

# **Tradewater - Thailand 7**

**June 10, 2025**

## **Tradewater, LLC**



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# A. PROJECT OVERVIEW

## A1. PROJECT TITLE

Tradewater – Thailand 7 (hereinafter referred to as “Project”)

## A2. PROJECT TYPE

Destruction of Ozone Depleting Substances from International Sources

## A3. NON-TECHNICAL EXECUTIVE SUMMARY OF PROJECT

### Description of project activity

The project activity is the destruction of eligible ODS refrigerant, specifically CFC-12 and trace amounts of CFC-11, which derives from multiple sources – an ISO tank which is sourced from a government stockpile in the custody of Thailand’s Customs Department on or before 2007, and a tonner sourced from multiple sources. Thailand has no mandate to destroy or convert this material and there are no financial incentives in the country to collect and destroy material.

WMS is the party responsible for transporting the refrigerant from the Customs Department facilities to the WMS warehouse for consolidation and later disposal. WMS also collected the material from the different sources for small-scale aggregation. Upon receipt of the material at the WMS warehouse, WMS transferred ownership of the cylinders, including ownership of any carbon offset credits that result from destruction, to Tradewater. Tradewater’s role is to provide financial and logistical support to ensure the material is destroyed following all the Montreal Protocol and ACR requirements.

Under business-as-usual, the ODS refrigerant would remain in storage, as the different sources had no means to destroy or convert the material. The stored refrigerant, which is contained in disposable cylinders, will gradually vent over time, through corrosion and deterioration. The risk of venting is mitigated by destruction at WMS, a destruction facility that meets the Montreal Protocol’s TEAP standards provided in the *Report of the Task Force on Destruction Technologies*.

### Background Information

Refrigerants such as CFC-12 and CFC-11 were historically used for industrial refrigeration and air conditioning for automobiles and trucks since the 1930s. CFC-12 and CFC-11 were fully banned from production under the Montreal Protocol in 2010 because of its adverse impacts on the ozone layer. Although production was banned by the Montreal Protocol, their continued usage was not.

In Thailand, ODS material require an end-of-life solution, one of which is destruction. However, there is currently no law, rule or regulation requiring the destruction of ODS, and no financial or logistical

infrastructure to ensure the material is destroyed safely and consistent with the requirements of the Montreal Protocol. As a result, the ODS material in Thailand risks continual release into the atmosphere overtime because it simply remains in stockpiles with no future use.

#### Project Purpose and Objectives

The purpose of this project is to offset the emissions that would have been released by the stockpiled ODS refrigerants. These refrigerants have no future use, and therefore will eventually be fully leaked.

## **A4. PROJECT ACTION**

#### Description of Prior Physical Conditions

In the business-as-usual scenario, ODS refrigerants are stockpiled and stored in various parts of the country in disposable containers that are not designed to store refrigerant for extended periods of time. Under this scenario, ODS refrigerant will leak into the atmosphere, because the containers in which they are held degrade overtime or slowly leak.

#### Description of how the Project will Achieve GHG Reductions

This project achieves emission reductions through the destruction of ODS refrigerant, instead of holding it in containers at risk of eventual leakage or release. This Project measures the amount of assumed emissions if the ODS were vented under business-as-usual scenario against the emissions prevented by the destruction of the same material. Destruction yields significantly lower net emissions than the business-as-usual scenario.

#### Description of Project Technologies, Products, Services, and Expected Level of Activity

After the ODS refrigerant stockpiles were transferred to Tradewater's ownership, the disposable cylinders were counted, weighed, and consolidated into an ISO tank and a tonner at the WMS warehouse located in Samutprakarn, Thailand, and from there, the ISO tank and tonner were transported to the WMS destruction facility and destroyed. The ODS refrigerant is destroyed in a fluidized bed incinerator, which utilizes a bed of hot granular material to transfer heat directly to the ODS feed.

As part of the monitoring activities, the destruction facility monitors and registers the relevant parameters in their CEMs data system in real time and then records these parameters every hour. Pressure and flow rate are monitored continuously on a separate stage of the furnace for gaseous substances such as ODS and collected every half hour.

The samples were taken by trained WMS technicians at the WMS warehouse, where the inventory and filling also took place. Destruction took place at the main WMS facility. The sample was sent to a third-party qualified laboratory for analysis.

## A5. PROOF OF PROJECT ELIGIBILITY

The Project is eligible under the “Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of OzoneDepleting Substances from International Sources, Version 1.0.” Additional eligibility requirements as noted in the ACR Standard, Version 8.0, are included below.

Table 1: Applicability Requirements from the Methodology sections 2.2.1 and 3.

<b>Criterion</b>	<b>Requirement</b>	<b>Proof of Project Eligibility</b>
Location	Project located outside of the United States and its territories.	Destruction occurred at WMS (BPEC), Samutprakarn, Thailand.
ODS Material	Only the destruction of eligible ODS refrigerants CFC-11, CFC-12, CFC-13, CFC-113, CFC-114 and CFC-115 are eligible under this Methodology.	CFC-12 and CFC-11 were destroyed in this project as shown in the Certificates of Destruction.
Stockpile Limitation	Any refrigerants obtained from a government stockpile or inventory are eligible only if they are not required to be destroyed or converted.	The refrigerants in this project are not required to be destroyed or converted.
Start Date	Project start date is defined as the date on which the earliest destruction activity of a project commences, documented on a Certificate of Destruction.	The project start date and destruction commencement date are the same date as documented on the included Certificate of Destruction.
Reporting Periods	Reporting period must not exceed 12 consecutive months. Project reporting period begins on the project start date.	Project reporting period begins on the project start date and does not exceed 12 months.
Crediting Periods	Project crediting period is 10 years.	The project crediting period is 10 years.
Regulatory Compliance	Projects must maintain material regulatory compliance. To do this, a regulatory body/bodies must deem that a project is not out of compliance at any point during a reporting period.	This project maintains regulatory compliance through the entirety of the reporting period.

Table 2: Applicability Requirements from the ACR Standard version 8.0, Chapter 3 (not already covered in the Methodology)

<b>Criterion</b>	<b>Requirement</b>	<b>Proof of Project Eligibility</b>
Minimum Project Term	The duration of the Minimum Project Term for specific project types is defined in the relevant ACR sector requirements and/or methodology. Project types with no risk of reversal after crediting have no required Minimum Project Term.	There is no risk of reversal for this project, so the minimum project term is not applicable.
Real	ERTs shall only be issued for a GHG emission reduction or removal that has been verified against an approved ACR Methodology to have already occurred. ACR will not credit a projected stream of credits on an ex-ante basis.	The GHG reductions occurred after the ODS refrigerant was destroyed. ERTs will be issued by the ACR after the project is successfully verified against the approved ACR Methodology
Title	The Project Proponent shall provide documentation and attestation of undisputed title to all carbon credits prior to registration. Title to credits shall be clear, unique, and uncontested.	Tradewater, LLC has provided documentation of undisputed title to all carbon credits generated by the project. Title to the credits is clear, unique, and uncontested.
Additional	GHG emission reductions and removals are additional if they exceed those that would have occurred in the absence of the project activity and under business-as-usual scenario.	The project passes the ACR-approved performance standard and regulatory surplus test.  There is no mandate for the destruction of ODS CFC refrigerant. In the absence of this project, the ODS would have been vented or leaked into the atmosphere under business-as-usual scenarios. The project sources meet all other requirements of the Methodology.
Regulatory Compliance	Adherence to all national and local laws, regulations, rules, procedures, other legally binding mandates and, where relevant, international conventions and agreements directly related to project activities.	This project maintains regulatory compliance throughout the entirety of the reporting period.

