Tradewater US – ODS – #6

November 8, 2024

Tradewater, LLC

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A. PROJECT OVERVIEW

A1. PROJECT TITLE

Tradewater US – ODS - #6 (hereinafter referred to as "Project").

A2. PROJECT TYPE

Ozone Depleting Substances

A3. NON-TECHNICAL EXECUTIVE SUMMARY OF PROJECT

Description of Project Activity

The project activity is the destruction of eligible Halon 1301 and Halon 1211 for which ownership was transferred to Tradewater for the purpose of destruction. The ODS was acquired from a single source, Wesco HMB, a halon reclaimer and distributor located in Metuchen, New Jersey, United States.

All halon material included is recovered halons from decommissioned or retired machinery and/or recycled halons which were the remaining product from recycling and equipment decommissioning operations, all sourced in the US. No halons were sourced from stockpiles or international sources. Under business-as-usual, the halons would either remain in storage until they could be sold to a user of halons, eventually vented through leakage overtime, or ultimately discharged if used in a fire suppression system. In an effort to eliminate the risk of venting and discharge, these halons were destroyed at Tredi-Seche destruction facility, an eligible TEAP-compliant destruction facility located in St. Vulbas, France.

Although this project is focused exclusively on the destruction of Halons 1301 and 1211, it should be noted that non-fire suppressant ODS, such as the CFC refrigerants R12 and R11, are extremely common contaminants in recovered halons. The destruction of halons therefore frequently results in the destruction of trace amounts of other ODS species as well.

Background Information

Halons historically have been used as fire-suppressant agents. Halon 1301 is typically used for total flooding systems, which are designed to dispel the material in its entirety in the case of a fire. Halon 1211 is more commonly found in small portable fire extinguishing units, though it is present in some larger systems.

In 1994, a halon phase out was enacted as part of the Montreal Protocol, as halons were found to be both an ozone depleting substance as well as a contributor to greenhouse gas emissions and global warming. Although the manufacture of halons has since been banned, the use of halons is still legal for older systems that have not yet been upgraded. As such, the only halons available for use are those that have been recycled or already present in these older systems. Facilities that have deployed their halons in the event of a fire, or have leaks in their systems that require patching and refilling, are the typical purchasers and users of these recycled halons.

Project Purpose and Objectives

The purpose of this project is to offset the emissions that would have been released by these fire suppressants had they been put into equipment and used instead of collected and destroyed.

A4. PROJECT ACTION

Description of Prior Physical Conditions

Prior to this project, the halons in question would have been held at the Wesco facility indefinitely until a new customer procured the reclaimed halons for use in their fire suppression system. As these halons were acquired by way of decommissioned equipment and systems, there is no ready-made customer in need of the halons. Additionally, with the ban on production and import, new equipment is made using alternative fire suppression methods. As a result, the halons would remain in Wesco's reclamation columns or in storage tanks on site without a future use. In cases in which there is a future use for reclaimed halons, those halons will be fully emitted in the case of a fire or accidental discharge event, or remain in the system to be recovered and reclaimed at another time.

Description of how the Project will Achieve GHG Reductions

The project will achieve GHG emission reductions through the destruction of the halons at Tredi-Seche in St. Vulbas, France. They will be destroyed instead of allowing them to be redeployed into equipment or systems, or held in containers at risk of eventual leakage or release. This Project measures the amount of assumed emissions if the halons were vented or deployed under business-as-usual scenario against the emissions prevented by the destruction of the same material. Plainly, destruction yields significantly lower net emissions than the business-as-usual scenario.

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

After halons are recovered from equipment or fire-suppression systems, or collected during the reclamation process, they are consolidated into half-ton cylinders. The cylinders are then destroyed at an eligible destruction facility utilizing a rotary kiln incineration process.

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 Ozone Depleting Substances and High-GWP Foam, Version 2.0." 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.

