



**Monitoring report form for CDM programme of activities
(version 01.0)**

Complete this form in accordance with the Attachment "Instructions for filling out the monitoring report form for CDM programme of activities" at the end of this form.

MONITORING REPORT

Title of the programme of activities (PoA)	International Water Purification Programme	
UNFCCC reference number of the PoA	5962	
Version number(s) of the PoA-DD(s) applicable to this monitoring report	07	
Coordinating/managing entity (CME)	Pure Water Ltd.	
Version number of this monitoring report	01	
Completion date of this monitoring report	28/07/2017	
Monitoring period number and dates covered by this monitoring report	4 th monitoring period 01/06/2016- 30/04/2017	
Monitoring report number for this monitoring period	01	
Host Party(ies)	Host Party(ies) of the PoA	Is this a host Party to a specific-case CPA covered in this monitoring report?(yes/no)
	Uganda	Yes
	Ethiopia	No
	Gambia	No
	Kenya	No
	Madagascar	No
	South Africa	No
	Egypt	No
	El Salvador	No
	Mexico	No
	Nicaragua	No
	Chile	No
	Iran	No

	Vietnam	No
	Cambodia	No
	Malawi	No
Sectoral scope(s)	Sectoral scope 3 : Energy demand	
Selected methodology(ies)	AMS-III.AV. “Low greenhouse gas emitting safe drinking water production systems (version 03)”	
Selected standardized baseline(s)	N/A	
Total amount of GHG emission reductions or net GHG removals by sinks for all specific-case-case CPAs in the PoA covered in this monitoring report	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
	0 tCO ₂ e	176,050 tCO ₂ e

PART I - Programme of activities

SECTION A. Description of PoA

A.1. Brief description of the PoA

This PoA seeks to further the access of households and communities to clean and safe drinking water, by promoting low greenhouse gas emitting water purification technologies. This PoA is thus primarily designed for the long-term improvement of the living conditions of local people. The targeted users of such technologies will be households and/or communities. Examples of technologies include, but are not limited to, water filters (e.g. membrane, activated carbon, ceramic filters), solar technologies (Ultra violet disinfection devices, solar water disinfection SODIS), photocatalytic disinfection equipment, pasteurization appliances, chemical disinfection methods (eg. chlorination), combined treatment approaches (eg. Flocculation plus disinfection), etc.

The PoA reduces the use and demand for fossil fuels and non-renewable biomass that would have been used to boil water as a mean of water purification in the absence of the Programme of Activities. This directly leads to reduced greenhouse gas emissions.

A.1.1. Generic CPA(s)

Title, identification/reference number and/or version number of the generic CPA(s) of the PoA	Sectoral scope(s)	Applied methodology(ies) or combination of methodologies and/or standardized baseline(s)
International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	Sectoral scope 3 : Energy demand	AMS-III.AV. Low greenhouse gas emitting safe drinking water production systems (version 03) This methodology refers to the following methodology and tools: <ul style="list-style-type: none"> AMS-I.E. Switch from Non-Renewable biomass for thermal applications by the user (version 05)¹ Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion (version 02)² Tool to calculate baseline, project and/or leakage emissions from electricity consumption (version 01)³

A.1.2. Specific-case CPA(s) covered in this monitoring report

¹ http://cdm.unfccc.int/filestorage/5/e/HSVPWKBG6X7Q8YEFMOT214IA3R0ZDL.pdf/EB%2068_repan22_Rev_AMS-I.E_ver05.0.pdf?t=Ykh8b2NnY2I4fDCp1ObgpFSWKljWx5ggydnj

² <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf>

³ https://cdm.unfccc.int/Reference/tools/ls/meth_tool05_v01.pdf

Reference number of the specific-case CPA included in the PoA as of the end of this monitoring period	Title, identification/ reference number and version number of the generic CPA to which the specific-case CPA applies	Crediting period dates of the specific-case CPA	Is this specific-case CPA covered in this monitoring report? (yes/no)
5962-0001 (CPA-1)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	01/11/2013 – 30/10/2020	Yes
5962-0002 (CPA-2)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	17/07/2014 – 16/07/2021	Yes
5962-0003 (CPA-3)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	15/04/2015 – 14/04/2022	Yes
5962-0004 (CPA-5)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	19/11/2015 - 18/11/2022	No
5962-0005 (CPA-6)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	21/01/2016 – 20/01/2023	No
5962-0006 (CPA-7)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	21/01/2016 – 20/01/2023	No
5962-0007 (CPA-8)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	21/01/2016- 20/01/2023	No
5962-0008 (CPA-9)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	13/09/2016 – 12/09/2023	Yes

5962-0009 (CPA-10)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	13/09/2016 – 12/09/2023	Yes
5962-0010 (CPA-11)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	13/09/2016-12/09/2023	No
5962-0011 (CPA-12)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	13/09/2016 – 12/09/2023	No
5962-0012 (CPA-13)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	13/09/2016 – 12/09/2023	No
5962-0013 (CPA-14)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	13/09/2016 – 12/09/2023	No
5962-0014 (CPA-4)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	01/01/2017 – 31/12/2023	No
5962-0015 (CPA-15)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	01/02/2017 – 31/01/2024	No
5962-0016 (CPA-20)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	01/02/2017 – 31/01/2024	No
5962-0017 (CPA-21)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project	01/02/2017 – 31/01/2024	Yes

	activity (CPA)		
5962-0018 (CPA-22)	International water purification programme The approved PoA-DD (version 07, 13/04/2015): PART II. Generic component project activity (CPA)	01/02/2017 – 31/01/2024	Yes

A.1.3. Contact information of the coordinating/managing entity (CME) and/or responsible persons(s)/entity(ies)

Jessie Zhang, Pure Water Ltd. (CME), j.zhang@thesouthpolegroup.com

The detailed contact information of CME are provided in Appendix 1.

SECTION B. Implementation of PoA

B.1. Implementation of the management system of the PoA

The management system has been implemented as described in the validated PoA-DD ('Operational and management plan') and in accordance with applicable provisions on the implementation of the management system in the Project Standard. The PoA is managed by the CME (Pure Water Ltd.) with CPA Managers responsible for the coordination with the CPA Implementers (CPA 1: Water School Uganda; CPA 2, 3, 9, 10, 21 and 22: Evidence Action). Detailed roles and responsibilities of CME and CPA Implementers are described in the PoA-DD.