Permanent	For GHG projects with a risk of reversal of GHG emission reductions or removals, Project Proponents shall analyze and mitigate risk, and monitor, report, and compensate for reversals.	There is no risk of reversal of GHG removal enhancements for this project type.
Net of Leakage	ACR requires Project Proponents to address, account for, and mitigate certain types of leakage, according to the relevant sector requirements and methodology conditions. Project Proponents must deduct leakage that reduces the GHG emissions reduction and/or removal benefit of a project in excess of any applicable threshold specified in the methodology.	Leakage is not applicable to this project type.
Independently Validated	ACR requires third-party validation of the GHG Project Plan by an accredited, ACR-approved VVB once during each Crediting Period and prior to issuance of ERTs. Validation can be conducted at the same time and by the same VVB as a full verification; however, the deadline for validation is determined by the methodology being implemented and the project Start Date (see above). Governing documents for validation are the ACR Standard, including sector-specific requirements, the relevant methodology, and the ACR Validation and Verification Standard.	This project is validated and verified by a third-party ACR-approved VVB in accordance with the ACR standard.
Independently Verified	Verification must be conducted by an accredited, ACR-approved VVB prior to any issuance of ERTs and at minimum specified intervals. ACR requires verifiers to provide a reasonable, not limited, level of assurance that the GHG assertion is without material discrepancy. ACR's materiality threshold is $\pm 5\%$ .	This project is validated and verified by a third-party ACR-approved VVB in accordance with the ACR standard.

Environmental and Social Impact Assessments	ACR requires that all GHG projects develop and disclose an impact assessment to ensure compliance with environmental and social safeguards best practices. GHG projects must “do no harm” in terms of violating local, national, or international laws or regulations.	The impact assessment for this project is attached as Appendix A to this document.
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Eligibility of destruction facility

WMS exceeds TEAP requirements, based on the Analysis Report authored by United Analyst and Engineering Consultant Co. Ltd. Although not a RCRA facility, WMS exceeds the TEAP requirements which are formally required for RCRA facilities. TEAP criteria includes the following:

- DRE of 99.99% or greater.
- Emissions limitations as described in the chart below.
- Technical capability through demonstrated destruction of a refractory chlorinated organic compound or ODS itself, at a rate no lower than 1.0kg/hr.

Performance Qualification	Units	Concentrated Sources (ODS)
DRE	%	99.99
PCDDs/PCDFs	ng-ITEQ/Nm <sup>3</sup>	0.2
HCl/Cl <sub>2</sub>	mg/Nm <sup>3</sup>	100
HF	mg/Nm <sup>3</sup>	5
HBr/Br <sub>2</sub>	mg/Nm <sup>3</sup>	5
Particulates	mg/Nm <sup>3</sup>	50
CO	mg/Nm <sup>3</sup>	100

As described in the Analysis Report authored by United Analyst and Engineering Consultant Co. Ltd, the DRE result for WMS exceeds 99.99% efficiency. Therefore, the facility exceeds the TEAP requirement.

The emissions results from testing are as follows:

Performance Qualification	Limit (Concentrated )	Emissions normalized at 11% Oxygen
PCDDs/PCDFs	0.2 ng-ITEQ/Nm <sup>3</sup>	0.065 ng-ITEQ/Nm <sup>3</sup>
HCl/Cl <sub>2</sub>	100 mg/Nm <sup>3</sup>	2.857 mg/Nm <sup>3</sup>
HF	5 mg/Nm <sup>3</sup>	0.294 mg/Nm <sup>3</sup>
HBr/Br <sub>2</sub>	5 mg/Nm <sup>3</sup>	<0.001 mg/Nm <sup>3</sup>
Particulates	50 mg/Nm <sup>3</sup>	10.857 mg/Nm <sup>3</sup>
CO	100 mg/Nm <sup>3</sup>	73.571 mg/Nm <sup>3</sup>

Based on the above emissions results, WMS exceeds the TEAP requirements on all emissions. A flow rate of 25 kg/hr is also achieved, which confirms that all TEAP requirements are met or exceeded.

Thailand has established a net zero target by 2065, which involves reducing greenhouse gas emissions by 30-40% from business-as-usual levels by 2030. This project is compatible with and contributes to those net zero objects by achieving emission reductions in non-CO<sub>2</sub> emissions.<sup>1</sup>

## **A6. PROJECT LOCATION**

The project location is Thailand, in that all ODS material is acquired, collected, and destroyed in Thailand. Waste Management Siam LTD (WMS) had original custody of the ODS material, which was acquired from the Thai Customs Department, and WMS is also the location of the consolidation activities. The material was destroyed at a WMS facility, located in the Samutprakarn province, in Bangpoo Environmental Complex Col. Ltd (BPEC). WMS transferred ownership of the ODS material to Tradewater, including its environmental attributes.

The address and GPS coordinates for the WMS destruction facility are:

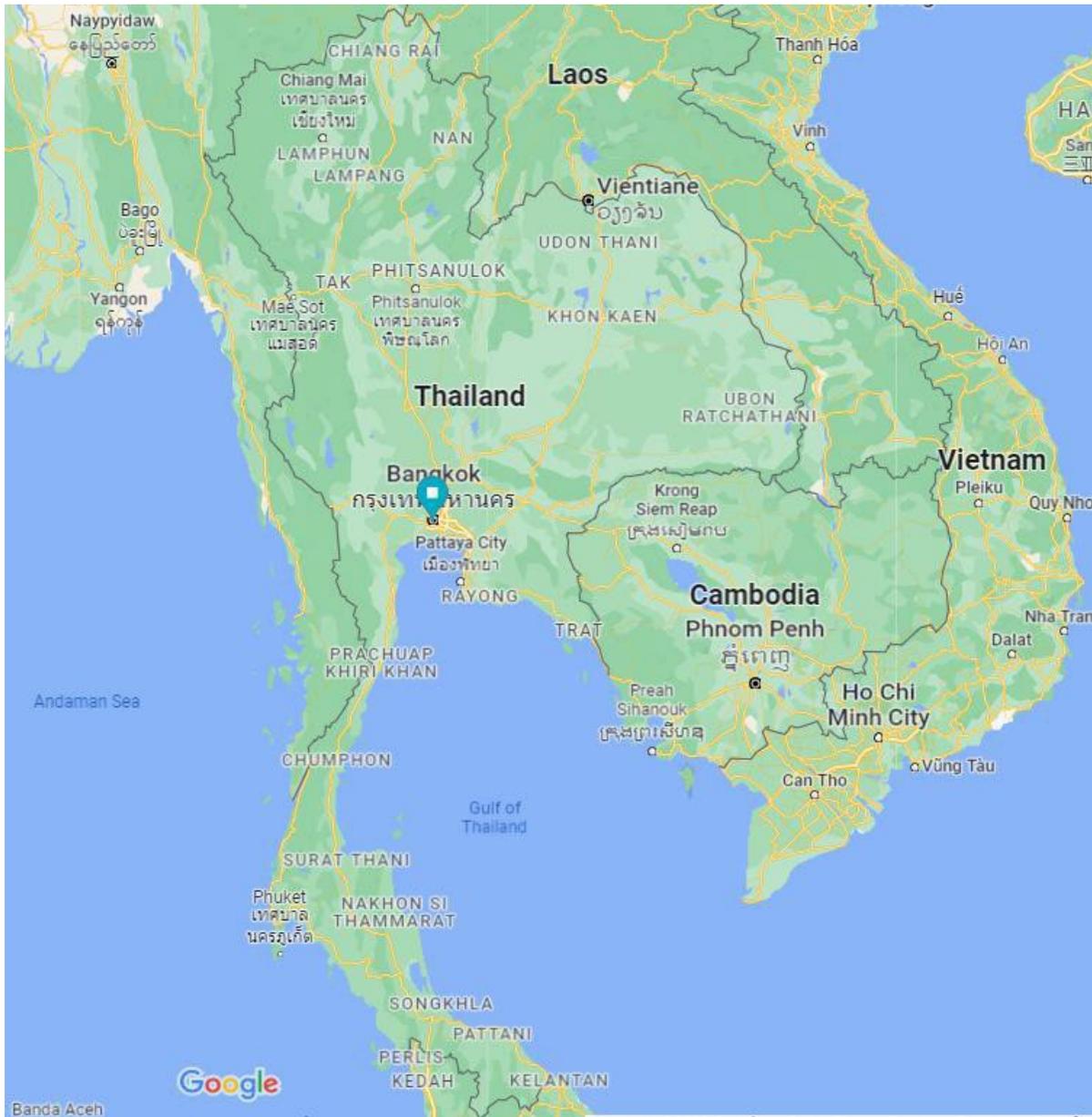
965 Moo 2 Soi 3B Bangpoo Industrial Estate, Sukhumvit Rd Bangpoo Mai, Muang Samutprakarn, Samutprakarn, 10280 Thailand

