistent of Team Leader and all Technical Experts, as a minimum/33/
d) Follow up activities e.g., interviews (refer Section D.3 of this report)
e) Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section D.5 of this report)
f) Independent technical review (refer Section B.2 of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
g) Reporting and closure of TR comments/findings (refer Section D.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section G and H of this report).
h) Issuance of final verification report to contracted CME (or authorized representatives) and submission of request for issuance, as appropriate.

Verification Conclusion

Based on the outcome of the verification process of the GS PoA "Improved Kitchen Regimes Multi-Country PoA" and its corresponding VPAs for the above-mentioned monitoring periods, we confirm that the implementation of referenced registered PoA/1/ and its VPAs is complying with applicable CDM and GS4GG rules and regulations as stated in the Monitoring Report (final) Version 4, dated 31/07/2024/03/. The GHG emission reductions were calculated in line with the approved baseline and monitoring methodologies TPDDTEC – "Technologies and Practices to Displace Decentralized Thermal Energy Consumptions, Version 1.0"/5/ and the monitoring plan contained in the registered PoA-DD/1/ and VPA-DDs/2/.

Earthood Services Private Limited (hereafter referred as "Earthood") is able to certify that the emission reductions from the registered PoA (GS 1247) "Improved Kitchen Regimes Multi-Country PoA" and its VPAs "Zoba Debub Community Boreholes" during the corresponding period and total amount is 79,172 tCO_2e/y for all VPAs. Therefore, this is being submitted for request for issuance, as per GS4GG principle & Requirements/20/ and UNFCCC procedures/25//26//27/.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	Remote audit	Interviews	Verification findings
1.	Team Leader (New)	IR	Vashisht	Sushant	Central office	Y	Y	Y	Y
2.	TA Expert (TA 3.1)	IR	Vashisht	Sushant	Central office	Y	Y	Y	Y
3.	Verifier	IR	Yadav	Vaishali	Central office	Y	Y	Y	Y
4.	GS approved auditor	IR	Phukan	Sukanya	Central office	Y	N	N	Y
5.	Local Expert (Eritrea)	EI	Michael	Mihrie	Central office	N	Y	Y	N
6.	Verifier	IR	Verma	Anvesha	Central office	Y	N	N	Y

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	Guleria	Shifali	Central Office
2.	Technical Expert (TA 3.1) to TR	IR	Guleria	Shifali	Central Office
3.	Approver	IR	Singh	Kaviraj	Central office

SECTION C. Application of materiality in conducting the verification

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.	Erroneous transfer of information from documented records (water quality tests, repair confirmation forms, carbon transfer forms etc.) to ER sheet/database.	Low	The documents also undergo regular internal checks to ensure the accuracy of data entry.	The records are checked on a sampling basis such that the information verified from database has low uncertainty within acceptable limits and is substantiated by remote audit observations/33/.
2.	Error in applying the formulae in the emission reduction calculation sheet	Low	The calculation method has been prescribed in the applied methodologies and further detailed in the registered PoA-DD/1/. There isn't any complex equation involved in the ER calculations. Also, the internal check ensures that such errors are identified in advance.	The emission reduction calculation sheet/4/ has been reviewed in detail by the assessment team. Each step for the calculation has been thoroughly checked to confirm the final numbers as well as the steps involved both computationally as well as, in accordance with the methodological requirement.

C.2. Consideration of materiality in conducting the verification

All errors were individual error and no extrapolation of errors in the final calculation of ERs was required. The verification team confirms that the final ERs/4/ are free from material errors with a reasonable level of assurance.

SECTION D. Means of verification

D.1. Desk/document review

The verification is performed primarily as a desk review of the documents submitted at various stages of assessments. The review is performed by assessment team using dedicated protocols (checklists). The assessment team cross checks the information provided in the documents (MR)/03/ and information from sources other than those used, if available, and also conducts independent background investigations. Earthood conducted a desk review as under:

1. A review of the data and information presented to verify their completeness.
2. A review of the monitoring plan (as described in VPA-DDs) /2/, the monitoring methodology including applicable tool(s) and, where applicable/5/, the applied standardized baseline, paying particular attention to the frequency of measurements, and the quality assurance and quality control procedures
3. A review of calculations and assumptions made in determining the GHG data and emission reductions/4/.

4. An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions

The list of documents reviewed during the verification is provided under appendix 3 of this report.

D.2. Remote Site Inspection

Duration of Remote-site inspection: 27/04/2024 to 29/04/2024				
No.	**Activity performed Remote Audit**	**Site location**	**Date**	**Team member**
1.	An investigation of whether all relevant equipment is installed and works as anticipated.	Various location in Eritrea	27/04/2024 to 29/04/2024	Sushant Vashisht, Vaishali Yadav, Mihrie Michael
2.	The operating staff was interviewed and observed to check the risks of inappropriate operation and data collection procedures.			
3.	Information processes for generating, aggregating, and reporting the selected monitored parameters were reviewed.			
4.	The monitoring processes, routines, and documentations to check their proper application			
5.	Checking the monitoring data and monitoring/usage survey data.			
6.	Checking for possibility of double counting and/or leakage			

D.3. Interviews

No.	**Interviewee**			**Date**	**Subject**	**Team member**
	Last name	**First name**	**Affiliation**			
Interview of the Field Officers of CME						
1	-	Iyassu	VITA Field Staff (Local Implementer)	27/04/2024 to 29/04/2024	Implementation of the project, monitoring procedures, WASH trainings, monitoring surveys	Sushant Vashisht, Vaishali Yadav, Mihrie Michael
2	Dillon	Maria	VITA field staff (Local Implementer)			
Survey's						
Sr. No.	**Affiliation**		**Borehole UID**	**Date**	**Subject**	**Team Member**
1.	End user		ZD101	27/04/2024 to 29/04/2024	The range and extent of questions asked during the survey is presented in	Sushant Vashisht, Vaishali Yadav, Mihrie Michael
2.	End user		ZD101			
3.	End user		ZD101			

4.	End user	ZD101		detail in section D.3.1	
5.	End user	ZD109			
6.	End user	ZD109			
7.	End user	ZD108			
8.	End user	ZD108			
9.	End user	ZD191			
10.	End user	ZD191			
11.	End user	ZD191			
12.	End user	ZD191			
13.	End user	ZD191			
14.	End user	ZD050			
15.	End user	ZD041			
16.	End user	ZD041			
17.	End user	ZD199			
18.	End user	ZD199			
19.	End user	ZD037			
20.	End user	ZD037			

D.3.1. Type of questions asked to end-user by the Verification Team members

The respondents in all the survey viz., were asked about their demographics as follows, in order to establish their identities stated in the survey conducted earlier by the PD/CME as mentioned in MR/03/ and survey sheets/10/11/

Usage Survey/Monitoring survey

No.	Questions asked by Team member as part of project monitoring, WCFT & Usage survey	Nature of response
1.	What is the main source of water?	Details provided and observations found consistent with monitoring data.
2.	What is the purpose of usage of water	
3.	Number of people in HH/gender	
4.	Who is responsible for water collection?	
5.	What is the name of borehole used for water collection and the distance from it?	
6.	How much time is taken in one trip?	
7.	How many trips in one day?	
8.	What is the quantity and number of cans filled in one trip?	
9.	Which water purification technique is used for making water safe?	
10.	Did they suffer from any stomach related infection/ water borne diseases?	
11.	Has borehole project saved their time?	
12.	Has any borehole you use been non-functional anytime in the last 12 months?	
13.	What is the source of fuel (biomass/ nearby area/ forests/ local market/ etc.) and time taken for collection?	
14.	When was the borehole installed and when did you first collect water from the borehole?	
15.	Do you know how and who to contact in case you are facing any issues with the borehole?	
16.	Do you still feel the need to boil the water from the borehole, or do you directly consume it? (In comparison to the baseline scenario)	

All the beneficiaries reported that the water quality is good and there has been no illness because of water from repaired boreholes, and they feel that there has been an improvement in the indoor air quality due to no boiling of water for purification. All the end users also reported that they are aware of the grievance mechanism.

D.4. Sampling approach

CME's Sampling Approach

For the purpose of sampling, CME has followed the CDM guidelines for sampling and surveys for CDM project activities and programmes of activities version 9.0 /23/ which is in-line with the registered PoA-DD /01/. The CME has applied Stratified Random Sampling at PoA level for different monitoring parameters as per validated PoA DD /01/ and VPA-DDs /02/. 95/10 confidence precision was applied by CME in the sampling which is appropriate as per the single sampling covering 16 VPAs within the boundaries of PoA geographical location state of Eritrea. Thus, PoA wide single sampling plan was used by the CME.

VVB's Sampling Approach

For verification purposes, the evaluation team used an acceptance sampling approach. Random sampling was carried out across the VPA while adhering to the principles of proportionate representation and the "Standard for Sampling and Surveys for CDM project activities and programmes of activities, Version 9.0"/23/.

In terms of numbers, vintage, and geographic spread, CO2balance used a sampling method that is appropriately representative of the population using rehabilitated boreholes. The project's protocol for conducting onsite surveys was confirmed through the remote audit/33/ with end users who were using the water from rehabilitated boreholes and compared with the field surveys through WCFT Survey/18/, Usage Survey and Project Survey performed/10//11/ by the CME was cross checked.
As per para 28 of the Sampling and surveys for CDM project activities and programmes of activities (Version 9.0)/23/ "When the project participants or the coordinating/managing entity have applied a sampling approach, the VVB may apply acceptance sampling as described in the steps indicated in paragraphs 29–38 below as part of validation/verification activities".

The CME has applied two different monitoring methods: the first being a qualitative user habit survey (i.e. project survey and usage survey) and the second being quantitative water consumption field test (WCFT's) for determining the value of the parameters $Q_{p,y,}$, $Q_{p,rawboil,y}$ and $Q_{p,cleanboil,y}$. Therefore, the verification team conducted acceptance sampling in line with paragraph 30 and 31 of the sampling standard version 9.0/23/.

Accordingly, the verification team randomly selected 10 households for each from Sampling frame i.e., Project survey & Usage survey from the CME monitoring survey list. This ensured that the samples selected for the VVB's surveys are selected in an unbiased manner.

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:

- The proportion of discrepancies between the CME's data and verification team's (field or onsite inspection results) data that can be considered acceptable. This is referred to as the AQL (Acceptable Quality Level): 0.5% was considered in this verification.

- The proportion of discrepancies between the CME's data and verification team's (field or onsite inspection results) data that would be considered unacceptable. This is the UQL (Unacceptable Quality Level): 20% was considered in this verification.

- The producer risk of 10% and consumer risk of 20% was considered for the VVB sampling under this verification.

Considering the above input values, a sample size of 10 was required, as referred from Table 2
of the CDM Sampling Standard /15/. Accordingly, Acceptance number (c) thus determined for
the sample size comes out to be 0.

The verification team selected the sample size as 10 households from each sampling Frame with 4 households as backup for the purpose of remote audit to check the acceptability of CME's sampling results or otherwise. VVB interviewed a total of 20 end users i.e., 10 from Usage Survey & 10 from Project Survey. Regarding the WCFT Survey, VVB cross checked the WCFT Survey with water consumption field test household data forms/18/ and Water quality test report published by Ministry land water & Environment Water resource department/37/. Hence, concluded that the survey results are found to be in compliance with the WCFT household data forms & WQT published by Ministry land water & Environment Water resource department.

Sample Size

CME has conducted sampling of three different types during the monitoring period:

1. WCFT survey
2. Usage Survey
3. Project Survey

The CME has conducted a usage survey to cover various aspects of the project and covered cross VPA samples for all the 16 VPAs. The VVB has followed Standard for Sampling and surveys for CDM project activities and programs of activities, Version 9, and applied acceptance sampling to validate the usage survey in accordance with para 28. Para 30 and 31 of standard suggests the AQL and UQL and maximum errors which have been followed by the VVB.

As per para 39 of the sampling standard version 9.0, "A DOE may select a different sample size than the one indicated in paragraph 32 above either by choosing a different value for the consumer risk and producer risk (e.g., 20 per cent for the consumer risk) when applying acceptance sampling or by using another approach, if any of the following conditions apply:

a) The estimated volume of annual GHG emission reductions of the project activity or the PoA being verified is equal to or less than 100,000 tCO2eq.

b) The security conditions in the project region prevents inspection of many samples (eg. conflict zones); or

c) The project activity or the PoA is located in a least developed country or a host party with 10 or fewer registered CDM project activities at the end of the monitoring period being verified."

The verification team determined the sample size for acceptance sampling by evaluating the following, using its own professional judgement and guidance in the Standard 'Sampling and surveys for CDM project activities and programme of activities, Version 9.0' /23/:

- The proportion of discrepancies between the CME's data and validation team's (field or remote site inspection results) data that can be considered acceptable. This is referred to as the AQL (Acceptable Quality Level): 0.5% was considered in this validation.
- The proportion of discrepancies between the CME's data and validation team's (field or remote site inspection results) data that would be considered unacceptable. This is the UQL (Unacceptable Quality Level): 20% was considered in this validation.
- The producer risk and consumer risk of 10% was considered.

Considering the above input values, a sample size of 10 was required as per Table 1 in the referred Standard for this monitoring period. Accordingly, acceptance number (c) thus determined for the sample size is 10.

AQL	UQL	Producer Risk	Consumer Risk	Sample Size; Min	Acceptance No.
0.5%	20%	10%	10%	08	0

Since remote audit was conducted, therefore VVB has verified 10 samples from VPA per technology to confirm the description of baseline technology, fuel type, number of devices framework in line with PoA and inclusion eligibility conditions stated in the VPA-DD/2/. This is in accordance with 4.1.1.e. of the 'Site Visit and Remote Audit Requirements and Procedures Ver 2.0' as per which in case of remote site visits "the samples size that VVB audits shall be 10% more than the minimum required sample size." Since 10 % of the minimum sample size '8' is 1.10, 2 extra samples are considered.

Also, VVB considered 3 households extra as backup for the purpose of remote site inspection to check the acceptability of CME's sampling results or otherwise. (only in case of the identified respondents are not available on the dates of remote audit/33/)

During the remote survey it is observed that the sampling survey results of the CME for all the CEPs checked were consistent with VVB's survey results. The sampling method used is in line with Standard: Sampling and surveys for CDM project activities and programme of activities/23/ and Guideline: Sampling and surveys for CDM project activities and programme of activities v4.0/22/. According to para 4.1.1 d in Site visit and Remote audit requirement and procedures v2.0/38/ for remote audit the Sampling shall be 10% more than the Minimum required samples. In all, the verification team conducted remote surveys for 10 households each from Monitoring survey & Usage survey.

The verification team will select random samples from the monitoring database provided by the CME to check their acceptability.

CME's sampling Approach

The number of samples/households that the CME undertook while performing the WCFT Survey, Usage Survey and Project Survey are as follows:

1. WCFT Survey – 40 households
2. Usage Survey – 120 households

3. Project Survey – 120 households

The basis for selecting the above samples by the CME is elaborated in the subsequent sections viz., E.5.5.

D.5. Clarification requests, corrective action requests and forward action requests raised:

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General	-	-	-
Compliance of the monitoring report with the monitoring report form	CL#07	-	-
Remaining forward action requests from previous validation	-	-	-
Specific-case VPA(s) considered for verification and covered in this report	-	-	-
Programme of activities			
Compliance of the programme implementation with the registered PoA-DD	CL#02	-	-
Implementation and operation of the management system	CL#02 CL#03, CL#04	-	-
Post-registration changes			
Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline	-	-	-
Corrections	-	-	-
Inclusion of a monitoring plan in a registered PoA-DD (including its generic VPA-DD(s))	-	-	-
Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline	-	-	-
Changes to the programme design of the registered PoA-DD (including corresponding changes to project design of the generic VPA-DD(s)) and updates to the eligibility criteria for inclusion of specific-case VPAs in the PoA	-	-	-
Types of changes specific to afforestation and reforestation activities	-	-	-
Voluntary project activities			
Compliance of the VPA implementation with the included VPA design document	-	CAR#01	-
Post-registration changes	-	-	-
Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline	-	-	-
Corrections	-	-	-
Changes to the start date of the crediting period	-	-	-
Inclusion of a monitoring plan to an included VPA-DD	-	-	-

Permanent changes to the monitoring plan as described in the included VPA-DD, applied methodology, or applied standardized baseline	-	-	-
Changes to the programme design of the included VPA-DD	-	-	-
Types of changes specific to afforestation and reforestation component project activities	-	-	-
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
Data and parameters fixed ex ante or at renewal of crediting period	-	-	-
Data and parameters monitored	CL#04, & CL#08 CL#05	-	-
Implementation of sampling plan	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	-	-
Calculation of baseline GHG emissions or baseline net GHG removals by sinks	-	-	-
Calculation of project GHG emissions or actual net GHG removals by sinks	-	-	-
Calculation of leakage GHG emissions	-	-	-
Summary of calculation of GHG emission reductions or net GHG removals by sinks	-	-	-
Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included specific-case VPA	-	-	-
Remarks on difference from estimated value in registered VPA-DD	-	-	-
Stakeholder Inputs and Legal Disputes	-	CAR#02	-
Others (ER sheet)	CL#01, CL#08	-	-
Total	**08 CLs**	**02 CARs**	**00 FAR**

SECTION E.