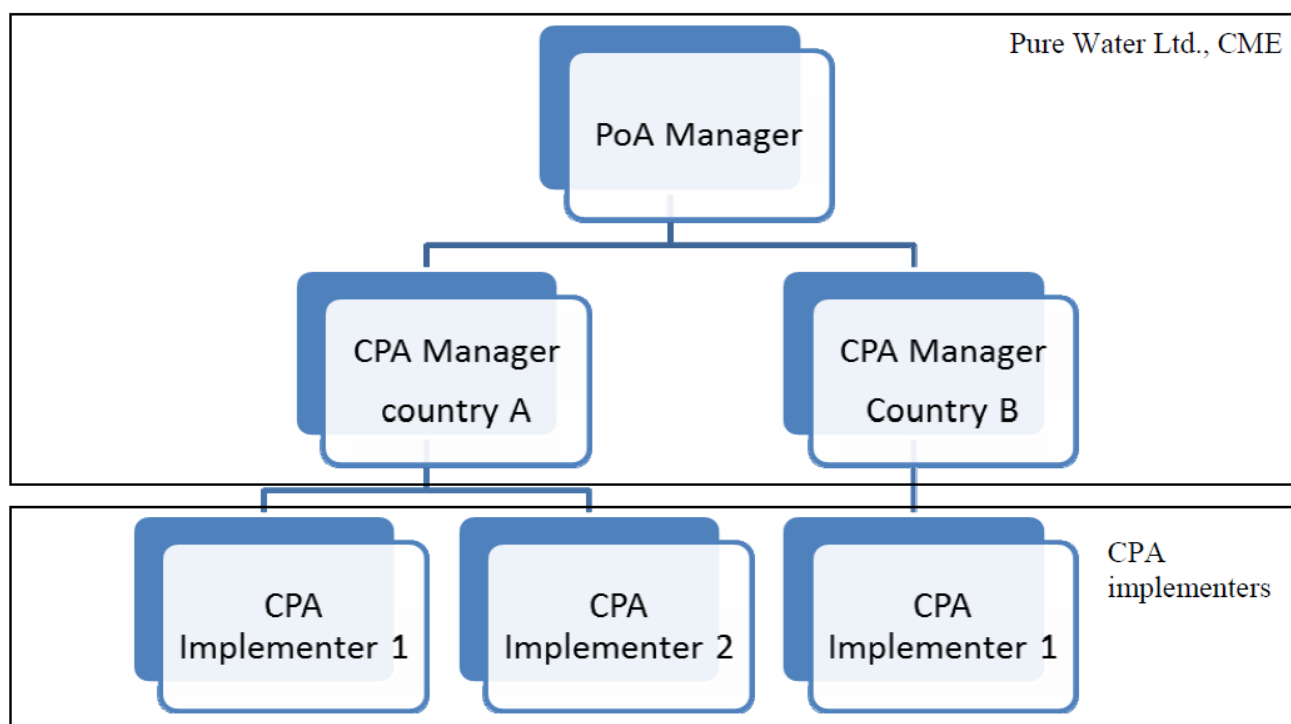


Figure: Overview of organizational structure

In order to ensure that CPAs comply with the double counting avoidance requirement stated in the PoA-DD, the CPA Manager checked every new CPA against the CPAs in the existing PoA database and the list of project activities that are under validation or registered at the UNFCCC.

All CPA-related data are stored electronically and/or in hard copy formats. The dispenser databases of CPA 2, 3, 9, 10, 21 and 22 contain details about the unique waterpoint IDs, installation dates and administrative units in which the dispensers were installed.

B.2. Implementation of single sampling plan(s)

In this monitoring period the single sampling plan was implemented combined for the involved CPAs as the same technology has been used in the same host-country (see section G.3 of Part II).

SECTION C. Post-registration changes to the PoA (including the generic CPA(s))**C.1. Corrections**

No corrections were made to the registered PoA-DD (including the generic CPAs).

C.2. Inclusion of a monitoring plan to the registered PoA-DD (including its generic CPA-DD(s)), if a monitoring plan was not included at the time of registration

No monitoring plan was included to the registered PoA-DD.

C.3. Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline

No permanent changes were made to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline.

C.4. Changes to the programme design of the registered PoA-DD (including corresponding changes to project design of the generic CPA-DD(s)) and updates to the eligibility criteria for inclusion of specific-case CPAs in the PoA

No changes were made to the programme design of the registered PoA-DD during the current monitoring period.

C.5. Types of changes specific to afforestation and reforestation activities

N/A

PART II - Specific-case component project activity(ies)

SECTION D. Description of specific-case CPA(s)

D.1. Brief description of implemented specific-case CPA(s)

The start date of CPA 1 [Gravity Driven Membrane Filters in Uganda](#) (CDM# 5962-0001) is still pending (no Gravity-Driven ultrafiltration Membranes filter has been distributed as of the end of the second monitoring period) and no CERs will be claimed for CPA 1 for the indicated monitoring period. No further information or monitoring data are provided in this monitoring report regarding CPA 1.

The implementation of the project activities of following CPAs were carried out in accordance with the registered CPA-DDs, including:

- CPA 2 Chlorine Dispensers in Uganda (CDM# 5962-0002)
- CPA 3 Chlorine Dispensers in Uganda (CDM# 5962-0003)
- CPA 9 Chlorine Dispensers in Uganda (CDM# 5962-0008)
- CPA 10 Chlorine Dispensers in Uganda (CDM# 5962-0009)
- CPA 21 Chlorine Dispensers in Uganda (CDM# 5962-0017) and
- CPA 22 Chlorine Dispensers in Uganda (CDM# 5962-0018)

Till 30/04/2017 a total chlorine dispensers installed within the defined project boundary are listed as below:

CPA No.	Total installed chlorine dispensers
CPA 2	1,150
CPA 3	1,013
CPA 9	1,209
CPA 10	833
CPA 21	850
CPA 22	920

In order to avoid double-counting each water source is given a unique ID. In addition, each dispenser casing is marked with a unique identification number on a scannable asset tag (barcode ID). The allocation of this barcode ID to the unique water point ID is recorded in a central database.

The CPA implementer is aware that the CPA will be subscribed to this present PoA and cedes its rights to claim and own emission reductions under the Clean Development Mechanism to the managing entity of this present PoA. The CPA implementer has warranted that the proposed CPA is neither registered as an individual CDM project, nor is it part of another registered PoA, nor is it a CPA that has been excluded from a registered CDM PoA as a result of erroneous inclusion of CPAs.

Purpose of the project activity CPA 2, 3, 9, 10, 21 and 22

The CPAs seek to further the access of households and communities to safe drinking water, using a low greenhouse gas emitting water purification technology, chlorine dispensers. The CPA reduces the use and demand of non-renewable biomass that would have been used to boil the water as a mean of water purification in the absence of the CPA. This directly leads to reduced greenhouse gas emissions.

Applicability of methodology

No events or situations occurred during the monitoring period that may have impacted the applicability of the applied methodology AMS-III.AV version 03.