Latitude: 13.668834

Longitude: 100.633958

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<sup>1</sup> <https://climatepromise.undp.org/what-we-do/where-we-work/thailand>



## A7. REGULATORY COMPLIANCE

Waste Management Siam (WMS) is under the supervision of the Industrial Estate Authority of Thailand, which requires that the company presents a Monitoring Report annually addressing all aspects of environmental care, health and safety, and other operational parameters considered a requirement for the operation of the facility. This report is generated by a third party, unrelated to WMS. WMS submits an operation report to IEAT on monthly basis and there is no issue for IEAT to audit. IEAT establishes a 3-party committee for EIA monitoring and audit factory with EIAT, who further distribute to

related government agency for example Provincial Office of Natural Resources and Environmental, Provincial office Public health, local authority, etc.

The ODS refrigerant destroyed in this project is considered a “national item” under Customs Law because it was seized and stockpiled by the Thai Customs Department. As such, it is exempt from other Thai regulations, including the Hazardous Substance Act B.E. 2535, which indicates in Clause 15 that a specific law (e.g., the Customs Law), takes precedence over the general law and requirements of B.E. 2535.<sup>2</sup>

The lack of a mandate to destroy a “national item” was confirmed in a meeting on April 5, 2022 (reference *Guidelines for the destruction of refrigerants under the supervision of the Customs Department*).<sup>3</sup> Thai Customs and the department of Industrial Works affirmed that no law applicable to Thai Customs required the destruction of refrigerants listed under the Montreal Protocol.

Per the September 8, 2022 letter to WMS titled “*Handling over the refrigerants seized under the Customs Department for destruction at Bangpoo Environmental Complex Co., Ltd*” and issued by Thai Customs Enforcement Division, Customs “can handle the property in dispute under the Customs regulations and referring to the regulations in the chapter of criteria, methods and conditions for the distribution of the property in dispute B.E 2563 (2020).”<sup>4</sup>

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<sup>2</sup> <https://www.diw.go.th/webdiw/wp-content/uploads/2021/07/law-haz-29032535-eng.pdf>

<sup>3</sup> [https://www.customs.go.th/cont\\_strc\\_simple\\_with\\_date.php?lang=en&top\\_menu=menu\\_homepage&ini\\_menu=menu\\_public\\_relations\\_160421\\_04&left\\_menu=menu\\_public\\_relations\\_160421\\_04\\_160421\\_01&current\\_id=142329324148505f49464b4c464b4d](https://www.customs.go.th/cont_strc_simple_with_date.php?lang=en&top_menu=menu_homepage&ini_menu=menu_public_relations_160421_04&left_menu=menu_public_relations_160421_04_160421_01&current_id=142329324148505f49464b4c464b4d)

<sup>4</sup> [https://www.jetro.go.jp/ext\\_images/thailand/pdf/2020ENMOINotiListHazNo6BE2563.pdf](https://www.jetro.go.jp/ext_images/thailand/pdf/2020ENMOINotiListHazNo6BE2563.pdf)

## A8. PARTIES

**Table 3: Parties involved in Project**

<b>Entity</b>	<b>Name</b>	<b>Role/Title</b>	<b>Contact Info</b>	<b>Responsibility</b>
<i>Tradewater, LLC</i>	<i>Timothy H. Brown</i>	<i>Chief Executive Officer</i>	<i>1550 W. Carroll, Suite 213 Chicago, IL 60607 Mob. +1 3122735122</i>	<i>Project Proponent</i>
<i>Tradewater, LLC</i>	<i>Maria Gutierrez Murray</i>	<i>Senior Director of International Projects</i>	<i>1550 W. Carroll, Suite 213 Chicago, IL 60607 Mob. +506 83342002</i>	<i>Business development</i>
<i>Waste Management Siam LTD</i>	<i>Sutthida Fakkum</i>	<i>Senior Compliance &amp; EHS Manager</i>	<i>965 Moo 2 Soi 3B Bangpoo Industrial Estate, Sukhumvit Rd Bangpoo Mai, Muang Samutprakarn, Samutprakarn, 10280 Thailand Mob. +66 899201042</i>	<i>Destruction Facility</i>

### Tradewater, LLC – Project Proponent

Tradewater, LLC has operated since 2016 and is a mission-driven company. Tradewater’s aim is to collect and destroy greenhouse gases found around the world while creating economic opportunity. Tradewater as a whole has a goal of eliminating 3 million tons of CO<sub>2</sub> equivalent annually.

### Waste Management Siam LTD – Destruction Facility

WMS is located within the Bangpoo Environmental Complex (BPEC) and constructively utilizes factory waste to produce steam and electricity for use in advanced clean air technologies, via a fluidized bed incinerator. WMS is part of DOWA Holdings CO, LTD.

## A9. AGGREGATION AND PROGRAMMATIC DEVELOPMENT APPROACH

Not applicable to this project type.

# B. METHODOLOGY

## B1. APPROVED METHODOLOGY

The Project uses the Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removal from the Destruction of Ozone Depleting Substances from International Sources Version 1.0 (hereinafter referred to as “Methodology”).

## B2. METHODOLOGY JUSTIFICATION

The Project involves the destruction of ODS refrigerant CFC-12 and trace amounts of CFC-11. Thailand does not have a law requiring destruction of refrigerants under the Montreal Protocol nor is there a rule or law requiring ODS refrigerants to be destroyed or converted. Because these refrigerants have been phased out worldwide and there are less impactful substitutes, their destruction will not trigger any additional CFC refrigerant production.

## B3. PROJECT BOUNDARIES

The geographic boundary of the Project is the WMS facility, located at 965 Moo 2 Soi 3B Bangpoo Industrial Estate, Sukhumvit Rd Bangpoo Mai, Muang Samutprakarn, Samutprakarn, 10280 Thailand. The reporting period is December 14, 2024 to February 19, 2025, and the crediting period is December 14, 2024 to December 13, 2034.