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

Means of verification	VVB checked from the Gold Standard website that the prescribed form has been used for preparing the Monitoring Report/3/. The CME used the Gold Standards for Global Goals latest MR template version 1.1/3.1/ available on the GS webpage and all the details were filled as per the MR template filling guidelines.
Findings	No finding was raised.

Conclusion	The verification team confirms the compliance of the monitoring report with the latest version of the GS monitoring report template and the instructions therein for filling out the form.

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

No FARs were issued from performance certification from the last MP.

E.3. VPAs considered for verification and covered in this report

GS ID and title of the VPAs	Is the VPA considered for this verification? (yes/no)	Version of the VPA-DD/ PoA-DD	Confirmation that a request for issuance including the VPA has been published for the previous monitoring period (Y/N)
GS1247: Improved Kitchen Regimes Multi-Country PoA GS1247 VPA 65 Zoba Debub Community Boreholes (GS5038) GS1247 VPA 66 Zoba Debub Community Boreholes (GS5039) GS1247 VPA 67 Zoba Debub Community Boreholes (GS5040) GS1247 VPA 68 Zoba Debub Community Boreholes (GS5041) GS1247 VPA 69 Zoba Debub Community Boreholes (GS5042) GS1247 VPA 70 Zoba Debub Community Boreholes (GS5043) GS1247 VPA 119 Zoba Debub Community Boreholes (GS5825) GS1247 VPA 120 Zoba Debub Community Boreholes (GS5826) GS1247 VPA 121 Zoba Debub Community Boreholes (GS5827) GS1247 VPA 176 Zoba Debub Community Boreholes (GS7330) GS1247 VPA 177 Zoba Debub Community Boreholes (GS7331) GS1247 VPA 178 Zoba Debub Community Boreholes (GS7332) GS1247 VPA 179 Zoba Debub Community Boreholes (GS7333) GS1247 VPA 180 Zoba Debub Community Boreholes (GS7334) GS1247 VPA 181 Zoba Debub Community Boreholes (GS7335) GS1247 VPA 182 Zoba Debub Community Boreholes (GS7336)	Yes (all the VPAs)	VPA 65-70 (GS5038-43) – v1.5 VPA 119-121 (GS5825-7) – v4 VPA 176-82 (GS7330-6) – v2	Yes (all the VPAs)

E.4. Programme of activities

E.4.1. Compliance of the programme implementation with the registered programme design document

Means of verification	The initiative is designed to facilitate access to clean water for numerous families in the Zoba Debub region through the implementation of borehole technology. This intervention will lead to a decrease in the use of firewood for purifying water, thereby contributing to a lower output of carbon dioxide emissions resulting from burning processes. CO2balance UK Ltd. is the PoA's coordinating/managing entity (CME) and the VPA's implementer. The objective of CO2balance is to finance and create high-impact climate mitigation projects. The evaluation team certifies that the boreholes have been rehabilitated in solely in Eritrea (physical boundary), and hence the geographical borders of the implemented VPAs correspond to the acceptable VPA-DDs /2/. Furthermore, the assessment team verifies that: • The VPAs are implemented within the border of the VPAs as defined in the registered PoA-DD/1/, based on a review of repair confirmation forms by CME/9/36/and an interview performed during the remote audit /33/. • All physical aspects of the VPA recommended in the updated acceptable VPA-DDs/2/ have been implemented. The information (including data and variables) in the MR/3/ is determined to be consistent with the specifics in the approved VPA-DDs/2/. The verification team determined that the project description included in MR was comprehensive and correct, and that it corresponded to the updated acceptable VPA-DDs/2/ **Grievance Mechanism** For effective implementation of the project, in-depth training was provided to the water point committees and borehole managers so they may efficiently carry out their tasks. Committees for water points have been established during the initial WASH training. Communities have the chance to elect the water point committee members during WASH trainings/14/ that are specific to each borehole, and participation is voluntary. It will be preferable to promote equal representation of women and men on water point committees, including equal influence in decision-making on the community borehole. Committee chairs will be able to assign committee members and dependable neighborhood residents the duty of keeping the borehole secured and secure while not in use. The local CO2balance field officer's contact information will be available to water point committees, and they can use it if they have any problems with the borehole or the committee.
Findings	CL#02 was raised and resolved.

Conclusion

The verification team can confirm that all physical features (technology, monitoring and equipment) of the registered VPAs were in place and that the CME operated the project activity in accordance with the registered VPA-DDs/2/.

During the current monitoring period, emissions were reduced by 79,172 tCO_2e/y. The following values SDGs were attained in this monitoring period by VPA:

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/Products
SDG:3 Good Health and Well Being	SDG 3: Good Health and Wellbeing: 3.9.1 Mortality rate attributed to household and ambient air pollution	All VPAs: 95% decrease in household smoke	P_{safe} (additional persons consuming safe water in the project activity compared to the baseline scenario)
SDG:5 Gender Equality	SDG 5: Gender Equality: 5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location.	Across all VPAs: 0.72 hours of time saved by borehole project on average per household per day	TR_y (reduction in time spent on collection)
SDG:6 Clean Water and Sanitation	By 2030, achieve universal and equitable access to safe and affordable drinking water for all.	41,226 additional people gain access to safe water VPA breakdown: GS5038: 2,227 GS5039: 2,214 GS5040: 2,272 GS5041: 2,337 GS5042: 2,187 GS5043: 2,076 GS5825: 2,428 GS5826: 2,282 GS5827: 2,637 GS7330: 2,966 GS7331: 2,671 GS7332: 3,258 GS7333: 3,046 GS7334: 2,773 GS7335: 2,845 GS7336: 3,008	P_{access} (additional persons with basic access to safe water in the project activity compared to the baseline scenario)
SDG:13 Climate Action	SDG13: Climate Action Mandatory): 13.3.2 Number of	Total Emission Reductions:	tCO_2e/VERs

		countries that have communicated the strengthening, systematic and individual capacity-building to implement adaptation, mitigation and technology transfer and development actions.	79,172 tCO2e/y Per VPA: GS5038: 4,108 tCO2e/y GS5039: 4,089 tCO2e/y GS5040: 4,141 tCO2e/y GS5041: 4,014 tCO2e/y GS5042: 3,713 tCO2e/y GS5043: 4,179 tCO2e/y GS5825: 6,529 tCO2e/y GS5826: 6,351 tCO2e/y GS5827: 5,690 tCO2e/y GS7330: 4,648 tCO2e/y GS7331: 4,575 tCO2e/y GS7332: 6,338 tCO2e/y GS7333: 6,303 tCO2e/y GS7334: 5,486 tCO2e/y GS7335: 4,395 tCO2e/y GS7336: 4,613 tCO2e/y	

E.4.2. Implementation and operation of the management system

Means of verification	Based on a review of records and interviews with CME representatives and the monitoring team, as well as remote audit by the Team Lead/33/, it is confirmed that the CME has implemented an appropriate management and operational system for monitoring and reporting emission reductions. The surveys and sampling processes for the monitoring of the ERs are clearly defined, including an evaluation of their competency. A comprehensive installation record of the boreholes with the following information is backed up electronically along with the original documentation being stored in the appropriate office: • Date of Installation/ Rehabilitation • GPS location of the borehole • Model of the borehole

	• Quantity of boreholes installed • The total number of people obtaining their water from each borehole • Mode of use: commercial/ domestic The enumerators or data collectors are also provided with the training and. This was verified from their training records/13/14/. The organizational structure and monitoring roles and duties are consistent with the situation on the ground, as validated by interviews with CME representatives during the remote audit/33/. As a result, the verification team affirms that the structure is adequate. After the remote audit interviews, it was concluded that the CME had an effective plan for management and monitoring/reporting of emission reductions/04/. They also provided adequate tools for repairing, monitoring, and reporting. The company itself provides oversight for all these aspects especially when it comes to data about the water quality of the rehabilitated boreholes from CO2balance members who are responsible for monitoring those things which is collected by both staff members and through reports from CO2balance members. During the remote audit, the implementation and operation of the management system were also checked with beneficiaries. As a result, the verification team confirms that the rehabilitated boreholes were punched with Unique IDs to avoid double counting, which was found to be consistent with the information in the database. Furthermore, the remote audit for the VPAs during this verification confirmed the CME management system is in place with the registered VPAs. The number of households was verified through the examination of supporting documents submitted by the PD. Additionally, the implementation and monitoring procedures were validated via interviews with end users, the PD representative, and local stakeholders. Consequently, the assessment team was able to attain a reasonable level of assurance through a remote audit conducted telephonically from 27/04/2024 to 29/04/2024. The following audit techniques were employed: • Unique Identification of Water Boreholes: Each water borehole installed under the project is assigned a UID corresponding to its batch. This UID system ensures that each borehole is distinct and traceable. • Cross-Project UID Verification: The VVB cross-checked all UIDs from all the VPAs by comparing them in a separate sheet. Conditional formatting was applied to identify any potential duplicate IDs with the names & address of all the end users across these projects. The verification confirmed that all UIDs & End users capped to each water boreholes were unique and not repeated across different projects managed by the same PD. • Identification Marks: All water boreholes installed by CME carry a distinctive identification mark, differentiating them from other boreholes in the region. This identification mark was verified by the VVB during the remote audit. • Check for Duplicate Entries and Double Counting: During the desk review, the VVB utilized a conditional formatting function in Excel to identify any duplicate entries or cases of double counting in the database. The VVB confirms that no duplicate entries or double counting were found in the database.

Findings	CL#02, CL#03, CL#04 were raised and resolved.
Conclusion	The verification team assessed the management systems in place to implement the monitoring of the PoA. This included the roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system. The roles and responsibilities data collection transfer and aggregation procedures, data storage and archiving for the monitoring system have been provided in the MR /3/. The verification team confirms that the monitoring management system of the VPA and by extension PoA is in place with the responsibilities properly identified and established as per the revised approved PoA-DD/1/.

E.4.3. Post-registration changes

E.4.3.1. Corrections

Not Applicable

E.4.3.2. Inclusion of a monitoring plan

Not Applicable

E.4.3.3. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

Not Applicable

E.4.3.4. Changes to the programme design

Not Applicable

E.4.3.5. Addition of CPA inclusion template

Not Applicable

E.4.3.6. Change of coordination/managing entity

Not Applicable

E.4.3.7. Changes specific to afforestation and reforestation activities

Not Applicable

E.5. Voluntary project activity

E.5.1. Compliance of the VPA implementation with the included VPA design document

Means of verification	According to the approved VPA design, all the Voluntary Project Activity's (VPAs) have been executed inside the project boundaries. The project will help provide safe water to hundreds of households in Zoba Debub district counties by utilizing borehole technology. By providing safe water, the project will ensure that households use less or no firewood during the water purification process, resulting in lower carbon dioxide emissions from the combustion process. An overview of all field project activities is provided in the table below as verified in the monitoring report/3/:

Date	Activity
20/10/2016	Project start date (Date of first borehole rehabilitation under GS1247)

	21/10/2016	Start of project crediting period (after the start date of first borehole rehabilitation under GS1247)	
	19/12/2022 – 22/12/2022	WCFT Survey	
	14/12/2022 – 17/12/2022 and 12/09/2023 - 14/09/2023	Usage Survey	
	14/12/2022 – 17/12/2022 and 12/09/2023 - 14/09/2023	Project Survey	
Findings	CAR#01 was raised and resolved.		
Conclusion	• The verification team is of the opinion that physical features of the VPAs have been implemented in accordance with the VPA-DDs/2/. • It is also confirmed, through the review of the supporting documentation, that physical features of the component VPA have been implemented in accordance with the VPA-DDs/2/. • The VPAs was also found to be completely operational in line with the VPA-DDs/2/. • The information provided in the relevant sections of the monitoring report are appropriately describe the implementation and operational status of the PoA.		

E.5.2. Post-Design Certification changes

E.5.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

Not Applicable

E.5.2.2. Corrections

Not Applicable

E.5.2.3. Changes to the start-date of the crediting period

Not Applicable

E.5.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

Not Applicable

E.5.2.5. Changes to project design of approved project

Not Applicable.

E.5.3. Compliance of the registered monitoring plan with applied methodologies and standardized baselines

Means of verification	The monitoring plan contained in the VPA-DDs/02/ was reviewed in relation to the monitoring requirements of the applied methodology, TPDDTEC, version 1.0/05/, as well as the PoA DD /01/, bearing in mind the technology involved. In light of the review conducted, it was found that the monitoring plan in the VPA-DDs/02/ contains all the required parameters to be monitored in the context of the VPA design and description and allows determination of emission reductions according to the PoA DD/01/ and applied methodology/05/.
Findings	No findings were raised.
Conclusion	The monitoring plan is in line with the approved methodology, Gold Standard Simplified Methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 1.0/05/,

	that is included in the registered PoA DD/01/ and VPA-DDs/02/. The monitoring plan is in accordance with the applied methodology /05/ that is included in the VPA-DDs/02/.

E.5.4. Compliance of monitoring activities with the registered monitoring plan

E.5.4.1. Data and parameters fixed ex ante or at renewal of crediting period

SDG13: CO_2 emission factor arising from use of wood fuel in baseline scenario in tCO2/TJ

Means of verification	$EF_{b,CO2}$ - The value is fixed and is derived from 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion, Table 2.5 - Default emission factors for stationary combustion in the residential and agriculture/forestry/fishing/fishing farms categories/34/. The mean value of the range of default IPCC values has been utilized. This value is used towards determination of baseline emissions. **The verified value is: 112 tCO2/TJ (fuelwood)**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report /3/ and Emission Reduction Spreadsheet /4/ are consistent with the registered VPA-DD/2/. The applied value is correct and justified.

SDG13: Non-CO_2 emission factor arising from use of wood fuel in baseline scenario, tCO_2e/TJ

Means of verification	$EF_{b,non\text{-}CO2}$ - The value is fixed and is derived from IPCC Default emissions factor: Non-CO2 Emissions fromStationary Combustion. The value has been verified form the registered VPA-DDs/2/ This value is used for the determination of baseline emissions. **The verified value is: 9.46 tCO2/TJ (Fuelwood)**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/3/ and Emission Reduction Spreadsheet /4/ was found to be inconsistent with the registered VPA-DDs/2/. The applied value is correct and justified.

SDG13: CO_2 emission factor arising from use of wood fuel in project scenario, tCO2/TJ

Means of verification	$EF_{p,CO2}$ - The value is fixed and is derived from 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2: Stationary Combustion. The value has been verified form the registered VPA-DDs/2/ This value is used for the determination of project emissions. **The verified value is: 112 tCO2/TJ (Fuelwood)**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/3/ and Emission Reduction Spreadsheet /4/ are consistent with the registered VPA-DDs/2/. The applied value is correct and justified.

SDG13: Non- CO_2 emission factor arising from use wood fuel in project scenario, tCO2/TJ

Means of verification	$EF_{p,nonCO2}$ - The value is fixed and is derived from IPCC Default emissions factor: Non-CO2 Emissions from Stationary Combustion. The value has been verified form the registered VPA-DDs/2/ This value is used for the determination of baseline emissions. **The verified value is: 9.46 tCO2/t_{fuel} (Fuelwood)**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/3/ and Emission Reduction Spreadsheet/4/ are consistent with the registered VPA-DDs/2/. The applied value is correct and justified.