Criterion	Requirement	Proof of Project Eligibility
Location	All ODS must be obtained from sources in the United States, Canada, or their territories. All ODS must be destroyed at a RCRA permitted destruction facility in the US or TEAP	The ODS was sourced at Wesco, HMB located in New Jersey, United States and destroyed at a TEAP-compliant destruction facility in St. Vulbas, France.

	compliant destruction facilities outside of the US.	
ODS Material	Only the destruction of eligible ODS halons 1301 and 1211, and refrigerants CFC-11, CFC-12, CFC-13, CFC-113, CFC-114, CFC-115, HCFC-123 and HCFC-22 are eligible under this Methodology.	The only ODS included for crediting are eligible halons and trace refrigerants.
Stockpile Limitation	Halon 1301 originating in strategic stockpiles are not eligible. Any refrigerants obtained from a government stockpile or inventory are eligible only if they are not required to be destroyed or converted.	Halon 1301 is not sourced from a strategic stockpile. Trace refrigerants originating from a government stockpile are not required to be destroyed.
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. This reporting period is provided in the included Monitoring Report.
Crediting Periods	Project crediting period is the same as the reporting period.	The project crediting period is the same as the reporting period as indicated on the Monitoring Report.

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

Criterion	Requirement	Proof of Project Eligibility
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 halons were destroyed. The carbon credits 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 halons or 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.

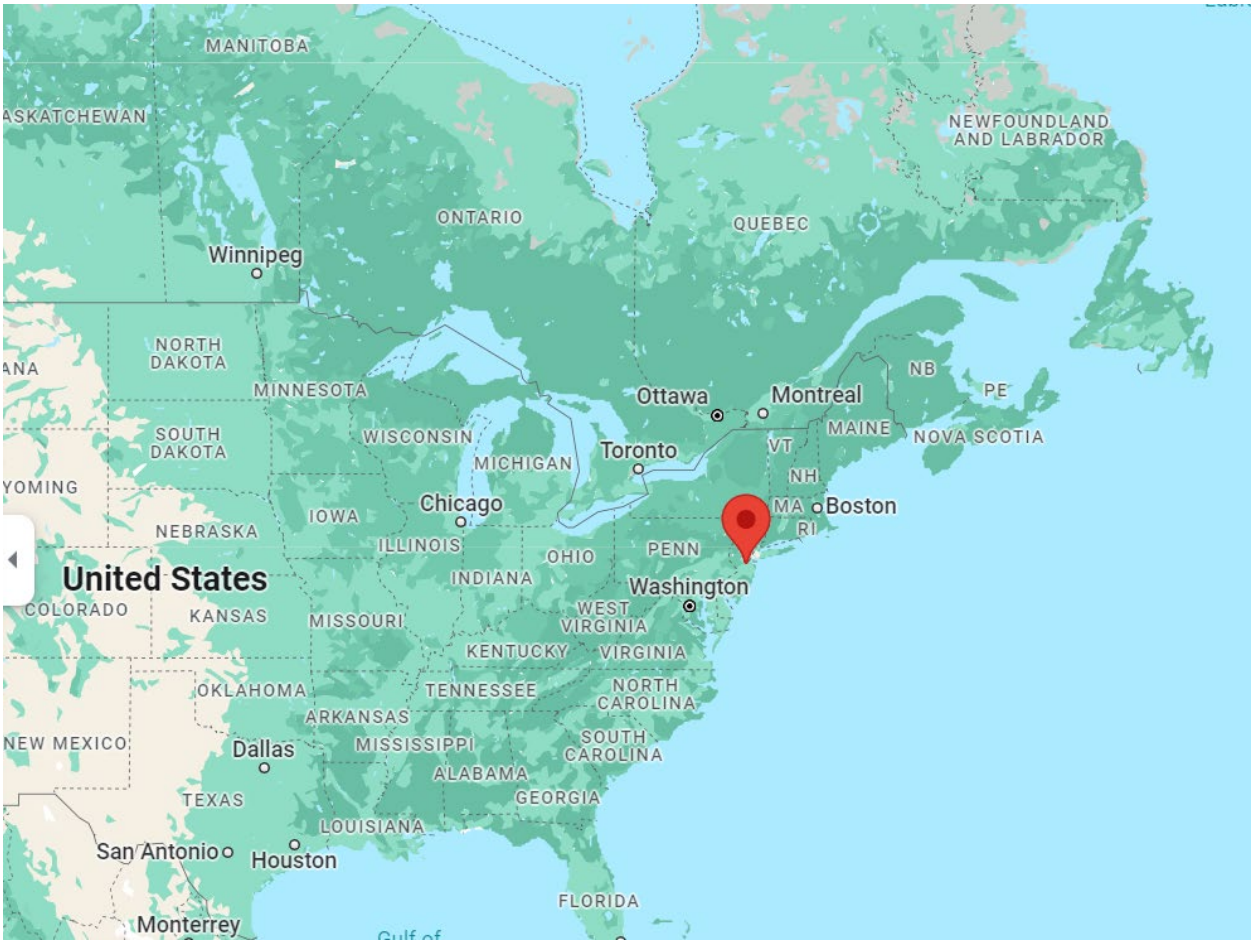
Regulatory Compliance	Adherence to all national and local laws, regulations, rules, procedures, other legally binding mandates and, where relevant, international conventions and agreements directly related to project activities.	This project maintains regulatory compliance through the entirety of the 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 ±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 an Appendix to this document.