Brief description of the installed technology and equipment

Chlorine dispensers have been installed in the project activity (CPA 2, 3, 9, 10, 21 and 22).

Hardware specification	
Dispenser casing	Injection-molded HDPE tank produced in Kenya
Dispenser tank	Blow-molded HDPE tank produced in Kenya; capacity 3 liters
Dispenser tank valve	Imported from USA; delivers a precise 3ml dose of chlorine
Marine padlock	Imported from China
Asset tag	Imported from USA
Chlorine	Sodium hypochlorite solution, 11.90 minimum pH, 1.2% \pm 0.1 available chlorine; imported from Kenya in 5 liter container with tamper-resistant cap
Hardware lifetime	5 years
Load factor	28,800 L per day ⁴

Relevant dates for the project activity

Timeline CPA	
29/07/2011	Validation start date of IWPP (PoA)
16/11/2012	Registration of the PoA under the CDM of the UNFCCC.
08/04/2013	Start date of CPA 2: installation of the first 12 dispenser in the roll-out phase (in Kibuku district, Kasasira sub-county). The unique barcode IDs of these 12 dispensers are 1002193, 1002199, 1002206, 1002211, 1002215, 1002218, 1002228, 1002596, 1002626, 1002655, 1002681 and 1002686. In total 1,150 dispensers were installed between 08/04/2013 and 10/04/2014 (see dispenser database for CPA 2).
09/10/2013	Emission Reduction Purchase Agreement signed between Pure Water Ltd. (the CME) and Evidence Action (implementer).
22/01/2014	Start date of CPA 3: installation of the first 2 dispenser (in Manafwa district, Bukiabi sub-county). The unique barcode IDs of these 2 dispensers are 1009810 and 1009888. In total 1,013 dispensers were installed between 22/01/2014 and 25/10/2014 (see dispenser database for CPA 3).
17/07/2014	CDM inclusion date of CPA2.
31/01/2015	Cut-off date monitoring period#1: 1,150 chlorine dispensers installed
15/04/2015	CDM inclusion date of CPA3.
30/09/2015	Cut-off date monitoring period#2: 1,150 chlorine dispensers installed (CPA 2) and 1,013 dispensers installed (CPA 3)
31/05/2016	Cut-off date monitoring period#3: 1,150 chlorine dispensers installed (CPA 2) and 1,013 dispensers installed (CPA 3)
13/09/2016	CDM inclusion date of CPA9.
13/09/2016	CDM inclusion date of CPA10.
01/02/2017	CDM inclusion date of CPA21.
01/02/2017	CDM inclusion date of CPA22.
30/04/2017	Cut-off date monitoring period#4: 1,150 chlorine dispensers installed (CPA 2), 1,013 dispensers installed (CPA 3), 1,209 chlorine dispensers installed (CPA 9), 833 chlorine dispensers installed (CPA 10), 850 chlorine dispensers installed (CPA 21), 920 chlorine dispensers installed (CPA 22)

Achieved emission reductions

⁴ Assuming 30 seconds per dispensing over 12 hours per day

Total GHG emission reductions achieved during this monitoring period are **176,050 tCO₂e**.

CPA	Monitoring Period #4 (01/06/2016 – 30/04/2017)
CPA 1	0
CPA 2	52,465
CPA 3	40,772
CPA 9	27,946 ⁵
CPA 10	30,183 ⁶
CPA 21	13,601 ⁷
CPA 22	11,083 ⁸
Total	176,050

D.2. Geographical references or other means of identification of the location of the specific-case CPA(s)

The physical boundary of CPA 2, 3, 9, 10, 21 and 22 are the communities who use the water points where chlorine dispensers are installed. A database containing the GPS coordinates and unique IDs for all included chlorine dispensers is available at the Evidence Action Uganda country office.

CPA 2

- Budaka district (all sub-counties), N 01° 00' 44.32", E 33° 48' 35.99"
- Kibuku district (all sub-counties), N 01° 04' 12.48", E 33° 59' 50.30"
- Manafwa district (Tsekukulu, Mukoto, Buwabala, Bukhabusi, Bukhaweka, Bupoto, Namabaya, Bumbu and Bukhoko sub-counties), N 00° 52' 40.72", E 34° 18' 51.38"

CPA 3

- Manafwa district (Bubutu, Bukiabi, Bumwoni, Lwakhakha TC, Magale, Namboko, Bugobero, Bukhofu, Bukhusu, Bunabwana, Busukuya, Butiru, Butta, Buwagogo, Kaato, Khabutoola, Manafwa TC, Nalondo, Sibanga, Sisuni and Wesswa sub-counties)
N 00° 52' 40.72", E 34° 18' 51.38"
- Mbale district (Bubyangu, Bufumbo, Bukhiende, Lukhonge, Busiu, Bumasikye, Busoba, Nyondo and Busanosub-counties), N 01° 00' 05.18", E 34° 10' 27.76"

CPA 9

- All dispensers are located within Budadiri East and Budadiri West in Sironko District, Bungokho North and Bungokho South in Mbale District, Uganda.
Longitude: E 34.1146° – 34.4270°, Latitude: S 0.9866° – 1.2638°

CPA 10

- All dispensers are located within Agule, Pallisa and Butebo, Pallisa District, Uganda.
- Longitude: E 33.5220° – 34.1745°, Latitude: S 1.0837° – 1.3268°

CPA 21

- All dispensers are located within Butaleja District (involved counties: Bunyole East and Bunyole West) and Namutumba District (involved county: Busiki), Uganda.

⁵ Only including CERs generated after CPA inclusion date (13/09/2016)

⁶ Only including CERs generated after CPA inclusion date (13/09/2016)

⁷ Only including CERs generated after CPA inclusion date (01/02/2017)

⁸ Only including CERs generated after CPA inclusion date (01/02/2017)

- Longitude: E 33.5508° – 34.1291°, Latitude: N 0.6959° – 1.0400°

CPA 22

- All dispensers are located within Busia District (involved county: Samia North) and Tororo District (involved counties: Tororo, West Budama North, and West Budama South), Uganda.
- Longitude: E 33.8000° – 34.4000°, Latitude: N 0.4000° – 0.9000°

SECTION E. Post-registration changes to specific-case CPA(s)**E.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

No temporary deviations from registered monitoring plan or applied methodology were necessary for the involved CPAs since the start date of the project activities.

E.2. Corrections

No corrections were made to the registered CPA DDs.

E.3. Changes to the start date of the crediting period of the specific-case CPA(s)

N/A

E.4. Inclusion of a monitoring plan into the specific-case CPA(s) that was not included at registration

No monitoring plan was included into the specific-case CPAs that was not included at registration.

E.5. Permanent changes to the monitoring plan as described in the registered specific-case CPA-DD(s), applied methodology or standardized baseline

N/A

E.6. Changes to project design of the specific-case CPA(s)

No changes to project design of the specific-case CPAs were made.