## B4. IDENTIFICATION OF GHG SOURCES, SINKS, AND RESERVOIRS

Table 4: GHG Sources, Sinks and Reservoirs

GHG Source, Sink, or Reservoir (SSR)	Source Description	Gas	Quantification Method
SSR 5. Transport to Destruction Facility	Fossil fuel emissions from the vehicular transport of ODS from aggregation point to final destruction facility.	CO <sub>2</sub>	$Tr\&Dest = (Q_{ODS} \times EF)$
SSR 6. ODS Use	Emissions of ODS from use, leaks, and servicing through continued operation of equipment.	ODS	$BE_{refr} = \sum_i (Q_{ref,i} \times ER_{refr,i} \times GWP_i)$
SSR 6. ODS Use	Emissions of substitute from use, leaks, and servicing through continued operation of equipment.	CO <sub>2</sub> e	$Sub_{refr} = \sum_i (Q_{ref,i} \times SE_i)$

SSR 7. Destruction	Emissions of ODS from incomplete destruction at destruction facility.	ODS	$Tr\&Dest = (Q_{ODS} \times EF)$
SSR 7. Destruction	Emissions from the oxidation of carbon contained in destroyed ODS.	CO <sub>2</sub>	$Tr\&Dest = (Q_{ODS} \times EF)$
SSR 7. Destruction	Fossil fuel emissions from the destruction of ODS at destruction facility.	CO <sub>2</sub>	$Tr\&Dest = (Q_{ODS} \times EF)$
SSR 7. Destruction	Indirect emissions from the use of grid-delivered electricity.	CO <sub>2</sub>	$Tr\&Dest = (Q_{ODS} \times EF)$

## B5. BASELINE SCENARIO

The baseline scenario selected for the project related to ODS refrigerant, in which the following emissions rates are assumed under business-as-usual:

**Table 5: Parameters for ODS Refrigerants (source: Errata and Clarifications, Erratum Table 3)**

ODS	100 Year Global Warming Potential (MT CO <sub>2</sub> e/MT ODS)	10-Year Cumulative Emission Rate (%/10 years)	Substitute Emissions (MT CO <sub>2</sub> e/MT ODS)
CFC-11	4,663	89%	201
CFC-12	10,239	95%	812
CFC-13	13,893	61%	7,569
CFC-113	5,824	89%	219
CFC-114	8,592	78%	660
CFC-115	7,665	61%	1,868

In this Project, the CFC-12 and trace amounts of CFC-11 material were originally stored in various locations in Thailand. The material was transferred to WMS and then Tradewater, and finally destroyed at WMS, a local destruction facility. WMS was responsible for the movement of the material from the original locations to the WMS warehouse at Samutprakarn. There is no mandate to destroy the ODS refrigerant in Thailand

All ODS sat in deteriorating cylinders with no alternative use. Without particular intended or viable use, these cylinders would remain in storage, where they risked leaking or release into the atmosphere.

## B6. WITH-PROJECT SCENARIO

The project scenario is the destruction of CFC-12 and trace amounts of CFC-11 which otherwise would

remain in storage indefinitely until a management option could be financed.

The project abides with all applicable rules and regulations. The ODS will be destroyed in compliance with all relevant and applicable laws and regulations. This includes environmental and health and safety regulations that apply to the WMS facility.

## **B7. GHG EMISSION REDUCTIONS AND REMOVALS**

Through this project, greenhouse gas reductions are achieved by preventing the inevitable release of the refrigerant ODS into the atmosphere – either through leakage from degrading systems and storage, or from accidental venting during the movement of the cylinders. The reductions are calculated using the quantification approach in the Methodology.

## **B8. PERMANENCE**

There is no risk of reversal for this project type. Once the ODS is destroyed, the associated GHG emission reductions are permanent.

# C. ADDITIONALITY

## C1. BASELINE

The Project uses the performance standard and regulatory surplus test to demonstrate additionality. The offsets generated by the Project yield higher GHG emission reductions than those generated by the business-as-usual scenario.

## C2. PERFORMANCE STANDARD

Refrigerant ODS in a business-as-usual scenario are used only when the existing systems are old enough to still process this type of refrigerant. When this is not the case, ODS refrigerant is either stored in their original disposable containers or in larger containers for possible use or recovered from existing systems in the process of decommissioning or retrofitting, thereby requiring an end-of-life solution. All ODS sources for this project came from Thailand and were destroyed in a destruction facility that meets the Montreal Protocol's TEAP standards provided in the *Report of the Task Force on Destruction Technologies*.

The GWP of CFC-12 and GWP-11 are included in Table 5. The GHG emissions generated by the project are significantly less than the business-as-usual scenario for all refrigerant types, and the emissions reductions are greater than those in the baseline scenario.

The CFC ODS sourced for this project, along with the project activities, meet the eligibility requirements:

- This material would otherwise eventually be vented into the atmosphere in the business-as-usual scenario.
- The material was destroyed via an eligible destruction facility.
- Point of Origin and Chain of Custody for this material is outlined in the supporting documents.
- Tradewater has monitored the applicable SSRs within the project boundary.
- The emissions have been quantified and align with Chapter 5 of the Methodology, as indicated in section E, and as shown in the Project Assertion Spreadsheet.

## C3. REGULATORY SURPLUS TEST

In order to pass the regulatory surplus test, a project must not be mandated by existing laws, regulations, statutes, legal rulings, or other regulatory frameworks in effect as of the start date of the project that directly or indirectly affect the credited offsets.

The lack of a mandate to destroy a "national item" was confirmed in a meeting on April 5, 2022 (reference *Guidelines for the destruction of refrigerants under the supervision of the Customs Department*). Thai Customs and the department of Industrial Works affirmed that no law applicable to Thai Customs required the destruction of refrigerants listed under the Montreal Protocol.

Per the September 8, 2022 letter to WMS titled “*Handling over the refrigerants seized under the Customs Department for destruction at Bangpoo Environmental Complex Co., Ltd*” and issued by Thai Customs Enforcement Division, Customs “can handle the property in dispute under the Customs regulations and referring to the regulations in the chapter of criteria, methods and conditions for the distribution of the property in dispute B.E 2563 (2020).”

In conclusion, neither the Customs Act, nor any existing laws, regulations, statutes, legal rulings, or other regulatory frameworks in effect as of June 2025, require the destruction of the ODS refrigerant in this project. Therefore, the project passes the regulatory surplus test.

#### **C4. COMMON PRACTICE TEST**

Not applicable

#### **C5. IMPLEMENTATION BARRIERS TEST**

Not applicable

# D. GHG MONITORING PLAN

## D1. MONITORED DATA AND PARAMETERS

Table 6: Monitored Data and Parameters

<b>Data or Parameter Monitored</b>	Legal Requirement Test
<b>Unit of Measurement</b>	N/A
<b>Description</b>	Emissions reductions achieved through this project and methodology must not be required by any existing law or regulation
<b>Data Source</b>	Thailand Customs Department and The National Ozone Protection Division from the Department of Industrial Works (DIW)
<b>Measurement Methodology</b>	N/A
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	Review of existing laws around ODS refrigerant management
<b>QA/QC Procedure</b>	Regular review of current laws and regulations surrounding ODS refrigerants, particularly CFCs.
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	Mass of ODS mixture in each container
<b>Unit of Measurement</b>	Pounds
<b>Description</b>	The total quantity of ODS refrigerant in a container.
<b>Data Source</b>	Weight tickets taken pre and post destruction for each individual container
<b>Measurement Methodology</b>	Section 5.1 of Methodology
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	Gross weight of containers using calibrated scale, taken before and after destruction
<b>QA/QC Procedure</b>	Scale calibrations; CEMS data confirms destruction and weight throughout process
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	Concentration of ODS mixture in each container
<b>Unit of Measurement</b>	Percent
<b>Description</b>	The distribution of ODS refrigerant in each

	container (along with any other contaminants, moisture, or HBR)
<b>Data Source</b>	Sample data via lab analysis provided by an ISO 17025 certified third-party laboratory.
<b>Measurement Methodology</b>	Appendix B of the Methodology
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	Lab Analysis Report
<b>QA/QC Procedure</b>	Composition and concentration are analyzed at an ISO 17025-certified laboratory that is not affiliated with the project proponent using the AHRI Standard 700.
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$ER_t$
<b>Unit of Measurement</b>	MT CO <sub>2</sub> e
<b>Description</b>	Total quantity of GHG emission reductions during the reporting period
<b>Data Source</b>	Calculated using Equation 1 of the Methodology
<b>Measurement Methodology</b>	Appendix C of the Methodology
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	Calculated using Lab Analysis Report and Weight Tickets
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$PE_t$
<b>Unit of Measurement</b>	MT CO <sub>2</sub> e
<b>Description</b>	Total quantity of project emissions during the reporting period
<b>Data Source</b>	Calculated using Equation 3 of the Methodology
<b>Measurement Methodology</b>	Section 5.2 of the Methodology
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	Calculated using Lab Analysis Report and Weight Tickets
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$BE_{refr,t}$
<b>Unit of Measurement</b>	MT CO <sub>2</sub> e