SDG13: Net calorific value of the wood fuel used in the baseline, TJ/ton

Means of verification	NCV_b – Net calorific value of the fuels used in the baseline b This value is used for the determination of baseline emissions and is derived from IPCC default Table 1.2: https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf and it is found to be consistent with the registered VPA-DDs/2/. **The verified value is: 0.0156 TJ/ton (Wood fuel)**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report /3/ and Emission Reduction Spreadsheet /4/ are consistent with the registered VPA-DD/2/. The applied value is correct and justified.

SDG13: Net calorific value of the wood fuel used in the project, TJ/ton

Means of verification	NCV_p – GS TPDDTEC v3.1/5/ This value is used for the determination of project emissions and is derived from IPCC default Table 1.2: https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf and it is found to be consistent with the registered VPA-DDs/2/. **The verified value is: 0.0156 TJ/ton (Fuelwood)**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report /3/ and Emission Reduction Spreadsheet/4/ are consistent with the registered VPA-DDs/2/. The applied value is correct and justified.

SDG13: Quantity of wood fuel used to treat 1litre of water in the baseline scenario b during year y in T/litre

Means of verification	$W_{b,y}$ – Based on the baseline water boiling test. This value is used for the determination of emission reductions. **The baseline WBT value is: 0.0008892 (capped at 0.0004) (Fuelwood). Hence the value is 0.0004**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/3/ and Emission Reduction Spreadsheet/4/ are consistent with the registered VPA-DDs/2/. The applied value is correct and justified.

SDG13: Quantity of wood fuel used to treat 1litre of water in the project scenario p during year y in T/litre

Means of verification	$W_{p,y}$ – Based on the baseline water boiling test This value is used for the determination of emission reductions. **The baseline WBT value is: 0.0008892 (capped at 0.0004) (Fuelwood). Hence the value is 0.0004**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/3/ and Emission Reduction Spreadsheet/4/ are consistent with the registered VPA-DDs/2/. The applied value is correct and justified.

SDG13: Portion of users of project safe water supply who were already in baseline using a non- boiling safe water supply in percentage

Means of verification	C_j – Based on the baseline study This value is used for the determination of emission reductions and the portion of safe water users is determined though the baseline project survey and refers to the number of users that already use safe water from water sources such as boreholes. The value has already have been validated in the validation stage by referring to the baseline survey results. The value is consistent with the VPA-DDs/02/. **The verified value is: 0%**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/03/ and Emission Reduction Spreadsheet/04/ are consistent with the registered VPA-DDs/02/. The applied value is correct and justified.

SDG13: 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.

Means of verification	X_{boil} Non-Suppressed Demand – Based on the baseline study as well as credible literature, studies, survey reports relevant to the project target area. The value has already have been validated in the validation stage by referring to the baseline survey results. This value is used for the determination of emission reductions. **The verified value is: 0%**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/3/ and Emission Reduction Spreadsheet/4/ are consistent with the registered VPA-DDs/2/. The applied value is correct and justified.

SDG05: Time spent collecting firewood per household per day prior to project

Means of verification	$T_{b,y}$ – Based on the Baseline survey. This value is used for the calculation of SDG 5 and already have been validated in the validation stage by referring to the baseline survey results. The value is consistent with the VPA-DDs/2/. **The verified value is: 0 minutes**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/3/ and Emission Reduction Spreadsheet/4/ are consistent with the registered VPA-DDs/2/. The applied value is correct and justified.

SDG 3.9.1: Quantity of fuel that is consumed in the baseline scenario b during year y in kg/household- day

Means of verification	$P_{b,y}$ – kg per household per day. Based on the Baseline water boiling Test. This value is used for the calculation of SDG 3 **The verified value is: 0.003 calculated using default and capped values bWBT 6.669 Kg/HH/day**
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report /3/ and Emission Reduction Spreadsheet /4/ are consistent with the registered VPA-DD/2/. The applied value is correct and justified.

SDG13: Non-renewability status of woody biomass fuel in scenario i during year y, $fNRB_{i,y}$

Means of verification	$fNRB_{i,y}$ This parameter is referred to fractional non-renewability status of woody biomass fuel during year y in case the baseline fuel is biomass or charcoal. The value applied is 97% which is confirmed from the CDM default stated in the documents: https://cdm.unfccc.int/Panels/ssc_wg/meetings/035/ssc_035_an20.pdf **The verified value is 97%** The value of the parameter has been determined through the formula: fNRB = NRB/(NRB+RB) where: fNRB = Fraction of non-renewable biomass in the country (%) NRB = Quantity of non-renewable biomass in the country (t/yr) RB = Quantity of renewable biomass in the country/region or project area, determined as per section 4.2 below (t/yr) Since NRB is determined on a national basis by the CME, the following method was applied in line with paragraph 9 of TOOL30: NRB= H – RB Where: H : Total annual consumption of wood in the absence of the project activity in the country/region/project area (t/yr) H = HW × N + CE + NE Where: HW = Consumption of fuelwood (t/yr) N = Number of households consuming wood fuel within the applicable area in the relevant period (number) CE = Commercial woody biomass consumption for energy applications (e.g. commercial, industrial or institutional uses of woody biomass in ovens, boilers etc.) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes) NE = Commercial woody biomass consumption for non-energy applications (e.g. construction, furniture) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)

	The Quantity of renewable biomass in the region or project area (RB) is calculated as 1,554,896 tonnes/40/ and it calculated in line with equation 4 of the applied tool 30/36/, which is given as: $RB = \sum(MAI_{forest,\,i,} \times (F_{forest,i} - P_{forest,i})) + \sum(MAI_{other,\,i,} \times (F_{other,i} - P_{other,i})$ Where: $MAI_{forest,i}$ = MAI of forest areas (t/ha/yr) $MAI_{other,\,i}$ = MAI of other lands areas (t) TOF $F_{forest,i}$ = Extent of forest (ha) $F_{other,i}$ = Exent of other lands (ha) (Trees outside the forest TOF) $P_{other,i}$ = Extent of non-accessible area (ha)
Findings	No findings were raised.
Conclusion	The value mentioned in the Monitoring Report/3/ and Emission Reduction Spreadsheet/4/ are consistent with the registered VPA-DDs/2/. The applied value is correct and justified.

E.5.4.2. Data and parameters monitored

SDG13: Number of persons consuming water supplied by project scenario p through year y, $N_{p,y}$ in Project Technology Days

Relevant SDG Indicator	**SDG13: Climate Action**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	Annual
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/
	Monitoring equipment	Not Applicable
	Calibration frequency /interval:	Not Applicable
	How were the values in the monitoring report verified?	The value applied for this parameter is given below for each VPA. GS5038: 783,163 (downtime: 0%, 0 days) (Uncapped: 1,129,469) GS5039: 779,310 (downtime: 0%, 0 days) (Uncapped: 1,122,726) GS5040: 789,637 (downtime: 0%, 0 days) (Uncapped: 1,156,652) GS5041: 765,342 (downtime: 0%, 0 days) (Uncapped: 1,184,859)

		GS5042: 707,712 (downtime: 0.16%, 3 days) (Uncapped: 1,120,179) GS5043: 796,773 (downtime: 0%, 0 days) (Uncapped: 1,054,964) GS5825: 1,244,508 (downtime: 0%, 0 days) (Uncapped: 2,724,554) GS5826: 1,210,536 (downtime: 0%, 0 days) (Uncapped: 1,321,220) GS5827: 1,084,839 (downtime: 0%, 0 days) (Uncapped: 1,526,939) GS7330: 886,032 (downtime: 0%, 0 days) (Uncapped: 1,527,928) GS7331: 872,476 (downtime: 0%, 0 days) (Uncapped: 1,546,741) GS7332: 1,208,271 (downtime: 0.67%, 4 days) (Uncapped: 1,886,672) GS7333: 1,201,476 (downtime: 0%, 0 days) (Uncapped: 1,764,010) GS7334: 1,045,998 (downtime: 0%, 0 days) (Uncapped: 1,605,596) GS7335: 837,581 (downtime: 0%, 0 days) (Uncapped: 1,456,768) GS7336: 879,233 (downtime: 0%, 0 days) (Uncapped: 1,735,991) The data is verified by checking the records of the Borehole Project Database /09/ and the number of people for each borehole is capped to 400.
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	CL#05 was raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology /5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

SDG13: Usage rate in project scenario p during year y determined on an annual usage survey, $U_{p,y}$, Fraction(or %)

Relevant SDG Indicator	**SDG13: Climate Action** **SDG06: Clean Water and Sanitation** **SDG03: Good Health and Wellbeing**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	Annual
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/
	Monitoring equipment	Not applicable as this parameter is ascertained through surveys
	Calibration frequency /interval:	Not Applicable
	How were the values in the monitoring report verified?	This value is ascertained through annual surveys about the usage of the boreholes in the project scenario. The value obtained during this monitoring period is 100% which has been capped at 95%%/11/. This value was accepted after checking the user habit survey results/11/ provided by the CME. It is to be noted that CO2balance has a robust system to ensure that the end users are constantly in touch and at the same time engage the field staffs to ascertain the grievances and rectify them to ensure that the intended beneficiary does not drop off from the program owing to assimilation barrier experienced due to new technology adoption. By being in constant communication, the CME ensures that the usage rate is 100 % which has been capped at 95%. This was further cross checked with the desk review of documents and through interviews during the remote audit. /33/
	If applicable, has the reported data been cross-checked with other available data?	Not Applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Not Applicable as the data is based on surveys and interviews with the beneficiaries
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by	Not Applicable

	Appendix 1 to the CDM Project Standard?	
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/02/ (as per measurement methods and procedures to be applied) and applied methodology/05/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/02/.	

SDG13: Quantity of safe water supplied in the project scenario p during the year y using the zero or low emissions clean water supply technology, $Q_{P,y}$ in Litres per person per day

Relevant SDG Indicator	**SDG13: Climate Action** **SDG03: Good Health and Wellbeing**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	The parameter is measured by Water Consumption Field Test conducted biennially (every 2 years).
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/. The last survey was conducted from 19/12/2022 to 22/12/2022.
	Monitoring equipment	The volume of water consumed in each household is averaged over the course of three days using a method akin to the Kitchen Performance Test. According to the technique, the volume was capped at 7.5 litres per person per day. Staff members trained by the project developer to perform the WCFT will adhere to the methodology's strict guidelines.
	Calibration frequency /interval:	Not applicable
	How were the values in the monitoring report verified?	The value obtained for the parameter is 8.52. However, the maximum value that CME can claim is 7.5 hence 7.5 was applied the values in the monitoring report were verified from the WCFT performed by the staff members of the project developer.
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by	Not Applicable

	Appendix 1 to the CDM Project Standard?	
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology/5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.	

SDG13: Quantity of safe water boiled in project scenario p during the year y using the zero or low emissions clean water supply technology, $Q_{p,cleanboil,y}$ in Litres per person per day

Relevant SDG Indicator	**SDG13: Climate Action** **SDG06: Clean Water and Sanitation** **SDG03: Good Health and Wellbeing**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	The parameter is measured by Water Consumption Field Test conducted biennially (every 2 years).
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/
	Monitoring equipment	The volume of water utilized in each household is averaged over the course of three days using a method which is similar to the kitchen performance test. Staff members trained by the project developer perform the WCFT will adhere to the methodology's strict guidelines. The value verified for the parameter is 0.
	Calibration frequency /interval:	Not applicable.
	How were the values in the monitoring report verified?	The values in the monitoring report were verified from the WCFT performed by the staff members of the project developer.
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable

Findings	No findings were raised.
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology/5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.

SDG13: The raw or unsafe water that is still boiled after installation of the water treatment technology, $Q_{p,rawboil,y}$ in Litres per person per day

Relevant SDG Indicator	**SDG13: Climate Action**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	The parameter is measured by Water Consumption Field Test conducted biennially (every 2 years).
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/
	Monitoring equipment	The volume of water consumed in each household is averaged over three days in a method which is similar to the Kitchen Performance Test. The WCFT will be performed by the project developer's professionals who have been trained to meet the methodology's unique requirements.
	Calibration frequency /interval:	Not applicable
	How were the values in the monitoring report verified?	The value in the monitoring report were verified from the WCFT performed by the staff members of the project developer which is 0.
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be	

	applied) and applied methodology/5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.

SDG06: Performance of the treatment technology, Quality of Treated Water in accordance with Parameters as per National Standards

Relevant SDG Indicator	**SDG 06: Clean Water and Sanitation**
Means of verification	

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	This parameter is monitored once per MP
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/
Monitoring equipment	In accordance with the verified baseline project survey, the portion of safe water users is quantified. This metric reflects the number of individuals utilizing safe water from sources, including boreholes. This determination is deemed valid as per the applied methodology. Moreover, VVB has cross checked the WQT reports provided by the CME and hence, VVB concluded the information provided in the section D.1 of the MR is appropriate.
Calibration frequency /interval:	Not Applicable
How were the values in the monitoring report verified?	The values were verified using the WQT report shared by the CME. VVB has checked the approach followed by the CME is in accordance with the applied methodology.
If applicable, has the reported data been cross-checked with other available data?	Not Applicable
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable

The Water Resource Department, operating under the Ministry of Land, Water & Environment, has conducted water quality testing in accordance with WHO Guidelines and Eritrea's Water Quality Standards, ensuring that the certification of the water

	supply remains in compliance with national requirements. These water quality tests have been duly reviewed and verified against the relevant guidelines. Consequently, the VVB has determined that the water quality reports are appropriate and acceptable.
Findings	CL#04 & CL#08 was raised and resolved.
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology /5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.

SDG13: Leakage in project scenario p during year y, $LE_{p,y}$, tCO_2e/year

Relevant SDG Indicator	**SDG13: Climate Action**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	At least once every two years (biennial)
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DD /2/
	Monitoring equipment	It is assessed every two years using desk-based research.
	Calibration frequency /interval:	Not Applicable
	How were the values in the monitoring report verified?	It has been verified from the baseline and monitoring surveys performed that no leakage emissions are there in the project scenario.
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology /5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.	

SDG05: Project time saved by borehole project on average per household per day, $T_{p,y}$ in Hours.

Relevant SDG Indicator	**SDG05: Gender Equality**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/
	Monitoring equipment	It is assessed every year during the project survey.
	Calibration frequency /interval:	Not Applicable
	How were the values in the monitoring report verified?	The value of 0.72 hours/HHs/day was verified using project monitoring survey.
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology /5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.	

SDG05: Total
Total time saved by borehole project on average per household per day for project activity in year y, TR_y in (hours)

Relevant SDG Indicator	**SDG 05: Gender Equality**	
Means of verification	**Criteria/Requirements**	**VVB Assessment**

	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the frequency in line to the The monitoring plan in the VPA-DDs/2/.
	Monitoring equipment	It is calculated during Baseline and project survey.
	Calibration frequency/ interval	Not applicable
	How were the values in the monitoring report verified?	The value of the parameter is 0.72 Hours across all the VPAs. It was verified and assessed using the project survey every year and is done by calculating the amount of time spent for collection of firewood and water in the project scenario and comparing it with the baseline scenario.
	If applicable, has the reported data been cross-checked with other available data?	Not Applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not applicable
Findings	No findings were raised.	
Conclusion	Sustainability criteria was found to be fulfilled. The monitoring and reporting is as per the GS PoA-DD /1/ and registered VPA-DD/2/. The representation of the monitored value was found to be accurate which was easily verifiable. No discrepancy in data monitoring, data management, transfer of data or QA/QC procedures was found.	