A6. PROJECT LOCATION

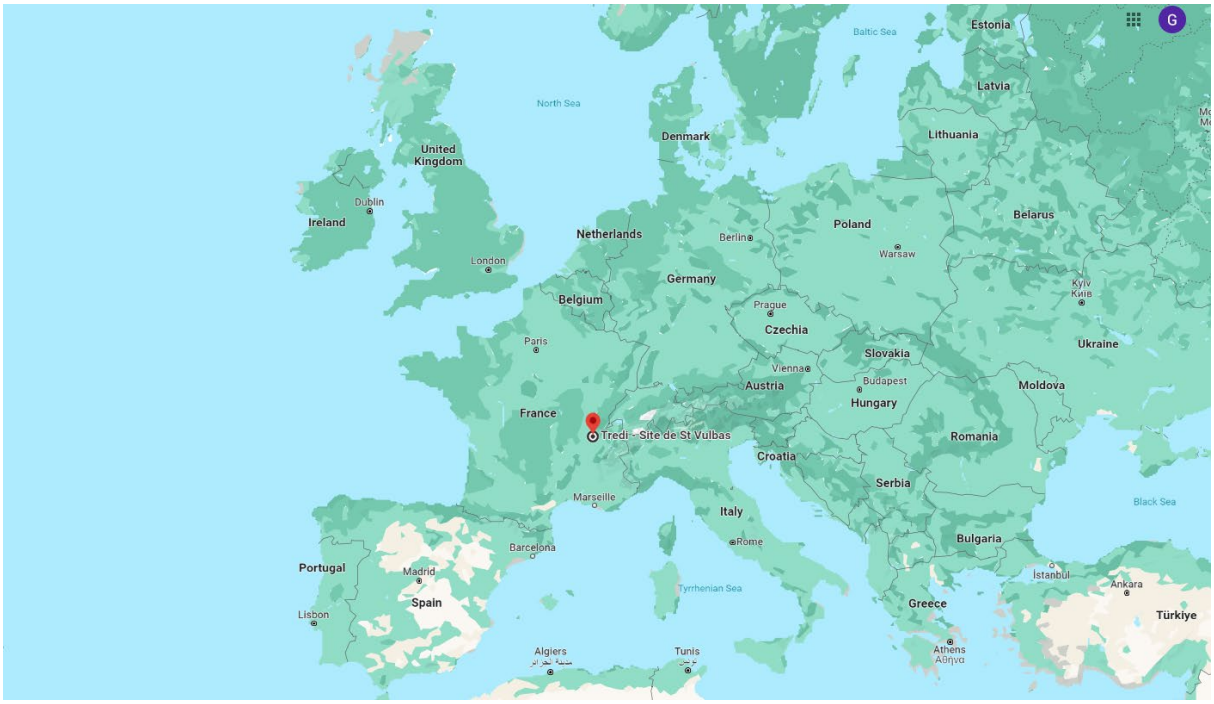
All ODS included in the project originates from operations at Wesco, HMB, located at 108 Liberty St., Metuchen, New Jersey, 08840, United States.