<b>Description</b>	Total quantity of baseline emissions during the reporting period
<b>Data Source</b>	Calculated using Equation 2 of the Methodology
<b>Measurement Methodology</b>	Section 5.1 – Equation 2
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	Calculated using Lab Analysis Report and Weight Tickets
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$Q_{refr,i}$
<b>Unit of Measurement</b>	MT ODS
<b>Description</b>	The total weight of ODS refrigerant sent for destruction (baseline).
<b>Data Source</b>	Weight tickets taken both pre- and post-destruction coupled with lab analysis
<b>Measurement Methodology</b>	Section 5.1 of Methodology
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	Gross weight of cylinders using calibrated scale, taken before and after destruction
<b>QA/QC Procedure</b>	Scale calibrations; CEMs data confirms destruction; lab analysis confirms mass percentage and identification of ODS refrigerant
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$ER_{refr,i}$
<b>Unit of Measurement</b>	0-100%
<b>Description</b>	10-year cumulative emission rate of refrigerant ODS i
<b>Data Source</b>	Errata and Clarifications – Table 3
<b>Measurement Methodology</b>	N/A
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	N/A
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$GWP_{,i}$
<b>Unit of Measurement</b>	MTCO <sub>2</sub> e / MT ODS
<b>Description</b>	Global warming potential of ODS i
<b>Data Source</b>	Errata and Clarifications – Table 3
<b>Measurement Methodology</b>	N/A
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	N/A
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$Sub_{,refr}$
<b>Unit of Measurement</b>	MTCO <sub>2</sub> e
<b>Description</b>	Total GHG emissions from substitute refrigerant
<b>Data Source</b>	Errata and Clarifications – Table 3
<b>Measurement Methodology</b>	N/A
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	N/A
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	Tr&Dest
<b>Unit of Measurement</b>	MTCO <sub>2</sub> e
<b>Description</b>	Total GHG emissions from ODS transportation and destruction
<b>Data Source</b>	Section 5 of Methodology
<b>Measurement Methodology</b>	N/A
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	N/A
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$SE_i$
<b>Unit of Measurement</b>	MTCO <sub>2</sub> e / MT ODS destroyed

<b>Description</b>	Emission factor for substitute emissions of refrigerant i
<b>Data Source</b>	Errata and Clarifications – Table 3
<b>Measurement Methodology</b>	N/A
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	N/A
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	$Q_{ODS}$
<b>Unit of Measurement</b>	MT
<b>Description</b>	The total quantity of ODS refrigerant (including HBR, moisture, etc.) transported to the destruction facility.
<b>Data Source</b>	Weight tickets taken both pre- and post- destruction coupled with lab analysis and quantification
<b>Measurement Methodology</b>	Section 5.2 of Methodology
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	Net weight of cylinders using calibrated scale
<b>QA/QC Procedure</b>	Scale calibrations; CEMS data confirms destruction; lab analysis confirms mass percentage and identification of ODS refrigerant
<b>Notes</b>	

<b>Data or Parameter Monitored</b>	EF
<b>Unit of Measurement</b>	MTCO <sub>2e</sub> / MT ODS
<b>Description</b>	Default emission factor for transportation and destruction of ODS.
<b>Data Source</b>	Section 5 of Methodology
<b>Measurement Methodology</b>	N/A
<b>Data Uncertainty</b>	Low
<b>Monitoring Frequency</b>	Once per project
<b>Reporting Procedure</b>	N/A
<b>QA/QC Procedure</b>	Internal QA/QC procedures to review GHG emission calculations
<b>Notes</b>	

# E. GHG QUANTIFICATION

## E1. BASELINE SCENARIO

The baseline emissions are estimated to be 200,830 tCO<sub>2</sub>e.

Total Baseline Emissions:

$$BE_{refr} = \sum_i (Q_{ref,i} \times ER_{refr,i} \times GWP_i)$$

Where		Units
<i>BE<sub>refr</sub></i>	Total quantity of refrigerant project baseline emissions during the reporting period	MT CO <sub>2</sub> e
<i>Q<sub>ref,i</sub></i>	Total quantity of refrigerant ODS sent for destruction by the offset project	MT ODS
<i>ER<sub>refr,i</sub></i>	10-year cumulative emission rate of refrigerant ODS	%
<i>GWP<sub>i</sub></i>	Global warming potential of ODS	MT CO <sub>2</sub> e / MT ODS

## E2. AFOLU PROJECT INVENTORY

Not applicable

## E3. WITH-PROJECT SCENARIO

The project emissions are estimated to be 16,854 tCO<sub>2</sub>e.

Total Project Emissions

$$PE_t = Sub_{refr} + Tr\&Dest$$

Where		Units
<i>PE<sub>T</sub></i>	Total quantity of project emissions during the reporting period	MT CO <sub>2</sub> e
<i>Sub<sub>refr</sub></i>	Total GHG emissions from substitute refrigerant	MT CO <sub>2</sub> e
<i>Tr&amp;Dest</i>	Total GHG emissions from transportation and destruction of ODS	MT CO <sub>2</sub> e

For this project, Rem<sub>f</sub> is equal to zero as the Project is not involved with removal of high GWP foam.

Project Emissions from the Use of Non-ODS Refrigerants

$$Sub_{refr} = \sum_i (Q_{ref,i} \times SE_i)$$

*i*

Where		Units
<i>Sub<sub>refr</sub></i>	Total quantity of refrigerant substitute emissions	MT CO <sub>2</sub> e
<i>Q<sub>ref,i</sub></i>	Total quantity of refrigerant <i>i</i> sent for destruction	MT ODS
<i>SE<sub>i</sub></i>	Emission factor for substitute(s) for refrigerant <i>i</i> , per Table 3	MT CO <sub>2</sub> e/ MT ODS destroyed

#### Project emissions from Transportation and Destruction using the Default Emissions Factors

$$Tr\&Dest = (Q_{ODS} \times EF)$$

Where		Units
<i>Tr&amp;Dest</i>	Total GHG emissions from ODS transportation and destruction, as calculated using default emissions factors.	MT CO <sub>2</sub> e
<i>Q<sub>ODS</sub></i>	Total quantity of ODS sent for destruction in project.	MT ODS
<i>EF</i>	Default emission factor for transportation and destruction of ODS (7.5)	MT CO <sub>2</sub> e/ MT ODS

## E4. LEAKAGE

As defined by the ACR Standard V 8.0, leakage is a term that refers to secondary effects where the GHG emission reductions of a project may be negated by shifts in market activity or shifts in materials, infrastructure, or physical assets associated with the project. Projects involving the destruction of CFC refrigerant would not encourage the increase of CFC production. Therefore, for this Methodology, leakage is not applicable.

## E5. UNCERTAINTY

Calculating uncertainty is not applicable because the methodology as written does not require statistical sampling, nor is it a requirement within the quantification.

## E6. QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

### Description of GHG management system

The destruction facility, WMS, has a retention policy up to lifetime of facility for all paperwork generated. All documents are stored physically and digitally backed-up. The project proponent, Tradewater, LLC, has a retention policy of 15 years. This means that Tradewater, LLC meets the data retention requirements included in the E&Cs published on February 18, 2025, as the E&Cs require that the project proponent retain documentation at least 2 years after the end of the crediting period, which is a period of 12 years. The following documentation is retained in Tradewater's cloud system:

- All data inputs for the calculation of the offset project emission reductions, including all required sampled data;

- Copies of all regulatory permits, for project related collection, recovery, transportation, and destruction activities;
- Destruction facility monitoring and maintenance information, manufacturer guidance pertaining to facility or technology maintenance, and permits;
- Chain of custody and sourcing documentation; and
- ODS composition and mass determinations

Documents are stored in third party cloud system that is backed up on a regular basis, with hard copies saved on-site wherever possible. WMS facility monitors and registers the relevant parameters in their CEMS data system in real time and these are collected every hour. Pressure and flow rate are monitored continuously on a separate stage of the furnace for gaseous substances such as ODS and collected every half hour. Personnel on-site live monitors all incineration activities to prevent errors, exceedances, or other impacts to the project.