E.7. Types of changes specific to afforestation and reforestation specific-case CPA(s)

N/A

SECTION F. Description of the monitoring system of specific-case CPA(s)

Evidence Action had the responsibility to monitor and record all relevant parameters for CPA 2 and 3. The procedure is in line with the monitoring plan described in the CPA-DD section D.7.2. Details about the sampling design are given in section G.3.

Parameters to be monitored

- Existence of public distribution network supplying safe drinking water
(see 'interviews' below)
- Number of functional chlorine dispensers (N_v)
(see 'chlorine delivery records' below)
- Average number of refills per functional dispenser (Refill#)
(see 'chlorine delivery records' below)
- Fraction of delivered chlorine available for use in dispenser (Refill%)
(see 'surveys' below)
- Fraction of water treated with the dispenser that is actually drunk (Drink%)
(see 'surveys' below)
- Water quality (see 'surveys' below)

The data were collected through three main monitoring activities:

a) Chlorine delivery records (Refill# and N_v)

Refill#: Promoters collected chlorine in 5 L jerricans at the health centers. Each time chlorine was handed out to a promoter, it was recorded and kept at a logbook at the health center. Evidence Action collected chlorine usage data from health center and promoters.

Evidence Action regularly monitored the consumption of chlorine through the chlorine usage data to ensure the chlorine delivery/consumption is reasonable. Refill# is determined by adding up chlorine consumption at all chlorine dispensers functional during the monitoring period. Note: chlorine usage at non-functional dispensers was assumed to be always 0. The CME made a consistency check for the results.

The chlorine consumption was monitored and recorded by Evidence Action. In case of missing data, it is assumed that no chlorine was used.

N_y: Through random spot-checks the functionality of the chlorine dispenser was checked by Evidence Action field staff using a mobile phone-based recording format (dispenser spot-check). The records were uploaded to a master database on a central server and analysed by Evidence Action's MLIS team using the statistics software package 'Stata'. In case a dispenser was found to be non-functional, the status of the respective dispenser was recorded as "non-functional" in the respective CPA's dispenser database. Functionality is defined as: the dispenser releases 3 ml of chlorine when the valve is turned. In case the dispenser is empty, chlorine is added and the dispenser is checked again. The CME made a consistency check for the results.

The number of persons supplied with purified water from each chlorine dispenser (POP_y) is checked. The start date of the crediting period for CPA9 and CPA22 are 13/09/2016 and 01/02/2017 respectively, therefore the POP_y for CPA9 and CPA22 doesn't need to be updated during this monitoring period since it has not exceeded 2 years. For other CPAs which fall under Case 1, as per paragraph 3(a) in AMS-III.AV version 03, POP_y is an ex-ante determined value and does not need to be updated

b) Interviews (Existence of public distribution network supplying safe drinking water)

The regional water bureaus were visited by Evidence Action field staff to determine if a public distribution network supplying safe drinking water was constructed within the project area. Details are provided in a separate document.

c) Surveys (Refill%, Drink% and Water Quality)

Three parameters were quantified through surveys. Details about the surveys are given in section G.3.

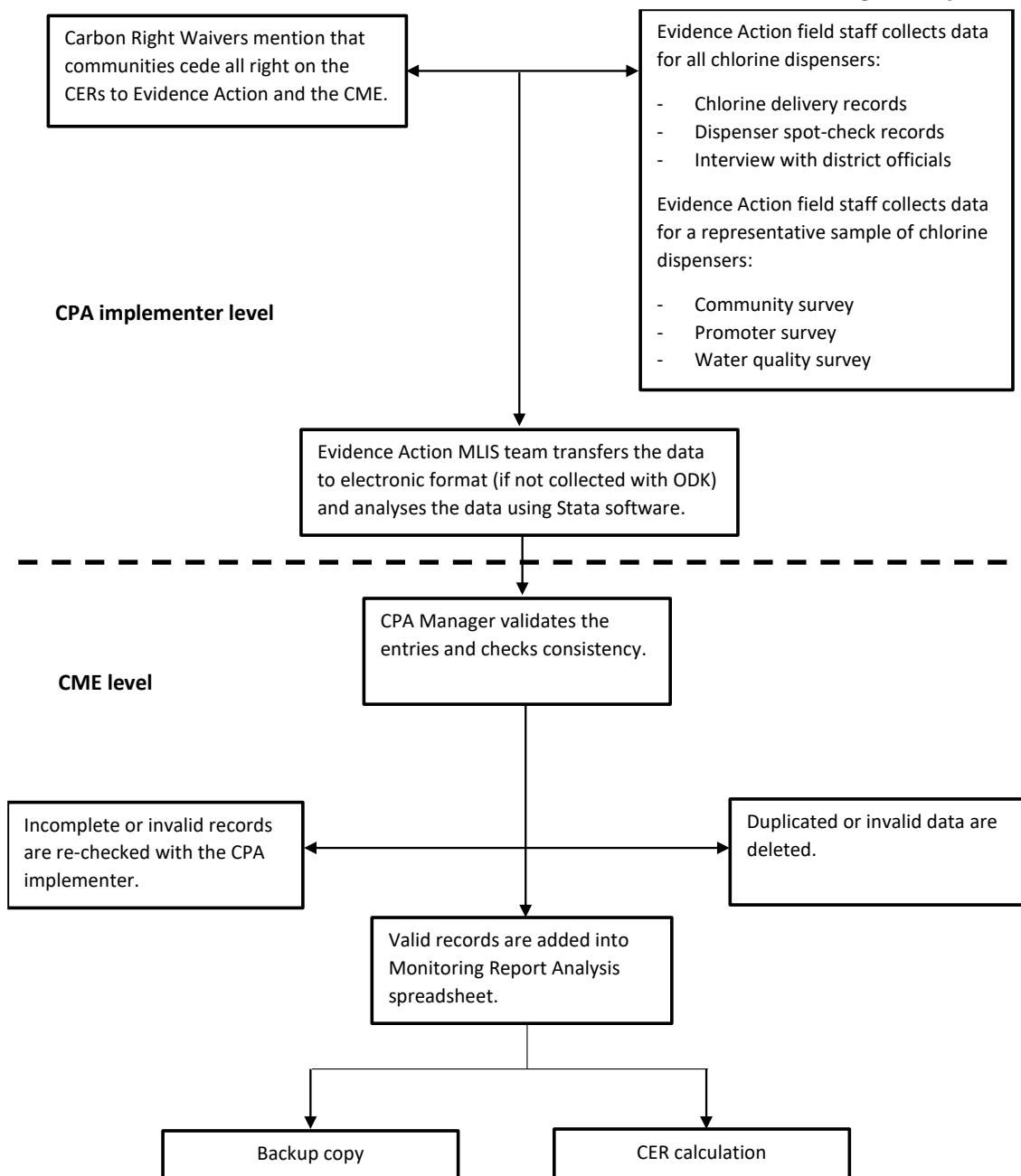


Figure: Records and documentation control process for CPA 2, 3, 9, 10, 21 and 22

SECTION G. Data and parameters**G.1. Data and parameters fixed ex ante, at registration, inclusion or renewal of crediting period**