SDG03: Total reduction in Household Air Pollution for project activity in year y, $HARP_y$ in percentage (%)

Relevant SDG Indicator	**SDG03: Good health and well being**

<table>
<tr><th>Means of verification</th><th>Criteria/Requirements</th><th>Assessment/Observation</th></tr>
<tr><td></td><td>Measuring /Reading /Recording frequency</td><td>The parameter is measured annually</td></tr>
<tr><td></td><td>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</td><td>Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DD /2/.</td></tr>
<tr><td></td><td>Monitoring equipment</td><td>NA</td></tr>
<tr><td></td><td>Calibration frequency /interval:</td><td>Not Applicable</td></tr>
<tr><td></td><td>How were the values in the monitoring report verified?</td><td>The values of the parameter for the current MP are as follows:
<table>
<tr><th>GS ID</th><th>HARP$_Y$</th></tr>
<tr><td>5038
5039
5040
5041
5042
5043
5825
5826
5827
7330
7331
7332
7333
7334
7335
7336</td><td>All VPAs: 95% decrease in household smoke</td></tr>
</table>
The values of the parameter were verified against the monitoring survey database provided by the PP. Further, during the remote audit the end users were questioned regarding the change observed in the air quality after the usage of the project stove. All the end-users interviewed stated that, thanks to the project boreholes, they no longer need to boil water for drinking. This has led to a significant reduction in smoke since they no longer burn firewood for this purpose, improving their ambient air quality by 95%. Therefore, the value reported in the MR is deemed acceptable by the VVB.</td></tr>
<tr><td></td><td>If applicable, has the reported data been cross-checked with other available data?</td><td>Yes</td></tr>
</table>

	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/02/ (as per measurement methods and procedures to be applied) and applied methodology/05/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/02/.	

SDG06: Number of additional persons having access to safe water in the project activity compared to the baseline scenario (%), P_{access} in Number of People

Relevant SDG Indicator	**SDG06: Clean water and Sanitation**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/
	Monitoring equipment	It is assessed every year during the project survey, usage survey and the household list using the Project database. It is verified by the VVB, and the data is used for the calculation of the SDG 6
	Calibration frequency /interval:	Not Applicable
	How were the values in the monitoring report verified?	The value of 41,226 was verified using a project survey. GS5038: 2,227 GS5039: 2,214 GS5040: 2,272 GS5041: 2,337 GS5042: 2,187 GS5043: 2,076 GS5825: 2,428 GS5826: 2,281 GS5827: 2,637 GS7330: 2,966 GS7331: 2,671 GS7332: 3,258 GS7333: 3,046

		GS7334: 2,773 GS7335: 2,845 GS7336: 3,008
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology /5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.	

SDG05: Usage of time saved on firewood collection in Percentage.

Relevant SDG Indicator	**SDG05: Gender Equality**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DD /2/
	Monitoring equipment	It is assessed every year during the project survey.
	Calibration frequency /interval:	Not Applicable
	How were the values in the monitoring report verified?	The value verified using project survey has been listed below and this has been verified by the verification team. 0.72 hours of time saved by borehole project on average per household per day
	If applicable, has the reported data been cross-checked with other available data?	Not applicable

	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology /5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.	

SDG03 & SDG06: Number of Persons having access safe water in the project activity, P,y in terms of Number of people, P_y in number

Relevant SDG Indicator	**SDG 03: Good Health and Wellbeing** **SDG 06: Clean Water and Sanitation**	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	This parameter is measured on annual basis
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The frequency is in line with the registered PoA-DD/1/ and VPA-DDs/2/.
	Monitoring equipment	It is calculated using project survey, usage survey and household list.
	Calibration frequency /interval:	Not Applicable
	How were the values in the monitoring report verified?	SDG 03: All VPAs: 95% decrease in household smoke SDG 06: 41, 234 additional people gain access to safe water VPA breakdown: GS5038: 2,228 GS5039: 2,214 GS5040: 2,272 GS5041: 2,337 GS5042: 2,188 GS5043: 2,077 GS5825: 2,428 GS5826: 2,282

		GS5827: 2,637 GS7330: 2,967 GS7331: 2,671 GS7332: 3,259 GS7333: 3,047 GS7334: 2,773 GS7335: 2,845 GS7336: 3,009 The value is verified from the monitoring survey sheet provided by the PP.
	If applicable, has the reported data been cross-checked with other available data?	Not Applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The QA/QC processes were deemed to be appropriate and trustworthy.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan/2/ (as per measurement methods and procedures to be applied) and applied methodology /5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/2/.	

E.5.5. Implementation of sampling plan

Means of verification	The sampling plan was implemented by the CME in accordance with the Gold Standard methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption, Version 3.1/5/, and the CDM EB 110, Annex 1, Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities/23/. Four different sample sets were picked from population serviced under the VPA1 viz., Baseline Survey, Water Consumption Field Test, Usage Survey and Project Survey. **<u>Parameters to be covered through monitoring surveys:</u>** The CME has conducted following kinds of surveys: Water Consumption Field Test: • $Q_{p,y}$ – Quantity of safe water supplied in the project scenario p during year y , using the "zero or low" emissions' clean water supply technology.

- $Q_{p,rawboil,y}$ – Quantity of safe water boiled in the project scenario p during year y, after installation of the project technology.

Usage Survey:

- $U_{,p,y}$ – Usage rate in project scenario p during year y

Project Survey:

- $P_{p,y}$ – Quantity of fuel that is consumed in the project scenario p during year y (kg/household-day)
- $T_{p,y}$ – Project time spent collecting firewood per household per day

Baseline Survey:

- $W_{b,y}$ – Quantity of wood fuel or fossil fuel required to boil 1L of water using technologies representative of baseline scenario b during year y
- $T_{b,y}$ – Baseline time spent collecting firewood per household per day
- C_j – Expressed as a percentage, the portion of users of project technology j who in the baseline were already consuming safe water without boiling it.

Sample size calculation for different tests

Usage Survey

All monitored parameters were evaluated using simple random sampling with the requisite precision/confidence. Usage survey questionnaires were done to determine usage and changes in circumstances experienced following the rehabilitation of boreholes. The sample size was determined using the TPDDTEC Version 3.1 guideline/5/, which indicates that for a group size more than 1000, a minimum sample size of 100 is required for such a survey. To avoid bias, the usage surveys were conducted on 120 randomly chosen homes dispersed across the project implementation zones. The results indicated that 100 percent of respondents and their families use the Vita-rehabilitated boreholes.

Project Survey

To investigate changes in the project scenario demographics, water use and purification practices, and so on over time, project surveys were conducted on 120 randomly selected households from across the VPA.
The following information was gathered during the project surveys:

- General information - Name, address, phone number, and so on.
- Household socio-demographic data.
- Water consumption and purification characteristics
- Fuel sources and availability

Water Consumption Field Tests (WCFTs)

The WCFT sample size determination was based on the guidelines provided in the TPDDTEC Version 3.1 methodology/5/ for distinguishes between water use for project-related activities(i.e. drinking, food preparation, and basic personal hygiene) and non-project activitiesas well as borehole water which is boiled before use. A WCFT with a precision of 90/30 was utilized, yielding a sample size of 40.

Quality of Treated Water

Quarterly testing was carried out in accordance with the 90/10 confidence/precision sample size requirements outlined in the design certified VPA-DD. An accredited laboratory performed at least one test on each borehole each year.

Findings	No findings were raised.
Conclusion	The verification team confirmed that the sampling plan and the parameter values are in accordance with the monitoring plan provided in PoA DD/1/ and the VPA DDs/2/.

E.5.6. Assessment of data and calculation of emission reductions or net removals

E.5.6.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

Means of verification

1- SDG-03: Good Health and Well Being

The quantity of biomass used in the baseline is calculated as follows:

$P_{safe} = P_y * (1-C_j) * (1-P_{b,boil})$

Where:

P_{safe}	Number of additional persons having access to safe water in the project activity compared to the baseline scenario.
P_y	Number of persons having access to safe water in the project activity
C_j	Expressed as a percentage, the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it.
$P_{b,boil}$	Percentage of persons boiling water for purification in the baseline scenario.

2- SDG-05: Gender Equality

$T_{b,y} = 0$

Where:

$T_{b,y}$	The average Time saved collecting water per household per day in the presence of borehole project(hours)

3- SDG-06: Clean Water and Sanitation

$P_{access} = P_y * (1-C_j) * U_{p,y}$

Where:

P_{access}	Number of additional persons having basic access to safe water in the project activity compared to the baseline scenario.
P_y	Number of persons having access to safe water in the project activity.
C_j	Expressed as a percentage, the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it.
$U_{p,y}$	Usage rate in project scenario p during year y

4- SDG-13: Climate Action

The equations used were found consistent with the revised accepted PoA DD/1/, accepted VPA DDs/2/ and the applied methodology TPDDTEC, version 1.0/5/

According to the methodology TPDDTEC, version 1.0/5/, baseline emissions shall be calculated as:

	$BE_{b,y} = B_{p,y} * ((fNRB_y * EF_{b,fuel,co2}) + EF_{b,fuel,nonco2}) * NCV_{b,fuel}$ Where: $B_{b,y} = (1 - C_j) * N_{j,y} * W_{b,y} * (Q_{b,y} + Q_{b,rawboil,y})$ Where: $N_{j,y}$ Number of persons, days consuming water supplied by project scenario p through year y C_j Expressed as a percentage, the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it $B_{b,y}$ Quantity of fuel consumed in baseline scenario b during the year y in tons $Q_{p,y}$ Quantity of safe water in litres consumed in the project scenario pand supplied by project technology per person per day $Q_{p,rawboil,y}$ Quantity of raw water boiled in the project scenario p per person perday $W_{b,y}$ Quantity of fuel in tons required to treat 1 litre of water using technologies representative of baseline scenario b during the projectyear y, as per Baseline Water Boiling Test
Findings	No findings were raised.
Conclusion	The verification team verified that a) A complete set of data for the monitoring period was available and the verification of each monitoring parameter is elaborated under Section E.5.4.2 of this report. The complete monitoring data is also presented in the corresponding ER calculations sheet /4/ of final Monitoring Report /3/. b) The information provided in the monitoring report/3/ was cross checked with other sources, wherever appropriate and available, and such information is also included under Section E.5.4.2 of this report. c) The calculations of baseline emissions as presented in the corresponding ER calculations sheet /4/ of final Monitoring Report /3/ were checked and found to be consistent with the formulae and methods described in the registered monitoring plan of VPA-DDs/2/, registered PoA-DD /1/ and the applied methodology/5/. d) All assumptions used in the emission calculations were found appropriate and therefore justified e) Appropriate emission factors, IPCC default factors and other reference values have been correctly applied. This has also been elaborated under Section E.5.4.1 of this report. No standardized baseline was prescribed in the registered PoA-DD/1/.

E.5.6.2. Calculation of project value or estimation of project situation of each SDG Impact

Means of verification	**1. <u>SDG-03: Good health and Well- being</u>** $HAPR_y = ((P_{b,y} - P_{p,y}) / P_{b,y}) * U_{p,y}$ Where, $HARP_y = ((3-0)/3) * 95\%$ $HARP_y$ = 0.95 or 95% decrease in household smoke

2. SDG-05: Gender Equality

The overall time spent collecting firewood in the project activity is given by the parameter TRy.

TRy = 0.72 hours of time saved by borehole project on average per household per day

3. SDG-06: Clean Water and Sanitation

The number of persons having access to safe water in the project activity is given bythe parameter P_{access}.

P_{access} = 41,226

4. SDG-13: Climate Action

Total Emission Reduction for the Monitoring Period		
Start Dates (Inclusive of both days)	**End Dates**	**VERs (tCO2/y)**
01/06/2022	31/12/2022	GS5038: 1,733 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS5039: 1,725 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS5040: 1,741 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS5041: 1,695 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS5042: 1,552 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS5043: 1,760 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS5825: 2,344 tCO_2e VERs (MP5)
01/06/2022	31/12/2022	GS5826: 2,280 tCO_2e VERs (MP5)
01/06/2022	31/12/2022	GS5827: 2,043 tCO_2e VERs (MP5)
01/06/2022	31/12/2022	GS7330: 1,931 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS7331: 1,683 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS7332: 2,276 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS7333: 2,264 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS7334: 1,924 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS7335: 1,837 tCO_2e VERs (MP6)
01/06/2022	31/12/2022	GS7336: 1,710 tCO_2e VERs (MP6)
01/01/2023	20/10/2023	GS5038: 2,375 tCO_2e VERs (MP6)
01/01/2023	20/10/2023	GS5039: 2,364 tCO_2e VERs (MP6)
01/01/2023	22/10/2023	GS5040: 2,400 tCO_2e VERs (MP6)
01/01/2023	22/10/2023	GS5041: 2,319 tCO_2e VERs (MP6)
01/01/2023	25/10/2023	GS5042: 2,161 tCO_2e VERs (MP6)
01/01/2023	21/10/2023	GS5043: 2,419 tCO_2e VERs (MP6)
01/01/2023	31/12/2023	GS5825: 4,000 tCO_2e VERs (MP5)
01/01/2023	31/12/2023	GS5826: 3,892 tCO_2e VERs (MP5)
01/01/2023	31/12/2023	GS5827: 3,487 tCO_2e VERs (MP5)
01/01/2023	28/10/2023	GS7330: 2,717 tCO_2e VERs (MP6)
01/01/2023	31/12/2023	GS7331: 2,871 tCO_2e VERs (MP6)
01/01/2023	31/12/2023	GS7332: 3,883 tCO_2e VERs (MP6)
01/01/2023	31/12/2023	GS7333: 3,862 tCO_2e VERs (MP6)
01/01/2023	31/12/2023	GS7334: 3,285 tCO_2e VERs (MP6)

	01/01/2023	25/10/2023	GS7335: 2,558 tCO_2e VERs (MP6)
	01/01/2023	29/12/2023	GS7336: 2,903 tCO_2e VERs (MP6)
	01/01/2024	17/01/2024	GS5825: 185 tCO_2e VERs (MP5)
	01/01/2024	17/01/2024	GS5826: 179 tCO_2e VERs (MP5)
	01/01/2024	17/01/2024	GS5827: 160 tCO_2e VERs (MP5)
	01/01/2024	03/01/2024	GS7331: 21 tCO_2e VERs (MP6)
	01/01/2024	17/01/2024	GS7332: 179 tCO_2e VERs (MP6)
	01/01/2024	17/01/2024	GS7333: 177 tCO_2e VERs (MP6)
	01/01/2024	17/01/2024	GS7334: 277 tCO_2e VERs (MP6)
	Total Emission Reductions		**79,172 tCO_2e VERs**
Findings	No comments were raised		
Conclusion	The verification team verified that a) A complete set of data for the monitoring period was available and the verification of each monitoring parameter is elaborated under Section E.5.4.2 of this report. The complete monitoring data is also presented in the corresponding ER calculations sheet /4/ of final Monitoring Report /3/. b) The information provided in the monitoring report was cross checked with other sources, wherever appropriate and available, and such information is also included under Section E.5.4.2 of this report.		

E.5.6.3. Calculation of leakage

Means of verification	The 5 conditions under which the leakage should be accounted for is not observed in this project activity. 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 b. The non-renewable biomass or fossil fuels saved under the project activity are used by non-project users who previously used lower emitting energy sources. 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. 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 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. Verification team found that all the conditions mentioned has been followed by the project activity and hence leakage is discounted and considered as 0.
Findings	None
Conclusion	A complete set of data for the monitoring period was available and the verification of each monitoring parameter is elaborated under Section E.5.4.2 of this report. The complete monitoring data is also presented in the corresponding ER calculations sheet /4/ of final Monitoring Report /3/. The information provided in the monitoring report was cross checked with other sources, wherever appropriate and available, and such information is also included under Section E.5.4.2 of this report.