GPS Coordinates:
Latitude: 40.5483865
Longitude: -74.3780178



All ODS included in the project will be destroyed at Tredi-Seche, located at 5208 Rue Charles de Gaulle, Parc Industriel de la Plaine de L'ain, 01150 Saint-Vulbas, France.

GPS Coordinates:
Latitude: 45.839409
Longitude: 5.2734378



A7. REGULATORY COMPLIANCE

There are no legally binding mandates, laws (national or local), or other regulations that call for the required destruction of halons or trace amounts of ODS refrigerants within the United States. ODS is regulated under the Clean Air Act, 40 CFR Part 82, Subpart H, which addresses safe handling and transport of such chemicals. The production and import of halons was banned fully in 1994, however the export of halons for destruction is allowed.

Tradewater has followed all laws and regulations as known to the best of our knowledge in obtaining, consolidating, transporting, exporting, and destroying the halon ODS in this project.

A8. PARTIES

Table 3: Parties involved in Project				
Entity	***Name***	***Role/Title***	***Contact Info***	***Responsibility***
Tradewater, LLC	Timothy H. Brown	Chief Executive Officer	1550 W. Carroll, Suite 213 Chicago, IL 60607 312-273-5122 x 1000	Project Proponent – coordination of validation and verification of project

	Gabriel Plotkin	Chief Operating Officer	1550 W. Carroll, Suite 213 Chicago, IL 60607 312-273-5122 x 1004	Project Proponent – coordination of project implementation
	Maria Gutierrez Murray	Senior Director of International Projects	1550 W. Carroll, Suite 213 Chicago, IL 60607	Project Proponent – coordination of project implementation
Wesco	John Demeter	President	108 Liberty Street Metuchen, NJ 08840	Material Source
Tredi Séché Group	Raoul Goldbronn	Operations Manager	5208 Rue Charles de Gaulle Parc Industriel de la Plaine de L'ain, 01150 Saint-Vulbas, France 00 33 (0) 625 59 60 58	Destruction Facility

Tradewater, LLC – Project Proponent

Tradewater has been in operation since 2016 and is a mission-driven company. Tradewater's aim is to collect and destroy greenhouse gases while creating economic opportunity. Tradewater engages in this work both in the US and internationally and has a goal of eliminating 3 million tons of CO_2e reductions annually.

Wesco – Material Source

Wesco HMB is a halon reclaimer and distributor located in Metuchen, New Jersey, United States. Wesco collects and recovers halons from decommissioned equipment and systems. The halons part of this project would remain in Wesco's reclamation columns or in storage tanks on site without a future use.

Tredi Séché – Destruction Facility

Tredi is a subsidiary of Séché Environnement, a family owned and independent company, with presence in 15 countries. Tredi has been working in waste management for over 35 years, including domestic, industrial, and hazardous waste. The destruction facility is located in Saint-Vulbas, Ain and utilizes a rotary kiln incineration process for the destruction of waste.

A9. AGGREGATION AND PROGRAMMATIC DEVELOPMENT APPROACH

Not applicable to this project.

B. METHODOLOGY

B1. APPROVED METHODOLOGY

The Project will use Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances and High-GWP Foam Version 2.0 (hereinafter referred to as “Methodology”).