Data / Parameter	EF_{projected_fossilfuel}
Data unit	tCO ₂ /TJ
Description	Emission factor as per AMS-I.E procedures when NRB is displaced or the emission factor of the fossil fuel substituted
Source of data	AMS-I.E for NRB displacement, IPCC for other fossil fuel displaced
Value(s) applied	81.6
Choice of data or measurement methods and procedures	As per AMS-I.E, this value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis.
Purpose of data	Calculation of baseline emissions
Additional comment	

Data / Parameter	WH
Data unit	kJ/L °C
Description	Specific heat of water
Source of data	AMS-III.AV version 03
Value(s) applied	4.186
Choice of data or measurement methods and procedures	Default value
Purpose of data	Calculation of baseline emissions
Additional comment	

Data / Parameter	T_f
Data unit	°C
Description	Final temperature
Source of data	AMS-III.AV version 03
Value(s) applied	100
Choice of data or measurement methods and procedures	Default value. Boiling point of water at standard conditions.
Purpose of data	Calculation of baseline emissions
Additional comment	

Data / Parameter	T_i
Data unit	°C
Description	Initial temperature
Source of data	AMS-III.AV version 03
Value(s) applied	20
Choice of data or measurement methods and procedures	Default value
Purpose of data	Calculation of baseline emissions
Additional comment	

Data / Parameter	WHE
Data unit	kJ/L
Description	Latent heat of water evaporation
Source of data	AMS-III.AV version 03
Value(s) applied	2,260
Choice of data or measurement methods and procedures	Default value. The latent heat required to boil one liter of water for five minutes is assumed to be equivalent to latent heat for the evaporation of 1% of the water volume (WHO recommends a minimum duration of five minutes of water boiling) ⁹
Purpose of data	Calculation of baseline emissions
Additional comment	

Data / Parameter	η_{wb}
Data unit	-
Description	Efficiency of the water boiling system being replaced
Source of data	Baseline survey
Value(s) applied	10.83% (CPA 2), 10.92% (CPA 3), 10.65% (CPA 9), 10.44% (CPA 10), 10.17% (CPA 21) and 10.35% (CPA 22)
Choice of data or measurement methods and procedures	0.10 default value is used if the replaced system or the system that would have been used is a three stone fire or a conventional system for woody biomass lacking improved combustion air supply mechanism and flue gas ventilation system i.e. without a grate as well as a chimney; for the rest of the systems using woody biomass 0.20 default value will optionally be used. 0.50 default value will be used if the replaced system or the system that would have been used is a fossil fuel combusting system. Use weighted average values if more than one type of system is encountered.
Purpose of data	Calculation of baseline emissions
Additional comment	The water boiling systems and the fuel used in the baseline have been established ex-ante via a baseline survey.

Data / Parameter	f_{NRB}
Data unit	-
Description	Non Renewable Biomass factor
Source of data	EB 67 Report Annex 22
Value(s) applied	82%
Choice of data or measurement methods and procedures	Fraction of woody biomass used in the absence of the project activity in year y for Uganda as per "Information note: Default values of fraction of non-renewable biomass for least developed countries and small island developing states (version 01.0)"
Purpose of data	Calculation of baseline emissions
Additional comment	

Data / Parameter	L_p
Data unit	Liters/refill (chemical disinfection)
Description	Capacity of the water purification equipment
Source of data	Manufacturer's specifications / Water Point Verification
Value(s) applied	32,971 (CPA 2), 32,680 (CPA 3), 33,115 (CPA 9), 33,293 (CPA 10), 32,715 (CPA 21) and 33,333 (CPA 22)

⁹ WHO guidelines for Emergency Treatment of drinking water at point of the use

Choice of data or measurement methods and procedures	Manufacturer specifications of maximal amount of water treated based on one refill (5 liter chlorine solution) and dosage (3 ml dose treats 20 liters of water if turbidity is below 10 NTU and 6 ml if turbidity is above 10 NTU)
Purpose of data	Calculation of baseline emissions
Additional comment	For the sake of conservativeness the specifications are adjusted for chlorine losses during refills (Refill%) and chlorinated water used for other purposes than drinking (Drink%).

Data / Parameter	POP _P
Data unit	-
Description	Number of persons supplied with purified water from each of the functional project appliances
Source of data	Water Point Verification
Value(s) applied	301 (CPA 2), 287 (CPA 3), 243 (CPA 9), 336 (CPA 10), 364 (CPA 21) and 334 (CPA 22)
Choice of data or measurement methods and procedures	As part of the Water Point Verification conducted by Evidence Action prior to the dispenser installation, the number of households using each water point of each CAP was established as below ¹⁰ : For CPA 2: POP _P = 53.8 households * 5.6 people/household = 301 For CPA 3: POP _P = 51.2 households * 5.6 people/household = 287 For CPA 9: POP _P = 43.4 households * 5.6 people/household = 243 For CPA 10: POP _P = 60 households * 5.6 people/household = 336 For CPA 21: POP _P = 65 households * 5.6 people/household = 364 For CPA 22: POP _P = 59.6 households * 5.6 people/household = 334
Purpose of data	Calculation of baseline emissions
Additional comment	

Data / Parameter	DW _{POP}
Data unit	Liters/person/day
Description	Average volume of drinking water per person per day
Source of data	Official data, WHO, minimum water quantity needed
Value(s) applied	3.5
Choice of data or measurement methods and procedures	Official data used on average volumes of drinking water per person per day in emergency situation published by World Health Organization ¹¹ . Conservative value as according to AMS-III.AV Version 03 a value of 5.5 liters per person per day shall not be exceeded.
Purpose of data	Calculation of baseline emissions
Additional comment	

Data / Parameter	POP _{Boiling}
Data unit	-
Description	Proportion of total population attended by the project that is serviced at households/buildings where water boiling would have been the purification practice.
Source of data	Baseline Survey

¹⁰ Uganda Household Survey 2009/2010, average household size for Eastern Uganda

¹¹ WHO SEARO, Minimum water quantity needed for domestic uses, 3 – 4 liters per person per day

http://ec.europa.eu/echo/files/evaluation/watsan2005/annex_files/WHO/WHO5%20-%20Minimum%20water%20quantity%20needed%20for%20domestic%20use.pdf

Value(s) applied	85.9% (CPA 9) and 83.0% (CPA 22) CPA 2, 3, 10 and 21 fall under Case 1 per paragraph 3(a) in AMS-III.AV version 03 and thus POP _{Boiling} does not need to be considered.
Choice of data or measurement methods and procedures	Survey
Purpose of data	Calculation of baseline emissions
Additional comment	The project activity falls under Case 1 per paragraph 3(a) in AMS-III.AV version 03 and thus POP _{Boiling} does not need to be considered. For Case 2, total project population needs to be adjusted for the fraction of the population serviced by the project equipment at households/buildings for which it can be demonstrated through documentation or survey that the practice of water purification would have been water boiling.