Calibration procedures and frequency of calibration.

The scales used to determine the mass of ODS is calibrated periodically by a third party, with a requirement by the Thai government for recalibrations every two years. The most recent calibration which was done within 3 months prior to destruction, is included in the documentation.

Internal audit and quality assurance/quality control procedures.

WMS undergoes annual procedure reviews and required readings. Qualified technicians are constantly monitoring the emissions levels during burns. The destruction facility is regulated by the Industrial Estate Authority of Thailand (IEAT). Tradewater, LLC reviews all paperwork to ensure that it satisfies protocol requirements.

## E7. GHG EMISSION REDUCTIONS AND REMOVALS

The emission reductions are 183,975 tCO<sub>2</sub>e. The project emissions are quantified using the below equation indicated in the Methodology.

$$ER_t = BE_t - PE_t$$

WHERE		UNITS
$ER_t$	Total quantity of GHG emission reductions during the reporting period	MT CO <sub>2</sub> e
$BE_t$	Total quantity of project baseline emissions during the reporting period	MT CO <sub>2</sub> e
$PE_t$	Total quantity of project emissions during the reporting period	MT CO <sub>2</sub> e

## **E8. EX ANTE CARBON CREDIT PROJECTION**

Ex-ante estimation methods are not applicable to this methodology as the emission reductions for the 10-year crediting period are equivalent to the emission reductions achieved during the reporting period.

## **E9. EX ANTE ESTIMATION METHODS**

Ex-ante estimation methods are not applicable to this methodology as the emission reductions for the 10-year crediting period are equivalent to the emission reductions achieved during the reporting period.

# F. ENVIRONMENTAL AND SOCIAL IMPACTS

## F1. ENVIRONMENTAL AND SOCIAL IMPACT SUMMARY

Tradewater is unaware of any potential negative environmental or socio-economic impacts from this Project. Thailand is part of the Montreal Protocol and has been engaged in efforts to eliminate substances that affect the ozone layer in recent years. Since there is currently no financial and logistical infrastructure to responsibly manage and destroy ODS in Thailand, the Tradewater project creates a solution to this problem.

The net positive impacts from the project include the reduction of inevitable emissions of stockpiled CFC refrigerants via leaks, testing, and accidental venting, or from container degradation. This destruction will not trigger any additional production due to the complete phase-out of CFCs worldwide. The project further encourages innovation and development of more sustainable refrigeration and cooling technologies, as well as encouraging the entire sector to develop technologies that are more responsible and aligned with climate goals. Finally, the emissions reductions resulting from this project help to achieve climate goals by eliminating additional contributors to climate change and global warming.

## F2. SUSTAINABLE DEVELOPMENT GOALS

The following Sustainable Development Goals (SDGs) are directly contributed to by this project:

SDG 12: Responsible Consumption and Production

SDG 13: Climate Action

The following SDGs are indirectly impacted by the project:

SDG 3: Good Health and Well-being

SDG 6: Clean Water and Sanitation

SDG 14: Life Below Water

SDG 15: Life On Land

The SDG Contributions Report is included under Appendix B. This report explains the SDGs and how the Project directly and indirectly impacts the above listed SDGs.

### **F3. STAKEHOLDER COMMENTS AND CONSULTATION**

The Project did not receive any comments during the public comment period on the ACR website.

## **G. OWNERSHIP AND TITLE**

### **G1. PROOF OF TITLE**

Tradewater, LLC is the Project Proponent. Tradewater, LLC possesses the title and rights to all refrigerants destroyed under this Project, which is demonstrated by the transfer of ownership documentation, signed Consolidation Report or other similar documentation. As such, the rights and title to all carbon offset credits created by this Project belong to Tradewater, LLC. Waste Management Siam LTD (WMS) had custody of the material prior to Tradewater, and WMS transferred ownership to Tradewater.

### **G2. CHAIN OF CUSTODY**

The offsets have not been bought or sold previously, and the project does not have a forward option contract.

### **G3. PRIOR APPLICATION**

The project proponent has not applied for GHG emission reductions or removal credits for the project through any other GHG emissions trading system or program.

# H. PROJECT TIMELINE

## H1. START DATE

The project start date is December 14, 2024 -- the date on which the earliest destruction activity of the project commenced. The Project start date determination is consistent with the ACR Standard and Methodology.

## H2. PROJECT TIMELINE

<b>Relevant Project Activities</b>	<b>Timeline</b>
Project Listed/Initiation of Project Activities	December 5, 2024
Project Term	N/A
Reporting Period	December 14, 2024 – February 19, 2025
Crediting Period	December 14, 2024 – December 13, 2034
Frequency of Monitoring, Reporting, and Verification	Once per reporting period

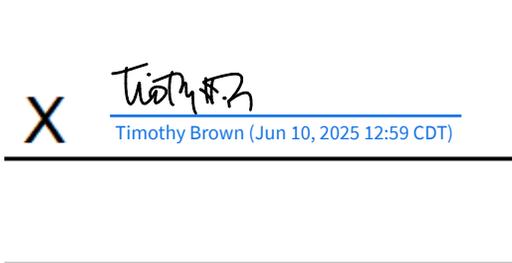
# Appendices

List all appendices referenced throughout the GHG Project Plan in the table below, omitting and providing additional rows as needed. Appendices not provided under separate cover must be included within this document. For submission of the final versions of appendices provided under separate cover, provide exact filenames including the correct version and/or date. Where relevant to the project, the appendices marked with an asterisk (\*) must be submitted on the ACR Registry, denoted as a GHG Project Plan document type, and maintained as public. All appendices are subject to validation.

Appendix	Document Title	Provided under separate cover? (Yes/No)	Filename <i>if provided under separate cover</i>
A	Environmental and Social Impact Assessment*	No	
B	SDG Contributions Report*	No	

# Attestations

The Project Proponent hereby represents and warrants to the American Carbon Registry, its affiliates and supporting organizations, and any assignee of substantially all of the assets comprising the ACR, that all information contained herein and in all appendices is true, correct, and complete to the best of their knowledge, information, and belief and they further agree to notify ACR promptly in the event that the Project Proponent becomes aware that any representation or warranty set forth above or in any appendix submitted under separate cover was not true when made.

Project Proponent Signature:	
Project Proponent Representative Signature	
Name	Timothy H. Brown
Title	Chief Executive Officer
Organization	Tradewater, LLC
Date	June 10, 2025

# Environmental and Social Impact Assessment

**INSTRUCTIONS** ACR requires all Project Proponents to prepare and disclose an environmental and social impact assessment per the *ACR Standard*, Chapter 8. To facilitate this requirement, use of this Environmental and Social Impact Assessment template is required. Follow all instructions found within each section and respond as completely and accurately as possible based on project details. If a field is not applicable, respond with “N/A.” The Environmental and Social Impact Assessment may be presented within, or as an appendix to, the GHG Project Plan. If providing as a standalone appendix, the Environmental and Social Impact Assessment must be saved as a PDF prior to uploading to the ACR Registry. Terminology as defined in the *ACR Standard* applies to this document.

THIS VERSION 1.1 OF THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT TEMPLATE IS REQUIRED IF VALIDATION ACTIVITIES COMMENCED AFTER OCTOBER 31, 2024.