B2. METHODOLOGY JUSTIFICATION

The Project involves the destruction of fire suppressants Halon 1211 and Halon 1301. There is no requirement in the U.S. that halons recovered from equipment be destroyed. Because halons have been phased out worldwide and there are safer substitutes, their destruction will not trigger any additional halon production.

B3. PROJECT BOUNDARIES

The geographic boundary of the Project is the destruction facility, which is Tredi-Seche Groupe located at 5208 Rue Charles de Gaulle, Parc Industriel de la Plaine de L’ain, 01150 Saint-Vulbas, France.

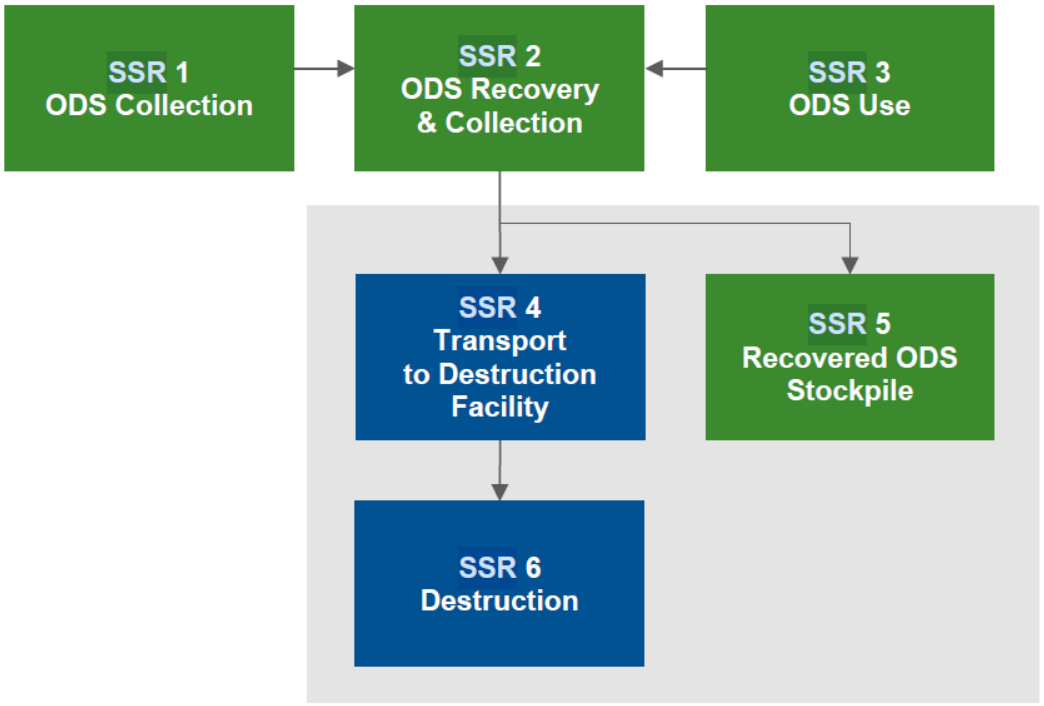
The reporting period is 08/05/2024 to 09/06/2024, and the crediting period is 08/05/2024 to 09/06/2024.

B4. IDENTIFICATION OF GHG SOURCES, SINKS, AND RESERVOIRS

The SSRs included within the Project boundaries are as follows:

Transport to destruction facility; recovered ODS stockpiles; and destruction. This is referenced in the Methodology under

Figure 1: Illustration of the Offset Project Boundary for Refrigerant, Medical Aerosol, Solvent, and Fire Suppressant ODS



Projects.