E.5.6.4. Calculation of net benefits or direct calculation for each SDG Impact

Means of verification	SDGs Targeted	SDG Impact	Baseline estimate	Project estimate	Net benefit
	3	Good Health and well being	0% decrease in household smoke	All VPAs: 95% decrease in household smoke	All VPAs: 95% decrease in household smoke
	5	Gender Equality	0 Hours of time saved by borehole project on average per household per day	Across all VPAs: 0.72 hours of time saved by borehole project on average per household per day	Across all VPAs: 0.72 hours of time saved by borehole project on average per household per day
	6	Clean Water and Sanitation	VPA breakdown: GS5038: 0 GS5039: 0 GS5040: 0 GS5041: 0 GS5042: 0 GS5043: 0 GS5825: 0 GS5826: 0 GS5827: 0 GS7330: 0 GS7331: 0 GS7332: 0 GS7333: 0 GS7334: 0 GS7335: 0 GS7336: 0	43,404 additional people gain access to safe water VPA breakdown: GS5038: 2,345 GS5039: 2,331 GS5040: 2,392 GS5041: 2,460 GS5042: 2,303 GS5043: 2,186 GS5825: 2,556 GS5826: 2,402 GS5827: 2,776 GS7330: 3,123 GS7331: 2,812 GS7332: 3,430 GS7333: 3,207 GS7334: 2,919 GS7335: 2,995 GS7336: 3,167	41,226additional people gain access to safe water VPA breakdown: GS5038: 2,227 GS5039: 2,214 GS5040: 2,272 GS5041: 2,337 GS5042: 2,187 GS5043: 2,076 GS5825: 2,428 GS5826: 2,281 GS5827: 2,637 GS7330: 2,966 GS7331: 2,671 GS7332: 3,258 GS7333: 3,046 GS7334: 2,773 GS7335: 2,845 GS7336: 3,008
	13	Climate Action	Per VPA: GS5038: 0 tCO2e/y GS5039: 0 tCO2e/y GS5040: 0 tCO2e/y GS5041: 0 tCO2e/y GS5042: 0 tCO2e/y GS5043: 0 tCO2e/y GS5825: 0 tCO2e/y GS5826: 0 tCO2e/y GS5827: 0 tCO2e/y GS7330: 0 tCO2e/y GS7331: 0 tCO2e/y GS7332: 0 tCO2e/y GS7333: 0 tCO2e/y GS7334: 0 tCO2e/y	Total Emission Reductions: 79,172 tCO2e/y Per VPA: GS5038: 4,108 tCO2e/y GS5039: 4,089 tCO2e/y GS5040: 4,141 tCO2e/y GS5041: 4,014 tCO2e/y GS5042: 3,713 tCO2e/y GS5043: 4,179 tCO2e/y GS5825: 6,529 tCO2e/y GS5826: 6,351 tCO2e/y GS5827: 5,690 tCO2e/y GS7330: 4,648 tCO2e/y GS7331: 4,575 tCO2e/y GS7332: 6,338 tCO2e/y GS7333: 6,303	Total Emission Reduction: 79,172 tCO2e/y Per VPA: GS5038: 4,108 tCO2e/y GS5039: 4,089 tCO2e/y GS5040: 4,141 tCO2e/y GS5041: 4,014 tCO2e/y GS5042: 3,713 tCO2e/y GS5043: 4,179 tCO2e/y GS5825: 6,529 tCO2e/y GS5826: 6,351 tCO2e/y GS5827: 5,690 tCO2e/y GS7330: 4,648 tCO2e/y GS7331: 4,575 tCO2e/y GS7332: 6,338 tCO2e/y GS7333: 6,303

			GS7335: 0 tCO2e/y GS7336: 0 tCO2e/y	tCO2e/y GS7334: 5,486 tCO2e/y GS7335: 4,395 tCO2e/y GS7336: 4,613 tCO2e/y	tCO2e/y GS7334: 5,486 tCO2e/y GS7335: 4,395 tCO2e/y GS7336: 4,613 tCO2e/y

The calculation methods applied for all the SDG impacts were checked with registered PoA-DD/1/ and VPA-DD/2/.
The verification team confirms that the stated figures were checked and found acceptable.

Findings	No finding was raised
Conclusion	The verification team confirms that a) The complete data was available and is duly reported b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.4 of this report); c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed; d) Appropriate emission factors, IPCC default factors and other reference values were correctly applied. e) The total number of VERs achieved during the current monitoring period is 79,172 tCO_2e.

E.6. Comparison of actual SDG Impacts with estimates in approved PDD

Means of verification

From Section E.5 of the Monitoring Report, it is apparent that estimated values were off while the project monitored its progress.

SDGs Targeted	SDG Impact	Values estimated in ex ante calculation of approved PoA-DD for this monitoring period	Actual values achieved during this monitoring period
SDG:3 Good Health and Well Being	SDG 3: Good Health and Wellbeing: 3.9.1 Mortality rate attributed to household and ambient air pollution	80% reduction in exposure to Household Air Pollution due to boiling water	95% reduction in exposure to Household Air Pollution due to boiling water
SDG:5 Gender Equality	SDG 5: Gender Equality: 5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location.	at least 0.5 hours of time saved by borehole project on average per household per day	0.72 hours of time saved by borehole project on average per household per day

	SDG:6 Clean Water and Sanitation	By 2030, achieve universal and equitable access to safe and affordable drinking water for all.	Number of additional persons with access to safe water: GS5038: 2751 GS5039: 2638 GS5040: 2699 GS5041: 2856 GS5042: 2765 GS5043: 2810 GS5825: 2979 GS5826: 2874 GS5827: 3204 GS7330: 3830 GS7331: 3408 GS7332: 3648 GS7333: 3718 GS7334: 3367 GS7335: 3603 GS7336: 3729	41,226 additional people gain access to safe water VPA breakdown: GS5038: 2,227 GS5039: 2,214 GS5040: 2,272 GS5041: 2,337 GS5042: 2,187 GS5043: 2,076 GS5825: 2,428 GS5826: 2,281 GS5827: 2,637 GS7330: 2,966 GS7331: 2,671 GS7332: 3,258 GS7333: 3,046 GS7334: 2,773 GS7335: 2,845 GS7336: 3,008
	SDG:13 Climate Action	SDG13: Climate Action (Mandatory): 13.3.2 Number of countries that have communicated the strengthening, systematic and individual capacity-building to implement adaptation, mitigation and technology transfer and development actions.	Emissions reduced by 10,000 tCO_2e (across all VPAs)	Total Emission Reductions: 79,172 tCO2e/y Per VPA: GS5038: 4,108 tCO2e/y GS5039: 4,089 tCO2e/y GS5040: 4,141 tCO2e/y GS5041: 4,014 tCO2e/y GS5042: 3,713 tCO2e/y GS5043: 4,179 tCO2e/y GS5825: 6,529 tCO2e/y GS5826: 6,351 tCO2e/y GS5827: 5,690 tCO2e/y GS7330: 4,648 tCO2e/y GS7331: 4,575 tCO2e/y GS7332: 6,338 tCO2e/y GS7333: 6,303 tCO2e/y GS7334: 5,486 tCO2e/y GS7335: 4,395 tCO2e/y

			GS7336: 4,613 tCO2e/y

As the result of the all the VPA-DDs, 16,000 tCO_2e were expected to be reduced per VPA within the time frame of the current monitoring period. However, based on monitoring data, actual emission reductions so far are only 79,172 tCO2e/y during this monitoring period.

Product Vintages:

Total Emission Reduction for the Monitoring Period			
Start date	**End date**	**Project GS ID**	**VERs (tCO_2/y)**
(Inclusive of both days)			
01/06/2022	**31/12/2022**	5038	1,733 (MP6)
01/06/2022	**31/12/2022**	5039	1,725 (MP6)
01/06/2022	**31/12/2022**	5040	1,741 (MP6)
01/06/2022	**31/12/2022**	5041	1,695 (MP6)
01/06/2022	**31/12/2022**	5042	1,552 (MP6)
01/06/2022	**31/12/2022**	5043	1,760 (MP6)
01/06/2022	**31/12/2022**	5825	2,344 (MP5)
01/06/2022	**31/12/2022**	5826	2,280 (MP5)
01/06/2022	**31/12/2022**	5827	2,043 (MP5)
01/06/2022	**31/12/2022**	7330	1,931 (MP6)
01/06/2022	**31/12/2022**	7331	1,683 (MP6)
01/06/2022	**31/12/2022**	7332	2,276 (MP6)
01/06/2022	**31/12/2022**	7333	2,264 (MP6)
01/06/2022	**31/12/2022**	7334	1,924 (MP6)
01/06/2022	**31/12/2022**	7335	1,837 (MP6)
01/06/2022	**31/12/2022**	7336	1,710 (MP6)
01/01/2023	**20/10/2023**	5038	2,375 (MP6)
01/01/2023	**20/10/2023**	5039	2,364 (MP6)
01/01/2023	**22/10/2023**	5040	2,400 (MP6)
01/01/2023	**22/10/2023**	5041	2,319 (MP6)
01/01/2023	**25/10/2023**	5042	2,161 (MP6)
01/01/2023	**21/10/2023**	5043	2,419 (MP6)
01/01/2023	**31/12/2023**	5825	4,000 (MP5)
01/01/2023	**31/12/2023**	5826	3,892 (MP5)
01/01/2023	**31/12/2023**	5827	3,487 (MP5)
01/01/2023	**28/10/2023**	7330	2,717 (MP6)
01/01/2023	**31/12/2023**	7331	2,871 (MP6)
01/01/2023	**31/12/2023**	7332	3,883 (MP6)
01/01/2023	**31/12/2023**	7333	3,862 (MP6)

		01/01/2023	**31/12/2023**	7334	3,285 (MP6)	
		01/01/2023	**25/10/2023**	7335	2,558 (MP6)	
		01/01/2023	**29/12/2023**	7336	2,903 (MP6)	
		01/01/2024	**17/01/2024**	5825	185 (MP5)	
		01/01/2024	**17/01/2024**	5826	179 (MP5)	
		01/01/2024	**17/01/2024**	5827	160 (MP5)	
		01/01/2024	**03/01/2024**	7331	21 (MP5)	
		01/01/2024	**17/01/2024**	7332	179 (MP5)	
		01/01/2024	**17/01/2024**	7333	177 (MP5)	
		01/01/2024	**17/01/2024**	7334	277 (MP5)	
	The actual SDG targets against the anticipated values in PoA-DD is higher for SDG 3 and SDG 5 and lower for SDG 6 and SDG 13 as tabulated above.					
Findings	No findings were raised.					
Conclusion	The actual emission reductions achieved in the current monitoring period for the VPA is lower than the emission reductions expected, but the other SDG targets achieved are higher than the estimation as stated in the VPA-DDs/2/. Therefore, it has been accepted by the verification team.					

E.6.1. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

Means of verification	The Monitoring Report/3/ and corresponding ER calculations sheet /4/, show that the actual emission reductions achieved during this monitoring period are lower than the estimate provided in VPA-DDs/2/. The actual targets achieved for SDG 3 and SDG 5 are higher than those estimated in VPA-DDs/2/. The SDG 03 has increased because the estimated values were conservative. The SDG 05 also increased for the same reason which is found to be acceptable by the VVB.
Findings	None
Conclusion	The PD states that due to implementation of the project, the beneficiaries stopped boiling borehole water as it became safe for human consumption which led to more people having access to safe water that was estimated in VPA-DDs/2/. The above justifications given by the PD have been accepted by the verification team.

E.7. Stakeholder Inputs and Legal Disputes

E.7.1. Assessment of all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.

Means of verification	As verified and evident from the Stakeholder Consultation Report /21/, Stakeholder Consultation was conducted on 01/05/2016. In country stakeholders were invited by the field staff to leave feedback on the documents which were distributed at a community level which is in line with paragraph 3.1.1 in the "Stakeholder Consultation and Engagement Requirements" guidelines. During the remote audit by the VVB, the grievance logbook was checked, and it was confirmed that no complaints were registered for the current monitoring period. Additionally, VVB also interviewed the local villagers about their grievance. The complaints registered were resolved by the PD.

	The stakeholder interviews provide VVB with sufficient confidence that the grievances are taken into consideration and were found as duly resolved for the current monitoring period.
Findings	CAR#02 was raised and resolved.
Conclusion	There were no stakeholder feedback or comments received during this monitoring period. The evidence was accepted by the verification team.

E.7.2. Report on any stakeholder mitigations that were agreed to be monitored

Means of verification	There were no stakeholder mitigations that were agreed to be monitored during the current monitoring period.
Findings	No findings were raised.
Conclusion	The assessment team concluded that no stakeholder mitigations were agreed by the PD to be monitored during the current monitoring period.

E.7.3. Details of any legal contest that has arisen with the project during the monitoring period

Means of verification	There were no legal disputes during the current monitoring period.
Findings	No findings were raised.
Conclusion	The assessment team concluded that there were legal disputes during the current monitoring period.

SECTION F. Internal quality control

The draft verification report that is prepared by the verification team is reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by Earthood were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable GS4GG requirements. The technical review team is collectively required to possess technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of the technical review team are independent of the verification team.
During the technical review process, additional findings may be identified, or the closed-out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to Gold Standard. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that need to be resolved by the verification team. The decision taken by the Technical Reviewer is final and is authorized on behalf of Earthood Services Private Limited.

SECTION G. Verification opinion

Earthood Services Private Limited (Earthood), contracted by, has performed the independent verification of the emission reductions for the VPAs of the GS PoA 1247 "Improved Kitchen Regimes Multi-Country PoA" in the host country "Eritrea" for the below-mentioned monitoring period for 16 VPAs, as reported in the Monitoring Report, Version 4 dated 31/07/202/03/. The CME 'CO2balance' is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity. Earthood commenced the verification against the baseline and monitoring methodology "TPDDTEC – "Technologies and Practices to Displace Decentralized Thermal Energy Consumptions, Version 1.0"/5/, the monitoring plan contained in the VPA-DDs/2/, and Monitoring Report Version 4 dated 31/07/2024/03/.

VVB's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. Earthood planned and performed the verification by obtaining evidence and other information and explanations that Earthood considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

The verification team confirms that:

- The PoA VPA 1 was found completely implemented as per the description given in the registered VPA -DDs/2/.

- The actual operation conforms to the description in the registered PoA – DD/1/ and VPA-DDs/2/

SECTION H. Certification statement

ESPL's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that the reported GHG emission reductions are fairly stated. In our opinion, the GHG emissions reductions reported for the project activity are fairly stated in the Monitoring Report (final) Version 4 dated 31/07/2024/3/. ESPL, based on outcome of verification activities, certifies in writing that, during the below mentioned monitoring period:

VPA 65 (GS5038) – 01/06/2022 - 20/10/2023 (inclusive of both days)
VPA 66 (GS5039) – 01/06/2022 - 20/10/2023 (inclusive of both days)
VPA 67 (GS5040) – 01/06/2022 - 20/10/2023 (inclusive of both days)
VPA 68 (GS5041) – 01/06/2022 - 22/10/2023 (inclusive of both days)
VPA 69 (GS5042) – 01/06/2022 - 25/10/2023 (inclusive of both days)
VPA 70 (GS5043) – 01/06/2022 - 21/10/2023 (inclusive of both days)
VPA 119 (GS5825) – 01/06/2022 - 17/01/2024 (inclusive of both days)
VPA 120 (GS5826) – 01/06/2022 - 17/01/2024 (inclusive of both days)
VPA 121 (GS5827) – 01/06/2022 - 17/01/2024 (inclusive of both days)
VPA 176 (GS7330) – 01/06/2022 - 28/10/2023 (inclusive of both days)
VPA 177 (GS7331) – 01/06/2022 - 03/01/2024 (inclusive of both days)
VPA 178 (GS7332) – 01/06/2022 - 17/01/2024 (inclusive of both days)
VPA 179 (GS7333) – 01/06/2022 - 17/01/2024 (inclusive of both days)
VPA 180 (GS7334) – 01/06/2022 - 17/01/2024 (inclusive of both days)
VPA 181 (GS7335) – 01/06/2022 - 25/10/2023 (inclusive of both days)
VPA 182 (GS7336) – 01/06/2022 - 29/12/2023 (inclusive of both days)

the registered GS PoA (GS 1247) "Improved Kitchen Regimes Multi-Country PoA" and its VPAs (GS5038, GS5039, GS5040, GS5041, GS5042, GS5043, GS5825, GS5826, GS5827, GS7330, GS7331, GS7332, GS7333, GS7334, GS7335, GS7336) achieved the verified amount of 79,172 tCO2e/year reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the VPA.
The verified amount of emission reductions is stated below as per implemented VPAs and as per commitment period.