## SECTION I: GHG PROJECT INFORMATION

1	Document date	June 10, 2025
2	Project title	Tradewater - Thailand 7
3	ACR project ID	ACR1108
4	Provide an overview of the project activity.  The project activity is the destruction of eligible ODS refrigerant, specifically CFC-12 and trace amounts of CFC-11, which originate from various sources in Thailand. There is no mandate to destroy or convert this material.	
5	Project location(s) City or county, state, country, and any other relevant identifiers	Samutprakarn, Thailand
6	Provide an overview of the GHG Project’s relevant stakeholders (i.e., individuals or groups that can potentially affect or be affected by the project activities and who may live within or outside the Project area).  Stakeholders as defined by the <i>ACR Standard</i> are not applicable to this Methodology.	

**SECTION II: ENVIRONMENTAL & SOCIAL RISKS AND IMPACTS**

Taking into account the scope and scale of the project activity, provide an assessment of the GHG Project’s environmental and social risks and impacts for the project duration for each of the areas below. Categorize each risk/impact as positive, negative, or neutral and substantiate the selected category, noting all defined and defensible assumptions. Responses to 3A-3C and 6C below may be based on company-wide policies, however all other answers must be direct impacts of project activities.

When the GHG Project has a positive impact, describe reasoning in 1.

When the GHG Project poses risks of negative impacts, describe reasoning in 1, how impacts will be avoided, reduced, mitigated or compensated, commensurate with the risk in 2, and detail how risks and negative impacts will be monitored, how often, and by whom in 3.

When the GHG Project has a neutral impact, describe reasoning in 1 or, at minimum, enter “N/A”

<b>1</b>	<b>BIODIVERSITY CONSERVATION AND SUSTAINABLE MANAGEMENT OF LIVING NATURAL RESOURCES</b>
<b>1A</b>	<p><b>Terrestrial and Marine Biodiversity and Ecosystems</b></p> <p><input checked="" type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input type="checkbox"/> Neutral</p> <ol style="list-style-type: none"> <li>1. Describe the reasoning for selection: There is evidence that increased UV rays as a result of deterioration of the ozone has a negative impact on aquatic ecosystems, specifically phytoplankton, and other fauna's reproduction. Therefore, the project indirectly has a net positive effect on aquatic biodiversity as the prevention of ODS entering the atmosphere allows the ozone layer to heal, and ultimately reduce harmful UV rays</li> <li>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</li> <li>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</li> </ol>
<b>1B</b>	<p><b>Habitat of Rare, Threatened, and Endangered Species, Including Areas Needed for Habitat Connectivity</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <ol style="list-style-type: none"> <li>1. Describe the reasoning for selection: There are no impacts to localized habitats that have been identified as a result of the project activity.</li> </ol>

2.	<p>If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
<b>1C</b>	<p><b>Natural Forests, Grasslands, Wetlands, or High Conservation Value Habitats</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: No impacts to natural forests, grasslands, wetlands, or high conservation value habitats have been identified as a result of the project activity.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
<b>1D</b>	<p><b>Soil Degradation and Soil Erosion</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: No impacts to soil have been identified as a result of the project activity.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
<b>1E</b>	<p><b>Water Consumption and Stress</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: Impacts to water consumption have not been identified as a result of this project activity.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p>

	<p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
2	<b>RESOURCE EFFICIENCY AND POLLUTION PREVENTION</b>
2A	<p><b>Pollutant Emissions to Air</b></p> <p><input checked="" type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: ODS kept in storage will continue to leak into the atmosphere as the containers are not designed to store the material for long periods of time. By destroying the refrigerant ODS, the negative impact to the ozone layer and the atmosphere is eliminated. Therefore, the net impact is positive.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
2B	<p><b>Pollutant Discharges to Water, Noise, and Vibration</b></p> <p><input checked="" type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: International ODS projects destroy PFAS compounds, which avoids the release of these hazardous chemicals into drinking water sources.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
2C	<p><b>Generation of Waste and Release of Hazardous Materials, Chemical Pesticides, and Fertilizers</b></p> <p><input checked="" type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: Tradewater ODS projects responsibly collect high GWP refrigerants which are considered hazardous material and hazardous waste due to their harmful environmental impacts, particularly their ability to deplete the ozone layer. Tradewater ODS projects safely destroy these high-GWP refrigerants to prevent further damage to the atmosphere.</p>

	<ol style="list-style-type: none"> <li>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</li> <li>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</li> </ol>
<b>3</b>	<b>LABOR RIGHTS AND WORKING CONDITIONS</b>
<b>3A</b>	<p><b>Safe And Healthy Working Conditions for Employees</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <ol style="list-style-type: none"> <li>1. Describe the reasoning for selection: This project activity does not impact working conditions for employees.</li> <li>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</li> <li>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</li> </ol>
<b>3B</b>	<p><b>Fair Treatment of All Employees, Avoiding Discrimination, and Ensuring Equal Opportunities</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <ol style="list-style-type: none"> <li>1. Describe the reasoning for selection: The project activity does not contribute to nor work against fair treatment of employees.</li> <li>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</li> <li>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</li> </ol>
<b>3C</b>	<p><b>Forced Labor, Child Labor, or Trafficked Persons, and Protections for Contracted Workers Employed by Third Parties</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <ol style="list-style-type: none"> <li>1. Describe the reasoning for selection: This project type and activity does not impact this item.</li> <li>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</li> </ol>

	<p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
4	<b>LAND ACQUISITION AND INVOLUNTARY RESETTLEMENT</b>
4A	<p><b>Forced Physical and/or Economic Displacement</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: This project type and activity does not impact this item.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
5	<b>RESPECT FOR HUMAN RIGHTS, STAKEHOLDER ENGAGEMENT</b>
5A	<p><b>Human Rights and Discrimination</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: This project type and activity does not impact this item.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
5B	<p><b>Abidance by the International Bill of Human Rights<sup>1</sup> and Universal Instruments Ratified by the Host Country</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: This project type and activity does not impact this item.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p>

<sup>1</sup> <https://www.ohchr.org/en/what-are-human-rights/international-bill-human-rights>

	<p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
<p><b>5C</b></p>	<p><b>Consideration and Response to Local Stakeholders' Views</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: This project type and activity does not impact this item.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
<p><b>6 GENDER EQUALITY</b></p>	
<p><b>6A</b></p>	<p><b>Equal Opportunities in the Context of Gender</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: This project type and activity does not impact this item.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
<p><b>6B</b></p>	<p><b>Violence Against Women and Girls</b></p> <p><input type="checkbox"/> Positive   <input type="checkbox"/> Negative   <input checked="" type="checkbox"/> Neutral</p> <p>1. Describe the reasoning for selection: This project type and activity does not impact this item.</p> <p>2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. If negative, detail how risks and impacts will be monitored, how often, and by whom: N/A</p>
<p><b>6C</b></p>	<p><b>Equal Pay for Equal Work</b></p>

Positive    Negative    Neutral

1. Describe the reasoning for selection:  
This project type and activity does not impact this item.
2. If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:  
N/A
3. If negative, detail how risks and impacts will be monitored, how often, and by whom:  
N/A

**SECTION III: COMMUNITY-BASED PROJECTS**

**1** Community-based projects are those in which project activities engage or otherwise impact one or more communities. A community includes groups of people who live within or adjacent to the project area, including Indigenous peoples and other local communities, as well as any groups that derive income, livelihood, or cultural values from the area.

**Is the Project a community-based Project?**  Yes    No

**2** If the project **IS** a community-based project, include a description of the community(ies), stakeholder engagement, and benefit sharing arrangements below.