GHG Source, Sink, or Reservoir (SSR)	Source Description	Gas	Quantification Method
Transport to Destruction Facility	Fossil fuel emissions from the vehicular transport of ODS from aggregation point to final destruction facility.	CO_2	$\boldsymbol{Tr\&Dest} = (\boldsymbol{Q_{ODS}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{BA}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{intf}} \times \boldsymbol{EF})$
Destruction	Emissions of ODS from incomplete destruction at destruction facility.	ODS	$\boldsymbol{Tr\&Dest} = (\boldsymbol{Q_{ODS}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{BA}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{intf}} \times \boldsymbol{EF})$
Destruction	Emissions from the oxidation of carbon contained in destroyed ODS.	CO_2	$\boldsymbol{Tr\&Dest} = (\boldsymbol{Q_{ODS}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{BA}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{intf}} \times \boldsymbol{EF})$
Destruction	Fossil fuel emissions from the destruction of ODS at destruction facility.	CO_2	$\boldsymbol{Tr\&Dest} = (\boldsymbol{Q_{ODS}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{BA}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{intf}} \times \boldsymbol{EF})$
Destruction	Indirect emissions from the use of grid-delivered electricity.	CO_2	$\boldsymbol{Tr\&Dest} = (\boldsymbol{Q_{ODS}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{BA}} \times \boldsymbol{EF}) + (\boldsymbol{Q_{intf}} \times \boldsymbol{EF})$

Recovered ODS Stockpile	Emissions of ODS from recovered ODS stockpiles and EOL equipment (if not sent for destruction)	ODS	$$BE_{refr} = \sum_{i} (Q_{ref,i} \times GWP_{i})$$

B5. BASELINE SCENARIO

The baseline scenario selected for the project is related to fire suppressants with trace amounts of CFC refrigerants, in which the emissions rates are assumed under business-as-usual to be 100%.

Halons continue to be used in antiquated total-flooding systems (1301) some of which are designed for aviation, and small portable stream extinguishers (1211). These systems and units are overtime decommissioned or require replacement per NFPA standards. Except in the case of strategic retention, these systems are replaced with newer technologies which do not use halons.

There is no law or regulation mandating the destruction of halons, although halons have been phased out of production and import since January 1, 1994. The halons remaining in the United States are therefore recycled for further use, usually until the fire suppressant equipment has been decommissioned or the halons themselves have been deployed in a fire-suppression event, accidentally discharged, or vented due to servicing errors.

As fire-suppression systems are decommissioned or updated to utilize lower GWP fire suppression agents, there is less of a need for these halons. Excess halons without a particular use are to remain in storage, where they risk leaking. The ultimate fate of these halons is release into the atmosphere, either via deployment in a functioning system, or slowly overtime from leaks in equipment or in storage. Such use or leaks is accounted for in the emissions rates.

This project utilized recycled halons which were in storage without an intended use for an existing system. The baseline equations outlined in the Methodology and detailed in section E.1 of this document were used for both the halons and the trace amounts of CFC refrigerants as contaminants in the halon material.

B6. WITH-PROJECT SCENARIO

The project scenario is the destruction of eligible fire suppressants which would otherwise be recycled and deployed for use in equipment or fire-suppression systems or collected and held in storage containers as part of the reclamation process.

B7. GHG EMISSION REDUCTIONS AND REMOVALS

Through this project, greenhouse gas reductions are achieved by preventing the inevitable release of the halons into the atmosphere—either from intentional deployment or through leakage or venting from systems or in storage. The reductions are calculated by baseline emissions minus the project emissions.

B8. PERMANENCE

There is no risk of reversal for these project offsets, as once destroyed the associated GHG reductions are fixed.

C. ADDITIONALITY

ACR requires that every project either pass an approved performance standard + regulatory surplus test or pass a three-pronged additionality test (including a regulatory surplus test) to demonstrate that the project activity exceeds regulatory requirements, is beyond common practice, and faces at least one of three implementation barriers.

C1. BASELINE

The Methodology states under Appendix D section 4 part 2 that the destruction of halons meets additionality requirements as:

1. The intended use of the halons under business-as-usual is total deployment and venting to the atmosphere;
2. There is no requirement for halons recovered from equipment to be destroyed
3. Due to the worldwide ban on production of halons and total phaseout, no new halons will be produced as a result of the destruction.