Product Vintages breaks as per monitoring period:

Total Emission Reduction for the Monitoring Period			
Start date (Inclusive of both days)	End date	Project GS ID	VERs (tCO_2/y)
01/06/2022	31/12/2022	5038	1,733 (MP6)
01/06/2022	31/12/2022	5039	1,725 (MP6)
01/06/2022	31/12/2022	5040	1,741 (MP6)
01/06/2022	31/12/2022	5041	1,695 (MP6)
01/06/2022	31/12/2022	5042	1,552 (MP6)
01/06/2022	31/12/2022	5043	1,760 (MP6)
01/06/2022	31/12/2022	5825	2,344 (MP5)
01/06/2022	31/12/2022	5826	2,280 (MP5)
01/06/2022	31/12/2022	5827	2,043 (MP5)
01/06/2022	31/12/2022	7330	1,931 (MP6)
01/06/2022	31/12/2022	7331	1,683 (MP6)
01/06/2022	31/12/2022	7332	2,276 (MP6)
01/06/2022	31/12/2022	7333	2,264 (MP6)
01/06/2022	31/12/2022	7334	1,924 (MP6)
01/06/2022	31/12/2022	7335	1,837 (MP6)
01/06/2022	31/12/2022	7336	1,710 (MP6)
01/01/2023	20/10/2023	5038	2,375 (MP6)
01/01/2023	20/10/2023	5039	2,364 (MP6)
01/01/2023	22/10/2023	5040	2,400 (MP6)
01/01/2023	22/10/2023	5041	2,319 (MP6)
01/01/2023	25/10/2023	5042	2,161 (MP6)
01/01/2023	21/10/2023	5043	2,419 (MP6)
01/01/2023	31/12/2023	5825	4,000 (MP5)
01/01/2023	31/12/2023	5826	3,892 (MP5)
01/01/2023	31/12/2023	5827	3,487 (MP5)
01/01/2023	28/10/2023	7330	2,717 (MP6)
01/01/2023	31/12/2023	7331	2,871 (MP6)
01/01/2023	31/12/2023	7332	3,883 (MP6)
01/01/2023	31/12/2023	7333	3,862 (MP6)
01/01/2023	31/12/2023	7334	3,285 (MP6)
01/01/2023	25/10/2023	7335	2,558 (MP6)
01/01/2023	29/12/2023	7336	2,903 (MP6)
01/01/2024	17/01/2024	5825	185 (MP5)
01/01/2024	17/01/2024	5826	179 (MP5)
01/01/2024	17/01/2024	5827	160 (MP5)
01/01/2024	03/01/2024	7331	21 (MP5)
01/01/2024	17/01/2024	7332	179 (MP5)

01/01/2024	17/01/2024	7333	177 (MP5)
01/01/2024	17/01/2024	7334	277 (MP5)

Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Level
CAR	Corrective Action Request
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
CER	Certified Emission Reduction
CL	Clarification Request
CME	Coordinating and Managing Entity
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CO_2	Carbon dioxide
COV	Coefficient of Variance
CP	Crediting period
DNA	Designated National Authority
EB	Executive Board
ER	Emission Reductions
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG	Gold Standard for Global Goals
GPS	Geographical Positioning System
HH	Household
ID	Identity
IR	Internal Resource
IPCC	Intergovernmental Panel on Climate Change
Kg	kilogram
WCFT	Water Consumption Field Test
MR	Monitoring Report
NCV	Net Calorific Value
PDD	Project Design Document
PO	Purchase Order
PoA	Programme of Activities
PD	Project Developer
PTD	Project Technology Days
QA/QC	Quality Assurance/ Quality Control
RMP	Registered monitoring plan
TA	Technical Area (with in Sectoral Scope)
TR	Technical Review/er
TJ	Terra Joule
VCR	Verification and Certification report
VER	Verified Emission Reduction
VVS	Validation and Verification Standard
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Level
VPA/VPA-DD	VPA is for 'Verified Project Activity' (whereas DD stands for Design Document)
VVB	Validation and Verification Body
UNFCCC	United Nation Framework convention on Climate change

QA/QC	Quality Assurance and Quality control
GS4GG	Gold Standard for Global Goals

Appendix 1. Competence of team members and technical reviewers

Competence Statement			
Name	Sushant Vashisht		
Education	M.Sc. Environmental science and Technology		
Experience	2+ years		
Field	Environment science and technology		
Approved Roles			
Team Leader	YES (VM)		
Validator	YES (VM)		
Verifier	YES (VM)		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert (X.X)	YES (VM 1.2, 3.1)		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	26/08/2024
Approved by	Deepika Mahala (Deepika Mahala)	**Date**	26/08/2024

Competence Statement			
Name	Vaishali Yadav		
Education	M.Sc. environmental studies		
Experience	7 months		
Field	Climate Change & Environment / Industry		
Approved Roles			
Team Leader	NO		
Validator	YES (VM)		
Verifier	YES (VM)		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	23/02/2024
Approved by	Deepika Mahala (Technical Manager)	**Date**	23/02/2024

Competence Statement

Name	Mehreteab Michael Yemane		
Education	M.Sc. in Applied Environmental Sciences		
Experience	1 year		
Field	Environmental Sciences		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	YES (Eritrea)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	16/04/2024
Approved by	Deepika Mahala (Technical Manager)	**Date**	16/04/2024

Competence Statement			
Name	Shifali Guleria		
Education	M.Sc. (Environmental Studies and Resource Management), TERI University		
Experience	3+ year		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	YES (AMS-I.A., AMS-II.G., AMS-II.E., AMS-III.A.V., AMS-I.D, ACM0002)		
Local expert	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (1.2, 3.1)		
Reviewed by	Deepika Mahala	**Date**	18/02/2022
Approved by	Ashok Gautam	**Date**	18/02/2022

Competence Statement	
Name	Kaviraj Singh
Education	Ph.D. (Environmental Engineering), IIT Delhi Masters (Energy & Environmental), DAVV Indore
Experience	15 Years +
Field	Climate Change & Environment
Approved Roles	

Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D., AMS-II.D., ACM0006, AMS-I.A., AMS-I.C., AMS-II.B., AMS-III.H, ACM0002, ACM0001, AM0080, ACM0018, AM0056, AM0073 VM0042, AMS-III.G, AMS-III.AF., VM0032, VM0018, ACM0010, ACM0022, AMS-III.D, AMS-III.F and AMS-III.A.Q		
Local expert	YES (India)		
Financial Expert	YES		
Technical Reviewer	YES		
TA Expert (X.X)	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1, TA 13.2)		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	02/02/2023
Approved by	Deepika Mahala (Technical Manager)	**Date**	02/02/2023

Competence Statement			
Name	Anvesha Verma		
Education	B. Tech Biotechnology		
Experience	08 Months		
Field	Climate Change		
Approved Roles			
Team Leader	NO		
Validator	YES (VM)		
Verifier	YES (VM)		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	03/06/2024
Approved by	Deepika Mahala (Technical Manager)	**Date**	03/06/2024

Appendix 2. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	CO2Balance UK	PoA-DD	Version 16 dated 12/04/2023	CME
2.	CO2Balance UK	VPA-DDs MP6/MP5 VPA 65 (GS5038) – MP6 VPA 66 (GS5039) – MP6	VPA 65-70 (GS5038-43) – v1.5	CME

		VPA 67 (GS5040) – MP6 VPA 68 (GS5041) – MP6 VPA 69 (GS5042) – MP6 VPA 70 (GS5043) – MP6 VPA 119 (GS5825) – MP5 VPA 120 (GS5826) – MP5 VPA 121 (GS5827) – MP5 VPA 176 (GS7330) – MP6 VPA 177 (GS7331) – MP6 VPA 178 (GS7332) – MP6 VPA 179 (GS7333) – MP6 VPA 180 (GS7334) – MP6 VPA 181 (GS7335) – MP6 VPA 182 (GS7336) – MP6	VPA 119-121 (GS5825-7) – v4 VPA 176-82 (GS7330-6) – v2	
3.	CO2Balance UK	Monitoring Report	Version 4, Dated 31/07/2024	CME
3.1	GS4GG	Monitoring report template Guide	Version 1.1, published on 14/10/2020	GS4GG
4.	CO2Balance UK	MP6/MP5 VPA 65 (GS5038) – MP6 VPA 66 (GS5039) – MP6 VPA 67 (GS5040) – MP6 VPA 68 (GS5041) – MP6 VPA 69 (GS5042) – MP6 VPA 70 (GS5043) – MP6 VPA 119 (GS5825) – MP5 VPA 120 (GS5826) – MP5 VPA 121 (GS5827) – MP5 VPA 176 (GS7330) – MP6 VPA 177 (GS7331) – MP6 VPA 178 (GS7332) – MP6 VPA 179 (GS7333) – MP6 VPA 180 (GS7334) – MP6 VPA 181 (GS7335) – MP6 VPA 182 (GS7336) – MP6_Zoba Debub ERs_22-24_v2	-	CME
5.	The Gold Standard Foundation	Methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC)	Version 1.0	Others
6.	CO2Balance UK	MP5/6 CTFs	-	CME
7.	CO2Balance UK	ODA-Declaration	Dated 07/02/2019	CME
8.	CO2Balance UK	Debub MS WCFT	-	CME
9.	CO2Balance UK	SWS_Household_Database	-	CME
10.	CO2Balance UK	ZD MP6_MP5 Project_Survey	-	CME
11.	CO2Balance UK	ZD MP6_MP5_Usage_Survey	-	CME
12.	CO2Balance UK	WQT_Results	-	CME

13.	CO2Balance UK	Training records_2022-24	-	CME
14.	CO2Balance UK	WASH Training Debub MS 2022	26/12/2022	CME
15.	UNFCCC	CDM Sample Calculator	-	Others
16.	IPCC	IPCC Guidelines for National Greenhouse Gas Inventories 2.1(http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf)	-	Others
17.		UNFCCC CDM Default	Dated July 2021	Others
18.	CO2Balance UK	Water consumption field test household data forms	-	CME
19.	CO2Balance UK	5MST_23_ZD_MS_Dry_V1 & 5MST_23_ZD_MS_rainy_V1	-	CME
20.	GS4GG	Principles and Requirements	Version 1.2 Dated October 2019	Others
21.	CO2Balance UK	Stakeholder consulation report	Dated 01/05/2016,	CME
22.	UNFCCC	Guidelines for Sampling and surveys for CDM project activities and programmes of activities	Version 4.0	Others
23.	UNFCCC	Standard for Sampling and surveys for CDM project activities and programmes of activities	Version 09.0	Others
24.	UNFCCC	https://unfccc.int/cop7/documents/accords_draft.pdf	21/01/2002	Others
25.	UNFCCC	CDM PS for PoA	Version 3.0	Others
26.	UNFCCC	VVS for PoA	Version 3.0	Others
27.	UNFCCC	PS for PoA	Version 3.0	Others
28.	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories, volume 2, chapter 2 (Table 2.5)	-	Others
29.	The GS Foundation	Rule update (03/06/2021): Applicability of GWP for GS for the Global Goals Projects	Dated: 03/06/2021	Others
30.	IPCC	IPCC value (1996 IPCC Guidelines for National Greenhouse Gas Inventories) is applied (https://www.ipcc-nggip.iges.or.jp/public/g	-	Others

		l/guidelin/ch1ref3.pdf)		
31.	IPCC	IPCC 2019 value (Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories), volume 2, chapter 4, Table 4.3.3	-	Others
32.	UNFCCC	https://unfccc.int/cop7/documents/accords_draft.pdf	21/01/2002	Others
33.	VVB	Remote audit	27/05/2024 to 29/05/2024	VVB
34.	IPCC	https://www.ipccnggip.iges.or.jp/public/gp/bgp/2_2_Non-CO2_Stationary_Combustion.pdf https://www.ghgprotocol.org/sites/default/files/ghgp/Global-WarmingPotential-Values%20%28Feb%2016%202016%29_1.pdf	-	Others
35.	CDM	Tool 30: Calculation of the fraction of non-renewable biomass	Version 04.0	-
36.	CO_2 Balance	Failure records & Grievance logbook	-	CME
37.	CO_2 Balance	Water quality test report published by Ministry land water & Environment Water resource department	-	CME
38.	GS4GG	Site visit and Remote audit requirement and procedures	V2.0	GS4GG
39.	GS4GG	US Survey questionnaires CWS	V1.0	GS4GG
40.	CO_2 Balance	Baseline WBT	-	CME

Appendix 3. Clarification requests, corrective action requests and forward action requests

CAR: Corrective Action Request
CL: Clarification Request
FAR: Forward Action Request

TABLE 1. REMAINING FAR FROM VALIDATION AND/OR PREVIOUS VERIFICATION

FAR ID	NA	**Section no.**		**Date :** DD/MM/YYYY
Description of CL				
NA				
CME response				**Date :** DD/MM/YYYY
NA				
Documentation provided by CME				
NA				
VVB assessment				**Date:** DD/MM/YYYY
NA				

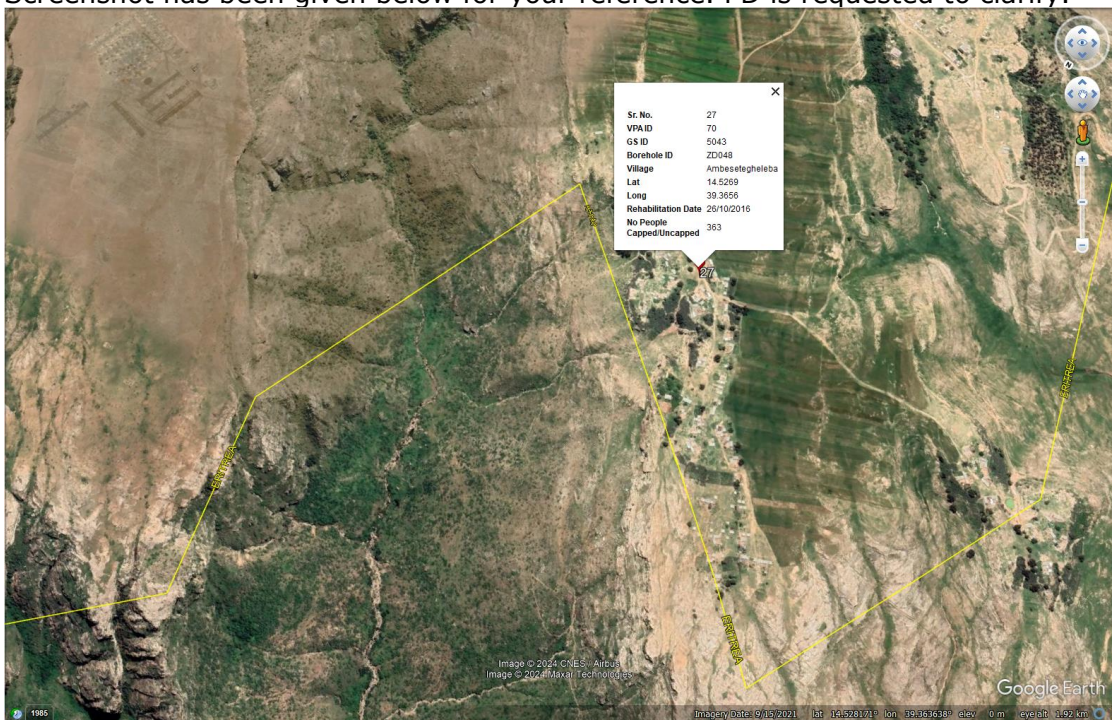
TABLE 2. CL FROM THIS VERIFICATION

CL ID	01	**Section no.**	Cover page	**Date :** 20/02/2024
Description of CL				
Under the SDG 13, in table 1, of the MR. The total ERs is reflected as 80,911 tCO_2e. However, in the ER sheet "All VPAs SDG Summary", Cell no. "F19", it is reflected as 79,172. PP shall clarify the inconsistency reported.				
CME response				**Date :** 26/02/2024
PD has updated the MR.				
Documentation provided by CME				
ZD MP6_MP5 MR v2				
VVB assessment				**Date:** 28/03/2024
The MR has been rectified to make the information on ERs to be consistent throughout the documents. The total ERs are reported to be 79,172 tCO_2e. Hence, the finding CL#01 stands CLOSED.				

CL ID	02	**Section no.**	A	**Date :** 20/02/2024
Description of CL				

Following observation under section A are as follows:

1. Under section A.1 & B.1 of the MR. PD has reported "In total 87 boreholes were rehabilitated as part of these project", PD to clarify and indicate the type of rehabilitation carried out for the boreholes or new boreholes were drilled.
2. The GPS coordinates reflected under the table of the section A.1 "VPA 70, GS ID: 5043, Borehole ID: ZD048, Village: Ambeseteghеleba" is found to lie in the country Ethiopia. Screenshot has been given below for your reference. PD is requested to clarify.