**2A** **Community and Stakeholder Identification and Consultation**

1. Describe the process to identify community(ies) affected by the GHG Project:  
N/A
2. Provide detailed information regarding the community stakeholder consultation process undertaken as part of the project design and implementation, including demonstration that the consultations with Indigenous Peoples and local communities were conducted in a manner that is inclusive, culturally appropriate, and respectful of local knowledge:  
N/A
3. Provide documentation of meetings held, attendees, and meeting minutes, as well as stakeholder comments and concerns and how those were addressed. These documents can be provided as attachments with file references stated below:  
N/A

**2B** **Indigenous Peoples, Local Communities, Cultural Heritage, and Free Prior and Informed Consent**

Where the project directly or indirectly impacts Indigenous Peoples and local communities, including livelihoods, ancestral knowledge, and cultural heritage, describe the steps taken to:

	<ol style="list-style-type: none"> <li>1. Recognize, respect, and promote the protection of the rights of Indigenous Peoples and local communities in line with applicable human rights law, and the United Nations Declaration on the Rights of Indigenous Peoples and ILO Convention 169 on Indigenous and Tribal Peoples<sup>2</sup>: N/A</li> <li>2. Identify the rights-holders possibly affected (including customary rights of local rights holders): N/A</li> <li>3. Avoid eviction or any physical or economic displacement, including through access restrictions to lands, territories, or resources: N/A</li> <li>4. Preserve and protect cultural heritage consistent with Indigenous Peoples and local community(ies) protocols/rules/plans on the management of cultural heritage and/or UNESCO Cultural Heritage Conventions: N/A</li> <li>5. As applicable, provide evidence of Free, Prior and Informed Consent by describing the process that was conducted to ensure that: consent was sought sufficiently in advance of any project, plan, or action taking place; consent was independently decided upon collectively by the rights-holders without coercion, intimidation, or manipulation; and consent was based on accessible, accurate, timely, and sufficient information provided in a culturally appropriate way: N/A</li> </ol>
<p><b>2C</b></p>	<p><b>Relocation or Resettlement</b></p> <ol style="list-style-type: none"> <li>1. Was there/will there be any relocation or resettlement resulting from project design or implementation? N/A             <ol style="list-style-type: none"> <li>a. If yes, describe the circumstances: N/A</li> <li>b. If yes, was the relocation or resettlement a result of voluntary land transaction(s) between the buyer and seller? N/A</li> <li>c. If yes, did the relocation or resettlement change the land use of the affected groups or communities? N/A</li> <li>d. If yes, was relocation or resettlement involuntary (e.g., through eminent domain)? N/A</li> </ol> </li> </ol>
<p><b>2D</b></p>	<p><b>Robust Benefit Sharing</b></p>

<sup>2</sup> [https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP\\_E\\_web.pdf](https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf)

1	<p>1. Describe how a benefit sharing plan (that includes arrangements that are appropriate to the context and consistent with applicable national rules and regulations) was or will be designed and implemented: N/A</p> <p>2. Has a draft or final benefit sharing plan been shared with affected communities in a form, manner, and language understandable to them? N/A</p> <p>3. Has/will the benefit-sharing outcomes be made public (subject to legal restrictions)? N/A</p>
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<b>2E</b>	<p><b>Negative Impacts and Mitigation Measures</b></p> <p>Identify any risks or claims of negative environmental and/or social impacts other than those listed in Part II:</p> <p>1. Describe the negative impact, risk, or claim: N/A</p> <p>2. Describe how any negative impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk: N/A</p> <p>3. Detail how negative risks and impacts will be monitored, how often, and by whom: N/A</p>
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# Sustainable Development Goals (SDGs) Contribution Report

## INDUSTRIAL PROJECTS

This report, as required in the *ACR Standard v8.0*, provides a qualitative assessment of the positive impacts the project is delivering to the United Nations Sustainable Development Goals (SDGs). The identified contributions are based on the standardized *ACR SDG Contributions Reporting Tool*.

**ACR Project #:** ACR1108

**Project Name:** Tradewater - Thailand 7

1. Select the applicable ACR project type from the drop-down menu below. This will auto populate the UN SDG targets to which project implementation is likely to positively contribute, directly or indirectly, as conservatively identified in the ACR SDG Contributions Reporting Tool.
2. If your project positively contributes to any additional SDG targets (i.e., the "conditional" direct and indirect targets identified in the ACR SDG Contributions Reporting Tool), please include those in the extra rows provided for Direct and Indirect impacts.
3. Provide a description of how the project contributes to each of the SDG targets identified.
4. Where the SDG objectives of the host country are relevant and such is feasible, provide information on how the project activity is consistent with the SDG objectives of the host country.
5. Hide any unused rows, save the completed template as a PDF, and upload it to the ACR Registry with the GHG Project Plan.

**Project Type:** Destruction of Ozone Depleting Substances (ODS) from International Sources

DIRECT POSITIVE IMPACT TO SDG TARGETS	DESCRIPTION OF PROJECT'S CONTRIBUTION(S) TO SDG TARGET
<p>SDG 12: Ensure sustainable consumption and production patterns</p> <p>12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment</p>	<p>By eliminating harmful CFCs and HCFCs, entities requiring refrigerant for their operations will need to shift to a more sustainable and climate-friendly approach. Consumers will naturally move in the direction of lower impact refrigerants as old systems utilizing CFCs break down or CFC sources become harder to find.</p>
<p>SDG 13: Take urgent action to combat climate change and its impacts</p> <p>13.2 Integrate climate change measures into national policies, strategies and planning</p>	<p>By eliminating ODS refrigerants through destruction, these high GWP and ozone depleting substances will not be released into the atmosphere, whether through accidental release via maintenance or mishandling, or from storage degradation overtime. The reduction of greenhouse gas emissions is a key step to reach the goals of the Paris Agreement, namely keeping global temperature increase under 2 degrees Celsius above pre- industrial levels.</p>
INDIRECT POSITIVE IMPACT TO SDG TARGETS	DESCRIPTION OF PROJECT'S CONTRIBUTION(S) TO SDG TARGET

<p>SDG 3: Ensure healthy lives and promote well-being for all at all ages</p> <p>3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination</p>	<p>Deterioration of the ozone layer allows for a higher concentration of UV light to reach the earth’s surface. UV radiation is a known contributing factor to many human health problems, including skin cancer, eye damage, and immune system problems. Through the destruction of harmful CFCs and HCFCs, additional ozone depleting substances will never make their way into the atmosphere and damage the ozone the layer, giving the layer time to heal and protect the earth’s surface from UV radiation.</p>
<p>SDG 6: Ensure availability and sustainable management of water and sanitation for all</p> <p>6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally</p>	<p>Chlorofluorocarbons are in a category of compounds known as per- and polyfluoroalkyl substances (PFAS). PFAS are forever chemicals that have been found in the atmosphere and in drinking water resources, and they cannot be removed by existing water filtration techniques. International ODS projects destroy these PFAS compounds, which avoids the release of these hazardous chemicals into drinking water sources.</p>
<p>SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p> <p>14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution</p>	<p>Marine animals, both large and small, are affected by increased UVB radiation. UVB radiation is higher energy than other forms of UV radiation, and are known to affect the reproduction of water-dwelling animals as well as the viability of phytoplankton, a key member of aquatic food webs. Increased UVB penetration in the upper water column may result in the destabilization of aquatic water systems. By limiting the presence of harmful CFCs and HCFCs via destruction, additional ozone depleting substances will never make their way into the atmosphere and continue to damage the ozone the layer, giving the layer time to heal and protect the earth’s surface – including water systems -- from UVB radiation.</p>

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

As ACR notes in their SDG Contributions Reporting Tool, there may be co-benefits to terrestrial life with regard to ozone depleting substance management, as decreased UV radiation allows for plant life to be a more effective and higher capacity carbon sink than in the presence of high UV radiation. Again, the preservation of the ozone layer through ODS destruction will aid in the capacity for plants to store carbon.

**INFORMATION ON HOW THE PROJECT ACTIVITY IS CONSISTENT WITH THE SDG OBJECTIVES OF THE HOST COUNTRY, WHERE THE SDG OBJECTIVES ARE RELEVANT, AND SUCH IS FEASIBLE.**

Thailand is actively working towards achieving the Sustainable Development Goals by 2030. As such the project activity is aligned with the effort and spirit for working toward those goals.

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Final Audit Report

2025-06-10

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