Data / Parameter	Ex-ante determined parameters for the project emissions from fossil fuel combustion
Data unit	-
Description	Parameters to be determined ex ante for the calculation of project emissions from fossil fuel combustion as per the tool.
Source of data	-
Value(s) applied	No consumption of fossil fuel by chlorine dispenser
Choice of data or measurement methods and procedures	-
Purpose of data	Calculation of project emissions
Additional comment	-

Data / Parameter	Ex-ante determined parameters for the project emissions from electricity consumption
Data unit	-
Description	Parameters to be determined ex ante for the calculation of project emissions from electricity consumption as per the tool
Source of data	-
Value(s) applied	No consumption of electricity by chlorine dispenser
Choice of data or measurement methods and procedures	-
Purpose of data	Calculation of project emissions
Additional comment	-

Data / Parameter	Leakage
Data unit	-
Description	Fractional increase in NRB usage by households outside the project boundary
Source of data	AMS-I.E Version 5
Value(s) applied	0.95
Choice of data or measurement methods and procedures	-
Purpose of data	Calculation of leakage
Additional comment	

G.2. Data and parameters monitored

Data / Parameter:	QPW_y
Unit:	Liters
Description:	Quantity of purified water in year y
Measured/ Calculated / Default:	Calculated
Source of data:	Derived from the capacity of the equipment established by the manufacturers' specifications, the number of functional project appliances, average number of refills per functional dispenser and two adjustment factors of Refill% and Drink%. $QPW_y = L_P * N_y * Refill\# * Refill\% * Drink\%$
Value(s) of monitored parameter:	265,163,954 L [CPA 2] , 207,776,939 [CPA 3], 138,895,620 [CPA 9], 147,056,517 [CPA 10], 64,551,558 [CPA 21] and 53,537,013 [CPA 22]
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	N/A
Calculation method (if applicable):	N/A
QA/QC procedures:	N/A
Purpose of data:	Calculation of baseline emissions
Additional comment:	QPW _y is subject to a cap derived from the population serviced by the project equipment POP _P multiplied by the average volume of drinking water per person per day based on official data. The calculation in the ER sheet shows QPW _y is smaller than cap for CPA 2, 3, 9, 10, 21 and 22 during this monitoring period.

Data / Parameter:	N_y
Unit:	-
Description:	Number of functional chlorine dispensers in monitoring period
Measured/ Calculated / Default:	Measured
Source of data:	Periodical physical inspection of each device (spot-checks). N _y is derived from regular functionality checks. In case a dispenser was found to be non-functional, the status of the respective dispenser was recorded as "non-functional" in the central database. In addition, dispensers that had no reported chlorine deliveries were also assumed to be non-functional. N _y was determined by multiplying the total number of installed dispensers by the fraction of functional dispensers at the cut-off date (30/04/2017).
Value(s) of monitored parameter:	1,060 [CPA 2] , 886 [CPA 3], 1,123 [CPA 9], 734 [CPA 10], 761 [CPA 21] and 835 [CPA 22]
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	Physical inspection of all dispensers in rotation.

Calculation method (if applicable):	N/A
QA/QC procedures:	In case a dispenser was not operating and has not been replaced at the cut-off date (30/04/2017), it was excluded from the emission reduction calculation for the whole monitoring period. Monitoring data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.
Purpose of data:	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	Refill#
Unit:	-
Description:	Average number of refills per functional dispenser per year
Measured/ Calculated / Default:	Measured
Source of data:	Number of chlorine containers delivered to promoters (chlorine delivery records) When new chlorine is delivered to a promoter, the number of containers delivered and the number of containers in stock are recorded. Refill# was determined by adding up all chlorine used during the monitoring period. For calculating Refill# only dispensers recorded as 'functional' at the cut-off date were considered.
Value(s) of monitored parameter:	9.17 [CPA 2] , 8.67 [CPA 3], 5.26 [CPA 9], 7.27 [CPA 10], 3.13 [CPA 21] and 2.80 [CPA 22] during this monitoring period.
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	At least annually
Calculation method (if applicable):	Stata code (based on chlorine delivery records)
QA/QC procedures:	Monitoring data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.
Purpose of data:	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	Refill%
Unit:	%
Description:	Fraction of delivered chlorine available for use in dispenser
Measured/ Calculated / Default:	Measured
Source of data:	Promoter survey. Survey question: "From the time that you receive the jerrican of chlorine to the time that the chlorine is put into the dispenser, is any chlorine lost?"
Value(s) of monitored parameter:	93.8%
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	At least annually