3. PD is requested to clarify how the daily usage of each end user is being monitored and ensures that the HHs are not selling the water acquired by the Project technology.

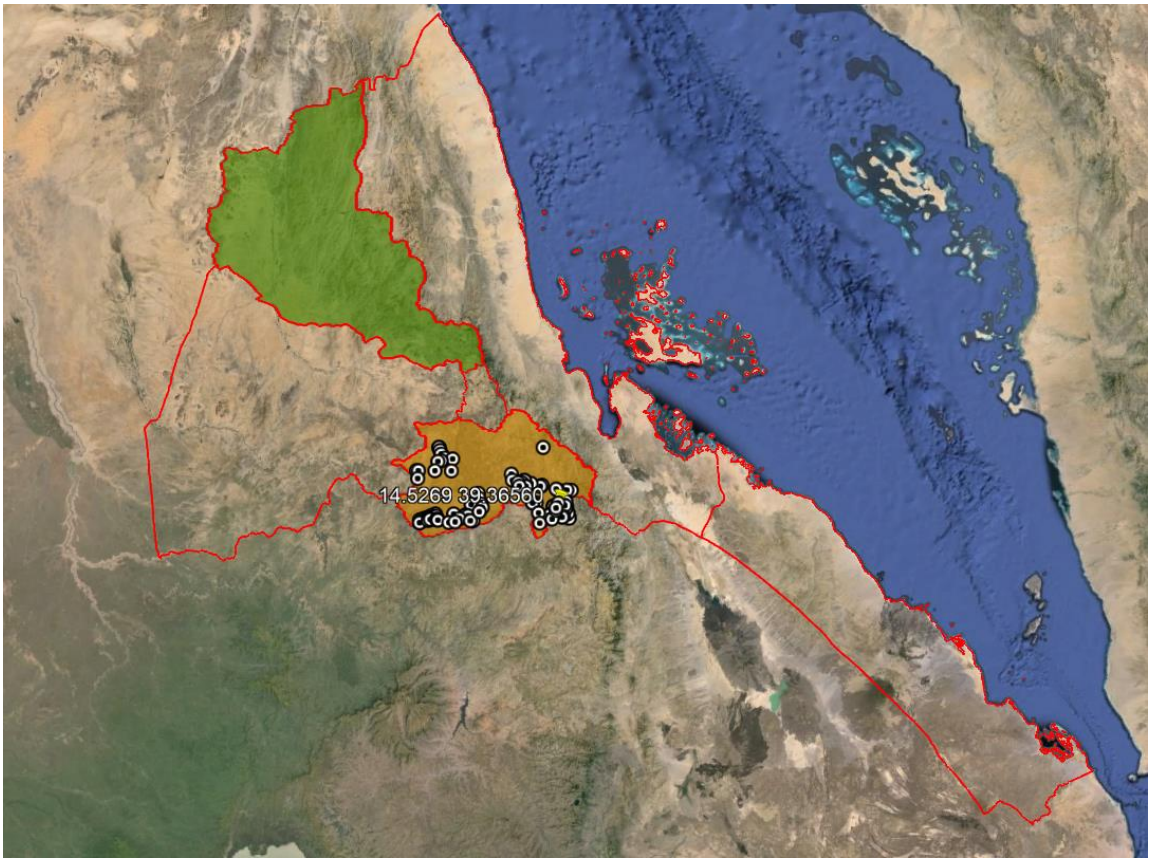
CME response	**Date :** 26/02/2024

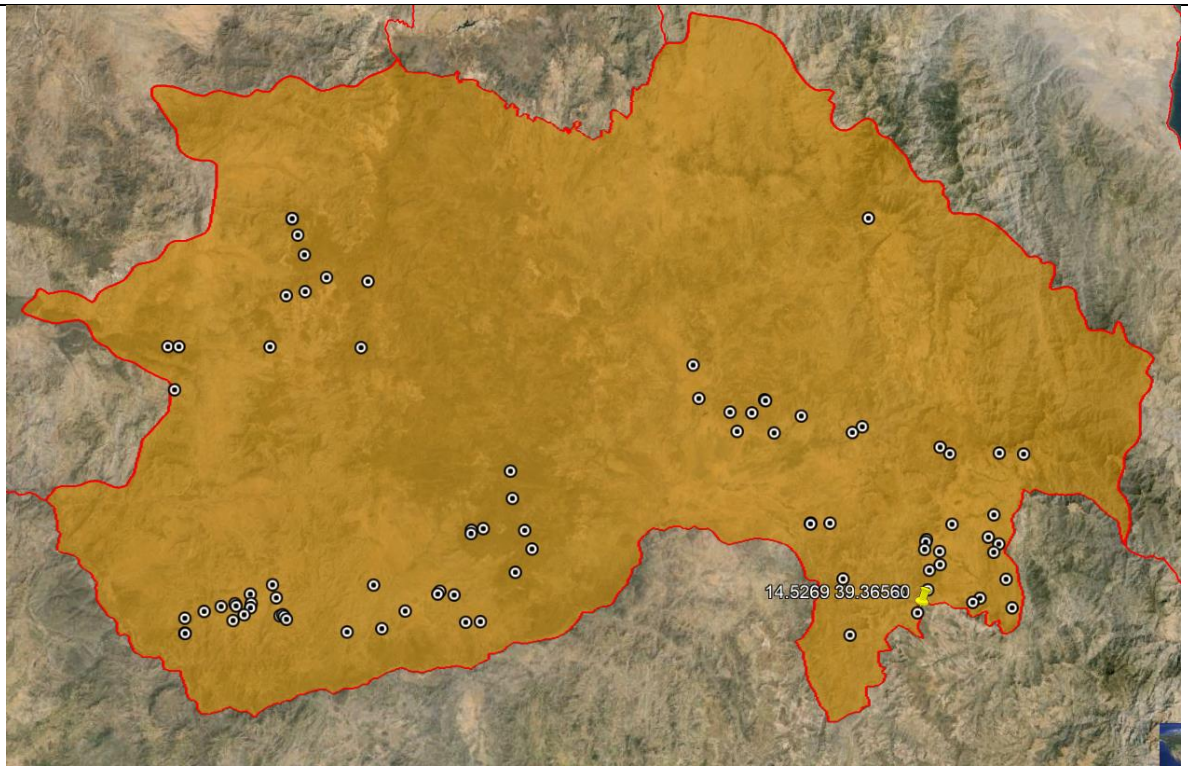
1. These were rehabilitated boreholes, ie the rehabilitation of existing, broken-down boreholes. No new boreholes were drilled.
2. All boreholes are in Debub, Eritrea. The partner visits the boreholes often and does not cross into Ethiopia to do so. The borehole is on the border with Ethiopia and because of poor satellite coverage the GPS data is not always accurate.
3. The usage survey and WCFT monitor the use of the water. It would be very unlikely the water is being sold due to the rural location. The caps on the water consumption of 7.5L, and the usage rate of 95%, ensure conservativeness.

Documentation provided by CME
WCFT – 'Debub MS WCFT', usage survey – 'Debub MS US_2022_V1' and 'Debub MS US_2023_V1'

VVB assessment	**Date:** 28/03/2024

1. The CME has clarified that the boreholes rehabilitated were the existing ones, and no new boreholes were drilled in the current monitoring period. The VVB found the clarification to be enough and appropriate. CLOSED. 2. PP is requested to provide clarification as to how the GPS location was collected and how PP ensured the data QA/QC after the data collection. Considering that some of the GPS data points fall outside the project boundary due to poor satellite coverage or poor GPS signal, the PP is requested to clarify as to how the remaining data points are correctly geo-referenced or mapped so that those points can be verified. OPEN 3. The CME points out the conservativeness in its approach while considering the water consumption to be 7.5L, and the usage rate to be 95%. The VVB found the reasoning to be appropriate, and also that the rural location makes it unlikely for the users to sell the extracted water. The monitoring of the daily usage of each end user via the usage survey and WCFT monitor is found to be acceptable. CLOSED.
CME response **Date :** 03/04/2024


14.5269 39.36560



PD has plotted the boreholes into Google Earth app (please refer to maps above that show Eritrea and, in Orange, the Debub Region): all BHs are within Debub Region in Eritrea, and specifically ZD048 (that is marked with the yellow hold) is as well the Eritrea borders.
Thus, PP can confirm that all data points are within the project boundaries.

VVB assessment	**Date:** 17/04/2024
The GPS data points shared by the CME were reviewed with the information provided in the database. The assessment team checked through QGIS & google earth and found the documents and geo coordinates of the boreholes to be consistent with VPA-DD. As all the boreholes plotted lied inside the project boundary and the clarification provided by the CME was found to be acceptable. Hence, CL#02 is closed.	

CL ID	03	**Section no.**	B	**Date :** 20/02/2024
Description of CL				
Under section B.1 "Description of implementation project" of the MR, the maintenance dates& details have been reflected. PP is requested to share the supporting documents to substantiate the same. Additionally, PD is requested to clarify who is responsible for maintenances & Maintenance cost. (Weather the maintenance cost is collected from the HHs / local implementer/ PD).				
CME response				**Date :** 26/02/2024
The partner in the host country – Vita Eritrea, is responsible for the maintenance and the associated costs. Community members report maintenance issues to Vita and they are responsible for the maintenance.				
Documentation provided by CME				
'RCFs', 'Procedures of Maintenance'.				
VVB assessment				**Date:** 28/03/2024

It is clear that the local implementer. i.e., Vita Eritrea is responsible for maintenances & Maintenance cost for the concerned project. The VVB has reviewed the document hereby shared by the CME ('RCFs') and found it to be appropriate. However, the document named 'Procedures of Maintenance' could not be traced, and the CME is requested to reshare it with the assessment team. OPEN.
CME response **Date :** 03/04/2024
PP has re-shared 'Procedures of Maintenance'.
Documentation provided by CME
Procedures of Maintenance
VVB assessment **Date:** 17/04/2024
The CME has shared the above-specified document, named 'Procedures of Maintenance', which the VVB reviewed and found to be appropriate. Therefore, the finding CL#03 stands CLOSED.

CL ID	04	**Section no.**	C and D.2	**Date :** 28/03/2024
Description of CL				
Under 'Ongoing Monitoring Studies' of section C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT, the MR says, "Quality of the treated water -The quality of the treated water will be assessed to ensure that it is fit for human consumption. As Eritrea does not have national standards for water quality the project applies the WHO standards." But under section D.2 Data and parameters monitored, the calculation method of parameter SDG 6.1.1 (Safe Water and Sanitation) says, "The Water Resource Department from the Ministry of Land, Water & Environment has certified each water supply as in line with national standards." The CME is requested to clarify what standard has been applied, and how the "Quality of Treated Water" with reference to water quality tests results has been checked and maintained.				
CME response				**Date : 03**/04/2024
The Water Resource Department (part of the Ministry of Land, Water and Environment) follows the WHO guidelines. PP has updated MR.				
Documentation provided by CME				
Water quality Standards - Eritrea 2004				
VVB assessment				**Date:** 17/04/2024
The CME has clarified that the WHO guidelines are followed by the Water Resource Department of the country. The water quality tests results are checked and maintained against those guidelines. Since the information provided by the CME is now consistent throughout, the CL#04 stands CLOSED.				

CL ID	05	**Section no.**	ER Sheet	**Date :** 28/03/2024
Description of CL				
In ER Sheet's "Project Technology Days" tabs for all the VPAs, the CME is requested to clarify the basis of the capping value considered. The registered VPA-DDs do not mention this value.				
CME response				**Date : 03**/04/2024
PP provides a functionality cap for conservativeness of 95%. This was not specified in the VPA-DD's as it is an old project in its last monitoring period of CP1. However, PP chooses to implement a cap to ensure conservativeness.				
Documentation provided by CME				
VVB assessment				**Date:** 17/04/2024

In consideration of the project's age, the CME has stipulated that a conservative approach be adopted by utilizing the capping value. The assessment team has reviewed this requirement and the deviation (DEV_242), which proposes a standardized monitoring approach for limiting the parameter of user numbers capped at 300. This proposal was approved by the registry on 13/06/2022. The PD shall ensure adherence to the proposed approach described in the deviation request and the applicable requirements as per the decision. A clarification is sought from the CME regarding the rationale behind the utilization of the capped value of 400, especially considering that a value of 300 was employed during the previous monitoring period. OPEN
CME response **Date :** 19/04/2024
CME applied for the deviation after the introduction of the GS BAMG report. Prior to the BAMG report, CME could claim up to the actual number of users using the boreholes, however with the introduction of the BAMG, CME capped at 300 users per borehole. Therefore, CME decided to seek the Deviation to allow for a greater number of people than 300 users per borehole when there is evidence that the borehole serves more than 300 users. Dev_242 was approved by GS. The tests outlined in the deviation request were carried out in the rainy and dry season to demonstrate that more than 300 users can be served. In Eritrea, a borehole is expected to serve up to 500 people as outlined on page 6 in the document '824-ER06-19202_IRC_ERITREA_Rural Water Supply_2006'.
Documentation provided by CME
VVB assessment **Date:** 24/04/2024
VVB has conducted an evaluation of the documentation provided by CME, specifically the document titled "Rapid assessment of Rural water supply & Sanitation in Eritrea" This document appears to be a draft version created on 13/03/2007. In accordance with deviation Dev_242, option 2, approved on 13/06/2022. PD is required to furnish the most recent 5-minute stroke test for each season as reflected in the Deviation 242. (OPEN)
CME response **Date :** 25/04/2024
PD has shared the 5MST excel results and analysis for the dry and rainy season in the original submission.
Documentation provided by CME
5MST_23_ZD_MS_Rainy_v1 and 5MST_23_ZD_MS_Dry_V1
VVB assessment **Date:** 25/04/2024
VVB has conducted an evaluation of the documentation provided by CME, specifically the documents titled "5MST_23_ZD_MS_Rainy_v1" and "5MST_23_ZD_MS_Dry_V1. After review, the assessment team found these stroke tests to be appropriate and they suffice to be the rationale behind keeping the capping value at 400. Therefore, the finding CL#05 stands CLOSED.

CL ID	06	**Section no.**	Cover Page	**Date :** 28/03/2024
Description of CL				
VVB during the desk review found that the version of VPA-DDs on the project webpage at GS4GG is as follows: For VPAs 65, 66, 67 the version available on the project webpage is v1.3. However, the version reflected in the MR is v1.5. The CME is requested to check and clarify the version of the VPA-DDs and provide the latest approved version of the VPA-DDs to the VVB.				
CME response				**Date : 02**/04/2024
PP has shared VPA-DDs for VPAs 65, 66 and 67.				
Documentation provided by CME				
Confidential_GS 5038 Eritrea Boreholes VPA65 DD V1.5_CL Confidential_GS 5039 Eritrea Boreholes VPA66 DD V1.5_CL Confidential_GS 5040 Eritrea Boreholes VPA67 DD V1.5_CL				
VVB assessment				**Date:** 17/04/2024

The CME has shared the latest version of the VPA-DDs for the above-mentioned VPAs. These documents are consistent with the versions specified in the MR and are found acceptable. Therefore, the finding CL#06 stands CLOSED.

CL ID	07	**Section no.**	A.1	**Date :** 25/06/2024
Description of CL				
It has been observed from the previous MP that the number of borehole users have substantially decreased during the current MP as compared to the previous MP. PD is requested to provide clarification on the same.				
CME response				**Date :** 02/07/2024
In the previous MP, the number of uncapped users was 58,556, and the number of households was 11,562. In this monitoring period the number of uncapped users is 43,264, and the number of households is 11,465. So, although the user numbers have decreased, the number of households is very similar, although very slightly lower. The number of users is monitored, and the reported numbers are shown in the household lists.				
Documentation provided by CME				
VVB assessment				**Date:** 16/07/2024
The explanation provided by the CME is found to be acceptable and cross checked with the project database. Hence, VVB concluded that the justification provided by the CME is acceptable to the VVB. Hence, CL#07 stands closed.				

CL ID	08	**Section no.**	D.2 & ER sheet	**Date :** 25/06/2024
Description of CL				

Following observation under section D.2 of MR & ER sheet as follows:

1. PD is requested to clarify the underlying source of the number of households in the determination of project technology days. How is it ensured that the premises are an inhabited household and there is no double counting with other institutions (school, church etc.) or any other project in the vicinity.

2. The borehole ID ZD038 was reported to be non-functional by 7 users for 2 days each (refer to US sheet for the year 2022, tab "answer sheet". How is this calculated as 0.0%. Please refer to comment raised in the ER Sheet, Sheet "GS5039 PTDs",

3. The usage survey "Debub_MS_US_2023_v1" columns CU-CW indicate lower values than 100%. PP is requested to clarify how the usage rate is considered 100% considering 0.8% of the households do not use borehole during dry season (refer to tab "analysis sheet", cell no. D63 of US 2023 and US 2022)

4. There are 15 households who reported non-functional boreholes in the year 2022- ZD038 (7 households) and ZD204 (8 households) for 2 days and 3 days respectively by each household (Refer to US 2022 sheet tab "Answer sheet"). PD shall clarify the rationale behind considering Usage Rate as 95%(capped) and 100%(uncapped). PD is requested to provide actual usage rate of the boreholes and update the ER calculation accordingly

5. 8 households reported the borehole ZD204 to be non-functional for 3 days. PD shall clarify how the down days is calculated as 0% considering the non-functionality of the borehole in year 2022 for 3 days each household. Please refer to comment raised in the ER Sheet, Sheet "GS5825 PTDs".

6. The value of the parameter "P_{access}" is reported to have increased from the previous MP. However, in section A.1 of this MR, the no. of people per VPA (uncapped) have decreased since the previous MP. PD is requested to clarify how this value has been calculated and how the new additional users were accounted considering that the users per VPA have actually decreased.

CME response	**Date :** 02/07/2024

1. The field team collects the user lists and only considers households, ie not churches, schools etc. This can be seen for in the HH user lists looking at the household numbers. These are comparable with what you would expect from a household, and not from a school, church or other type of premises. The document 'Declaration of non-double counting' was submitted in the original documents as demonstrates no other projects are in the area.
2. Question 17 of the usage survey asks if the borehole has been unfunctional for anytime in the past 12 months, and question 18 asks the respondents to specify the number of days if they answered yes. As this monitoring period starts 01/06/2024 and the usage survey in 2022 was conducted in December 2022, this question will also pick up non-functional days that fall in the previous monitoring period. There was a breakdown reported in 2022 from 11/04/2022-13/04/2022, which was reported in the previous verification. Please see RCF 'ZD038, Q2, 2022 MS'
3. There has been a mistake with entering the data. The answer to how many times do you collect water from the project borehole in the dry season has been wrongly marked as '4', 'never', however, as can be seen by question 13, 'On the days that you use the project borehole(s), how many containers of water do you fill each day from the borehole(s) in the dry season? (e.g. 10L *1; 20L *3)', they have answered they filled 2 20L buckets. For the answer to question 14 they have said they use this water for drinking, basic personal hygiene and food preparation. Question 15 shows that they fill 4 20L buckets in the dry season at other water sources and question 16 shows that they use this water for washing clothes, washing utensils and bathing. The usage rate calculation has been updated and shows that the usage rate is 100%. Even if this household doesn't use the borehole in the dry season, the usage rate would still be above the capped 95% value.
4. The usage rate and functionality are different but both capped at 95%. The functionality is what considers the down days (non-functional Borehole days), not the usage rate. Please see point 2 for explanation of BH ZD038. ZD204 was also non-functional in 2022 outside this monitoring period from 04/04/2022- 07/04/2022. This will be what has been reported in the usage survey for the same reason as explained in point 2 above. Please see RCF 'ZD204, Q2, 2022 MS', which was reported in the previous verification for the previous monitoring period.
5. Please refer to points 2 and 4 above for the explanation.
6. P_{access} only considers the capped users. The capped users have increased in this monitoring period due to the increase in the capped number from 300 users per borehole to a maximum of 371 users as determined by the stroke test outlined in the GS approved deviation, Dev_242, which was not applied in the previous MP. It is calculated as: Number of persons having access to safe water in the project activity (capped) multiplied by (1-Cj) multiplied by the usage rate. Please see Zoba Debub ERs_22-24 v2, sheet 'GS5038 SDGs Calcs', cell C16 for an example.

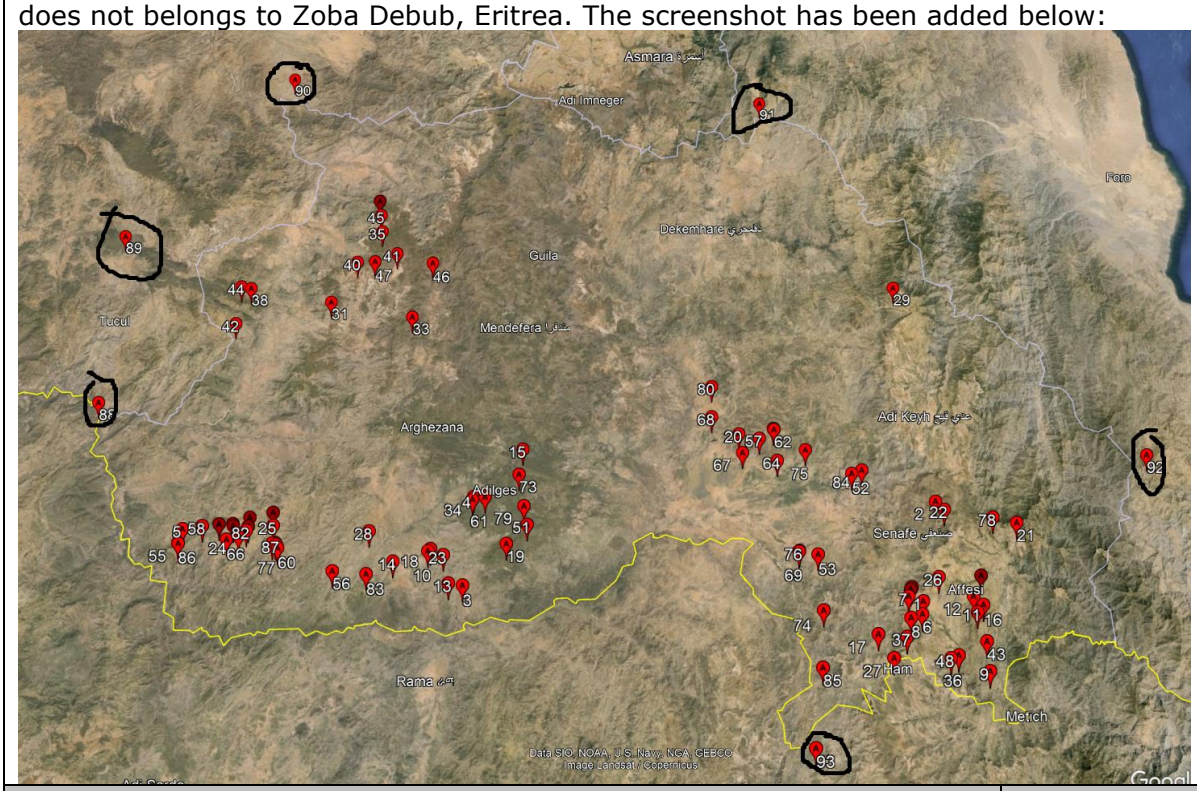
Documentation provided by CME

ZD038, Q2, 2022 MS
ZD204, Q2, 2022 MS
Declaration of non-double counting
Debub_MS_US_2023_V2
Zoba Debub ERs_22-24 v2

VVB assessment	**Date:** 16/07/2024

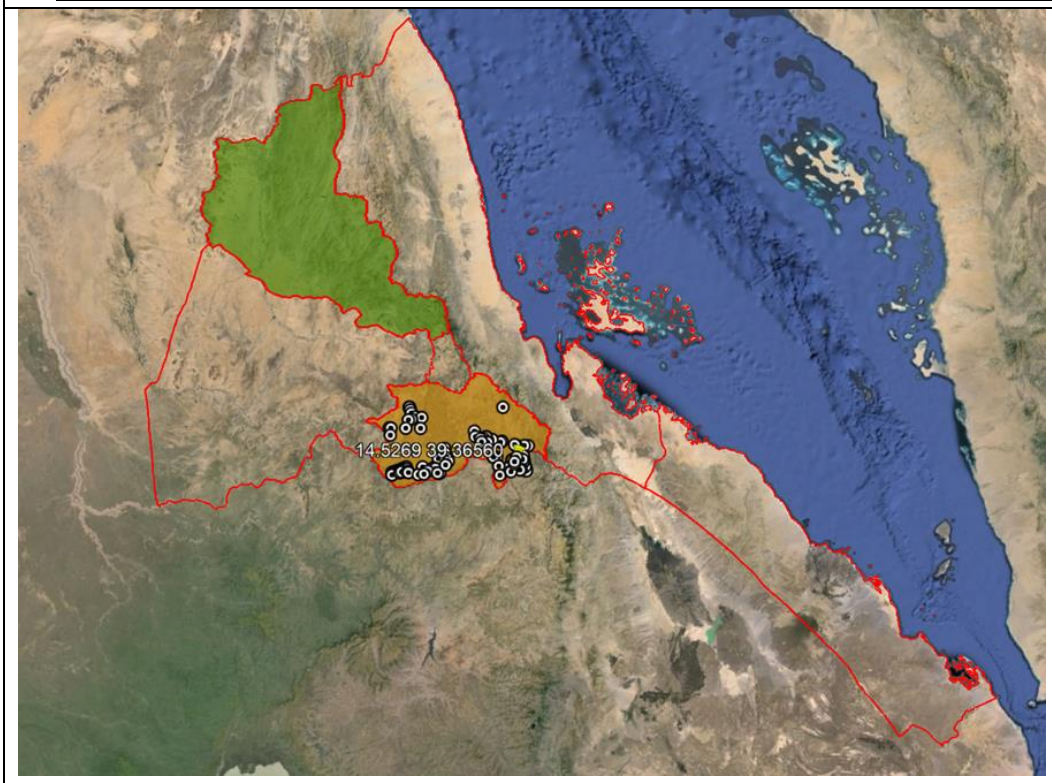
1. The explanation provided by the CME is found to be acceptable and cross-checked with the project database. Hence, VVB concluded that the justification provided by the CME is acceptable to the VVB. 2. The explanation provided by the CME is found to be acceptable and cross-checked with the usage survey. Hence, VVB concluded that the justification provided by the CME is acceptable to the VVB. 3. The VVB concluded that the PD has capped the usage rate at 95% and same has been rectified by the PD in the "Debub_MS_US_2023_v1". Hence, the explanation & revisions are acceptable to the VVB. 4. The explanation provided by the CME is found to be acceptable and cross-checked with the usage survey. Hence, VVB concluded that the justification provided by the CME is acceptable to the VVB. 5. The explanation provided by the CME is found to be acceptable and cross-checked with the usage survey. Hence, VVB concluded that the justification provided by the CME is acceptable to the VVB. 6. The explanation provided by the CME is found to be acceptable and cross-checked with the usage survey. Hence, VVB concluded that the justification provided by the CME is acceptable to the VVB. CL#08 stands closed.

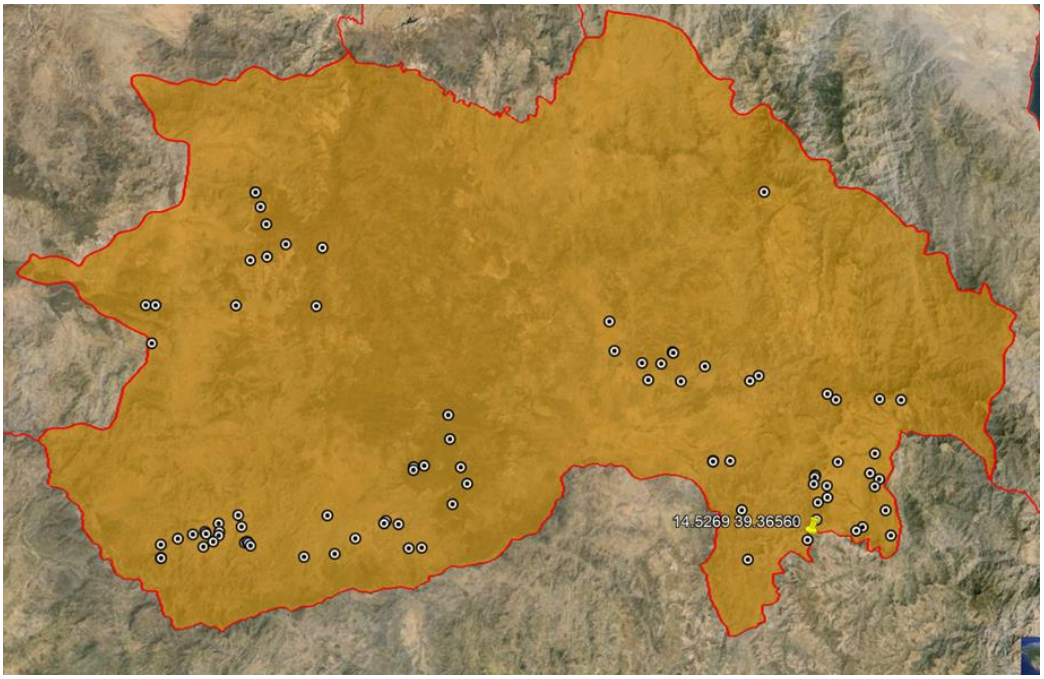
TABLE 2. CAR FROM THIS VERIFICATION

CAR ID	01	**Section no.**	A	**Date :** 20/02/2024
Description of CAR				
Under section A.2 "Location of the project" of the MR. The GPS coordinates reflected in the table does not belongs to Zoba Debub, Eritrea. The screenshot has been added below: 			
CME response				**Date :** 26/02/2024
The satellite coverage is poor in Eritrea. The boreholes circled are very close to Zoba Debub borders, and it is likely due to poor GPS signal meaning inaccurate co-ordinates.				
Documentation provided by CME				
VVB assessment				**Date:** 28/03/2024

PP is requested to provide clarification as to how the GPS location was collected and how PP ensured the data QA/QC after the data collection. Considering that some of the GPS data points fall outside the project boundary due to poor satellite coverage or poor GPS signal, the PP is requested to clarify as to how the remaining data points are correctly geo-referenced or mapped so that those points can be verified. The finding CAR#01 is OPEN.

CME response	**Date : 03**/04/2024





PD has plotted the boreholes into Google Earth app (please refer to maps above that show Eritrea and, in Orange, the Debub Region): all BHs are within Debub Region in Eritrea, and specifically ZD048 (that is marked with the yellow hold) is as well the Eritrea borders.
Thus, PP can confirm that all data points are within the project boundaries.

VVB assessment	**Date:** 17/04/2024

The GPS data points shared by the CME were reviewed with the information provided in the database. The assessment team checked through QGIS & google earth and found the documents and geo coordinates of the boreholes to be consistent with VPA-DD. As all the boreholes plotted lied inside the project boundary and the clarification provided by the CME was found to be acceptable. Hence, CAR#01 is closed.

CAR ID	02	**Section no.**	G	**Date :** 20/02/2024
Description of CAR				
Under section G1 of the MR. The information under the section is not sufficient enough. There is no indication of procedure, Time frame to resolve grievance, which party will be responsible (PD / local implementer). PD is requested to the incorporate this information.				
CME response				**Date :** 26/02/2024
PD has updated section G1. The comments are generally positive, but if anything, time sensitive was recorded, then this would be dealt with quickly. The local implementer, Vita, is responsible for responding to the logbook comments, however, any issues can be brought to PD to respond to.				
Documentation provided by CME				
VVB assessment				**Date:** 28/03/2024
The CME has added the information regarding the inputs and resolution of grievances raised during the concerned monitoring period. It is learned that both the local implementer and the CME are open to resolving the issues raised in the logbook, and the VVB found the clarification to be sufficient. Hence, the finding CAR#02 stands CLOSED.				