Calculation method (if applicable):	N/A
QA/QC procedures:	Monitoring data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.
Purpose of data:	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	Drink%
Unit:	%
Description:	Fraction of water treated with the dispenser that is actually drunk
Measured/ Calculated / Default:	Measured
Source of data:	Interview question included into water quality survey. Survey question: "What is your primary use for chlorinated water?" and "How much of your chlorinated water is used for [primary use]?"
Value(s) of monitored parameter:	88.2%
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	At least annually
Calculation method (if applicable):	N/A
QA/QC procedures:	Monitoring data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.
Purpose of data:	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	Existence of public distribution network supplying safe drinking water
Unit:	-
Description:	Existence of public distribution network supplying safe drinking water to the project boundary in year y
Measured/ Calculated / Default:	Interviews
Source of data:	Interviews with the technical personnel at the district bureau in Kibuku, Budaka, Manafwa and Mbale to determine if a piped water supply exists for the sub-counties included in the CPA. The information given by the technical personnel was confirmed by the Resident District Commissioners.
Value(s) of monitored parameter:	0 (no households need to be discounted)
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	Annual
Calculation method (if applicable):	N/A
QA/QC procedures:	Emission reductions related to those households will be discounted accordingly considering the number of households linked to the network and the date the network became operational.
Purpose of data:	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	Water quality
Unit:	-
Description:	Water quality
Measured/ Calculated/ Default:	Measured
Source of data:	Sampling surveys
Value(s) of monitored parameter:	94.3%
Monitoring equipment:	Hach Color Wheel for Total Chlorine Residual (TCR) and IDEXX machine for E.coli
Measuring/ Reading/ Recording frequency:	Water quality is monitored at least biennial as per registered CPA DD. As part of the second monitoring period water quality samples were collected monthly and the results were consolidated into one single value over the full monitoring period.
Calculation method (if applicable):	The fraction of households with sufficient water quality was established as the number of water samples with E.coli below 10 CFU/100 ml divided by the number of water samples that tested positive for the presence of TCR ('users').
QA/QC procedures:	The fraction of water quality measurements providing water of insufficient quality shall be excluded from the calculation of emission reductions.
Purpose of data:	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	POP_y
Unit:	-
Description:	Number of persons supplied with purified water from each of the functional project appliances
Measured/ Calculated / Default:	measured
Source of data:	Survey
Value(s) of monitored parameter:	301 (CPA 2), 287 (CPA 3), 243 (CPA 9), 336 (CPA 10), 364 (CPA 21) and 334 (CPA 22)
Monitoring equipment:	Survey
Measuring/ Reading/ Recording frequency:	At least every two years.
Calculation method (if applicable):	N/A
QA/QC procedures:	The fraction of water quality measurements providing water of insufficient quality shall be excluded from the calculation of emission reductions.
Purpose of data:	Calculation of baseline emissions
Additional comment:	<p>CPA 9 and CPA22 fall under Case 2. The start date of the crediting period for CPA9 and CPA22 are 13/09/2016 and 01/02/2017 respectively, therefore the POP_y for CPA9 and CPA22 doesn't need to be updated during this monitoring period since it has not exceeded 2 years.</p> <p>For other CPAs which fall under Case 1, as per paragraph 3(a) in AMS-III.AV version 03, POP_y is an ex-ante determined value and does not need to be updated</p>

Data / Parameter:	Monitoring parameters for the project emissions from fossil fuel combustion
Unit:	-

Description:	Parameters to be monitored for the calculation of project emissions from fossil fuel combustion as per the tool
Measured/ Calculated/ Default:	-
Source of data:	-
Value(s) of monitored parameter:	No consumption of fossil fuel by chlorine dispensers.
Monitoring equipment:	-
Measuring/ Reading/ Recording frequency:	-
Calculation method (if applicable):	-
QA/QC procedures:	-
Purpose of data:	Used to quantify project emissions
Additional comment:	To be considered only in the case the water purification devices consumes fossil fuels.

Data / Parameter:	Monitoring parameters for the project emissions from electricity consumption
Unit:	-
Description:	Parameters to be monitored for the calculation of project emissions from electricity consumption as per the tool
Measured/ Calculated/ Default:	-
Source of data:	-
Value(s) of monitored parameter:	No consumption of electricity by chlorine dispensers.
Monitoring equipment:	-
Measuring/ Reading/ Recording frequency:	-
Calculation method (if applicable):	-
QA/QC procedures:	-
Purpose of data:	Used to quantify project emissions
Additional comment:	To be considered only in the case the water purification devices consumes electricity.

G.3. Implementation of specific-case CPA level sampling plan

As indicated in Section F of this monitoring report, three parameters were quantified through surveys: Water quality, Drink% and Refill%. The single sampling design was implemented in line with the validated CPA DD Section D.7.2:

(i) *Objectives and Reliability Requirements*

The objective was to obtain a reliable and conservative estimates of the parameters listed in Section F obtained through surveys over the course of the monitoring period and meeting the indicated confidence/precision levels. The results were consolidated in one single value over the full monitoring period.

(ii) *Target Population*

The target population is the people with access to chlorine dispensers installed as a result of CPA 2, 3, 9, 10, 21 and 22 under the IWPP PoA. Each dispenser casing is marked with a

unique identification number on a scannable tag, which is part of the CPA dispenser database and linked to a unique water point ID. Each end user is linked to a cluster (water point with a dispenser) and each chlorine dispenser is assigned to a specific CPA. Surveys were conducted by Evidence Action field staff using mobile-based surveys (Open Data Kit).

(iii) *Sampling Method*

Grouping of CPAs was applied for this monitoring period (CPA 2, 3, 9, 10, 21 and 22). Clustered sampling was undertaken for the water quality and Drink% monitoring, and simple random sampling for Refill%. The sampling was done using Stata software to randomly select numbers corresponding to unique ID numbers of the clusters.

(iv) *Sample Size*

A 95/10 confidence/precision requirement has to be fulfilled. The number of visited dispensers is line with sample approach.

(v) *Sampling Frame*

The sampling frame for CPA 2, 3, 9, 10, 21 and 22 consisted of all installed chlorine dispensers allocated to CPA 2, 3, 9, 10, 21 and 22, represented by their unique identification numbers stored in the chlorine dispenser database.

The following section describes the details of the implemented sampling design:

Water Quality& Drink%: the CPA 2, 3, 9, 10, 21 and 22 dispenser databases with all dispensers were imported to Stata from dispenser databases. The field officers visit the households listed and tests their drinking water quality.

Refill%: Randomly selected promoters were interviewed during the monitoring period.

The collected data were summarized and analysed in an Excel spreadsheet. It is concluded the 95/10 confidence/precision level was met.

SECTION H. Calculation of GHG emission reductions or net GHG removals by sinks

H.1. Calculation of baseline emissions or baseline net GHG removals by sinks

$$BE_y = QPW_y * SEC * f_{NRB,y} * EF_{projected_fossilfuel} * 10^{-9} \quad (1)$$

$$= 58,565 \text{ tCO}_2\text{e [CPA 2]}$$

$$= 45,512 \text{ tCO}_2\text{e [CPA 3]}$$

$$= 31,196 \text{ tCO}_2\text{e [CPA 9]}$$

$$= 33,693 \text{ tCO}_2\text{e [CPA 10]}$$

$$= 15,182 \text{ tCO}_2\text{e [CPA 21]}$$

$$= 12,373 \text{ tCO}_2\text{e [CPA 22]}$$

Where:

BE_y	Baseline emissions during the year y (tCO ₂ e)
QPW_y	Quantity of purified water in year y = 265,163,954 (cap) [CPA 2] = 207,776,939 (cap) [CPA 3] = 138,895,620 (cap) [CPA 9] = 147,056,517 (cap) [CPA 10] = 64,551,558 (cap) [CPA 21] = 53,537,013 (cap) [CPA 22]
SEC	Specific energy consumption required to boil one liter of water = 3,301 kJ/L [CPA 2], 3,274 [CPA 3], 3,357 [CPA 9], 3,424 [CPA 10], 3,515 [CPA 21], 3,454 [CPA 22] (SEC calculation below)
$f_{NRB,y}$	Fraction of non-renewable biomass = 82% (default value for Uganda)
$EF_{projected_fossilfuel}$	Emission factor = 81.6 tCO ₂ /TJ (default value)

The specific energy consumption required to boil one liter of water was calculated as follows:

$$SEC = \left[WH * (T_f - T_i) + 0.01 * WHE \right] / \eta_{wb} \quad (2)$$

Where:

WH	Specific heat of water = 4.186 kJ/L °C (default value)
T_f	Final temperature = 100 °C (default value)
T_i	Initial temperature of water = 20 °C (default value)
WHE	Latent heat of water evaporation = 2,260 kJ/L (default value)
η_{wb}	Efficiency of the water boiling systems being replaced = 10.83% [CPA 2], 10.92% [CPA 3], 10.65% [CPA 9], 10.44% [CPA 10], 10.17% [CPA 21] and 10.35% [CPA 22] (baseline survey)

The water quality was monitored on sample basis for contamination with Escherichia coli (E. coli). A presence of up to 10 E. coli CFU/100 ml shall be acceptable. Only the fraction of water quality measurements providing water of sufficient quality (94.3%) needs be included from the calculation of emission reductions and BE_y was adjusted accordingly.

$$58,565 \text{ tCO}_2\text{e} * 94.3\% = 55,227 \text{ tCO}_2\text{e} [\text{CPA 2}]$$

$$45,512 \text{ tCO}_2\text{e} * 94.3\% = 42,918 \text{ tCO}_2\text{e} [\text{CPA 3}]$$

$$31,196 \text{ tCO}_2\text{e} * 94.3\% = 29,417 \text{ tCO}_2\text{e} [\text{CPA 9}]$$

$$33,693 \text{ tCO}_2\text{e} * 94.3\% = 31,772 \text{ tCO}_2\text{e} [\text{CPA } 10]$$

$$15,182 \text{ tCO}_2\text{e} * 94.3\% = 14,317 \text{ tCO}_2\text{e} [\text{CPA } 21]$$

$$12,373 \text{ tCO}_2\text{e} * 94.3\% = 11,667 \text{ tCO}_2\text{e} [\text{CPA } 22]$$

(3)

(Adjustment for water with insufficient quality, rounded down)

H.2. Calculation of project emissions or actual net GHG removals by sinks

The operation of the chlorine dispensers does not involve the consumption of fossil fuels or electricity. Therefore, the project emissions are zero.

H.3. Calculation of leakage

Leakage relating to the non-renewable woody biomass is assessed as per the relevant procedures of AMS-I.E version 5 explained below: BE_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.

$$55,227 \text{ tCO}_2\text{e} * 0.95 = 52,465 \text{ tCO}_2\text{e} [\text{CPA } 2]$$

(4)

$$42,918 \text{ tCO}_2\text{e} * 0.95 = 40,772 \text{ tCO}_2\text{e} [\text{CPA } 3]$$

$$29,417 \text{ tCO}_2\text{e} * 0.95 = 27,946 \text{ tCO}_2\text{e} [\text{CPA } 9]$$

$$31,772 \text{ tCO}_2\text{e} * 0.95 = 30,183 \text{ tCO}_2\text{e} [\text{CPA } 10]$$

$$14,317 \text{ tCO}_2\text{e} * 0.95 = 13,601 \text{ tCO}_2\text{e} [\text{CPA } 21]$$

$$11,667 \text{ tCO}_2\text{e} * 0.95 = 11,083 \text{ tCO}_2\text{e} [\text{CPA } 22]$$

Adjustment for leakage (2,762 tCO₂e (CPA-2), 2,146 tCO₂e (CPA-3), 1,471 tCO₂e (CPA-9), 1,589 tCO₂e (CPA-10), 716 tCO₂e (CPA-21), 584 tCO₂e (CPA-22), rounded)

H.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

Specific-case CPA reference number	Baseline emissions or baseline net GHG removals by sinks (tCO ₂ e)	Project emissions or actual net GHG removals by sinks (tCO ₂ e)	Leakage (tCO ₂ e)	GHG emission reductions or net GHG removals by sinks (tCO ₂ e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
5962-0001	0	0	0	0	0	0
5962-0002	55,227	0	2,762	0	52,465	52,465
5962-0003	42,918	0	2,146	0	40,772	40,772
5962-0008	29,417	0	1,471	0	27,946	27,946
5962-0009	31,772	0	1,589	0	30,183	30,183
5962-0017	14,317	0	716	0	13,601	13,601
5962-0018	11,667	0	584	0	11,083	11,083
Total	185,318	0	9,268	0	176,050	176,050

H.5. Comparison of GHG emission reductions or net GHG removals by sinks with estimates in the included CPA-DD(s)

Specific-case CPA reference number	Value estimated in ex ante calculation in the included CPA-DD(s)	Actual values achieved by the specific-case CPA(s) during this monitoring period
5962-0001 (CPA 1)	0	0
5962-0002 (CPA 2)	53,335 ¹²	52,465
5962-0003 (CPA 3)	40,941 ¹³	40,772
5962-0008 (CPA 9)	37,391 ¹⁴	27,946
5962-0009 (CPA 10)	36,123 ¹⁵	30,183
5962-0017 (CPA 21)	14,512 ¹⁶	13,601
5962-0018 (CPA 22)	13,821 ¹⁷	11,083
Total	196,123	176,050

H.6. Remarks on difference from the estimated value in the included CPA-DD(s)

As the start date of CPA 1 is still pending no CERs are claimed for this monitoring period.

For CPA 2, 3, 9, 10, 21 and 22, the measured emission reductions during the monitoring period are lower than the estimated emission reductions in the CPA-DDs.

¹² Estimated average annual emission reductions in CPA-DD (58,286 CERs) adjusted to 334 days

¹³ Estimated average annual emission reductions in CPA-DD (44,742 CERs) adjusted to 334 days

¹⁴ Estimated average annual emission reductions in CPA-DD (59,339 CERs) adjusted to 230 days

¹⁵ Estimated average annual emission reductions in CPA-DD (57,327 CERs) adjusted to 230 days

¹⁶ Estimated average annual emission reductions in CPA-DD (59,519 CERs) adjusted to 89 days

¹⁷ Estimated average annual emission reductions in CPA-DD (56,682 CERs) adjusted to 89 days

Appendix 1. Contact information of coordinating/managing entity and/or responsible persons/entities

Coordinating/managing entity and/or responsible person/entity	<input checked="" type="checkbox"/> Coordinating/managing entity <input checked="" type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
Organization name	Pure Water Ltd.
Street/P.O. Box	Technoparkstrasse 1
Building	-
City	Zurich
State/Region	-
Postcode	8005
Country	Switzerland
Telephone	+41 43 501 35 50
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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	1 April 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report, programme of activities		