C2. PERFORMANCE STANDARD

Halons used as fire suppressants are intended to be reserved until use and deployed in emergency situations. Deployment results in a complete venting of the material. Regular maintenance and deployment testing also results in partial venting. The Methodology assumes 100% emissions rate since business-as-usual use of the fire suppressant results in full deployment (venting) of the material.

The GWP for Halon 1211 is 1,746, and for Halon 1301 is 6,292. Elimination of the halons involved in this project eliminates any threat of venting, by regular use or through maintenance activities. As such, the GHG emissions generated by the project are significantly less than the business-as-usual scenario for both species of halon, and the emissions reductions are greater than those in the baseline scenario.

The halons sourced for this project were not from strategic stockpiles. Further, the halons and trace amounts of CFC ODS sourced for this project, along with the project activities, meet the eligibility requirements:

- This material would otherwise be vented into the atmosphere in the business-as-usual scenario
- The material was destroyed via an eligible destruction facility
- Tradewater has monitored the applicable SSRs within the project boundary

The emissions have been quantified aligned with Chapter 5 of the Methodology, as indicated in section E and shown in Appendix C.

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 that directly or indirectly affect the credited offsets. Halons are regulated under the Clean Air Act, 40 CFR Part 82, Subpart H. Neither these regulations, nor any other existing laws, regulations, statutes, legal rulings, or other regulatory frameworks in effect as of July 2024 require the project activity and its associated GHG emission reductions/removal enhancements. 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

Data or Parameter Monitored	Legal Requirement Test
Unit of Measurement	N/A
Description	Emissions reductions achieved through this project and methodology must not be required by any existing law or regulation
Data Source	US EPA
Measurement Methodology	N/A
Data Uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Review of existing laws around ODS refrigerant management
QA/QC Procedure	Regular review of current laws and regulations surrounding ODS refrigerants, particularly CFCs.
Notes	

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

Data or Parameter Monitored	Concentration of ODS mixture in each container
Unit of Measurement	Percent
Description	The distribution of ODS fire suppressant in each container (along with any other contaminants, moisture, or HBR)
Data Source	Sample data via lab analysis provided by a third party laboratory certified to ISO 9001 – ISO/IEC 17025, and uses the AHRI 700-2006 standard
Measurement Methodology	Appendix C of Methodology

Data Uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Lab analysis report
QA/QC Procedure	Composition and concentration are analyzed at a third party laboratory certified to ISO 9001 – ISO/IEC 17025, and uses the AHRI 700-2006 standard
Notes	

Data or Parameter Monitored	$Q_{fs,i}$
Unit of Measurement	MT
Description	The total quantity of fire suppressant sent for destruction by the project
Data Source	Weight tickets taken both pre- and post-destruction coupled with lab analysis
Measurement Methodology	Section 5.1 of Methodology
Data Uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Net weight of cylinders using calibrated scale
QA/QC Procedure	Scale calibrations performed monthly; CEMs data confirms destruction; lab analysis confirms mass percentage and identification of fire suppressant.
Notes	

Data or Parameter Monitored	Q_{ODS}
Unit of Measurement	MT
Description	The total quantity of refrigerant ODS and fire suppressants sent for destruction.
Data Source	Weight tickets taken both pre- and post-destruction coupled with lab analysis and quantifications
Measurement Methodology	Section 5.2 of Methodology
Data Uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Net weight of cylinders using calibrated scale; lab analysis
QA/QC Procedure	Scale calibrations performed monthly; CEMs data confirms destruction; lab analysis confirms mass percentage and identification of ODS refrigerant
Notes	

Data or Parameter Monitored	$Q_{refr,i}$
Unit of Measurement	MT
Description	The total weight of trace amounts of ODS refrigerant sent for destruction.

Data Source	Weight tickets taken both pre- and post-destruction coupled with lab analysis
Measurement Methodology	Section 5.1 of Methodology
Data Uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Net weight of cylinders using calibrated scale
QA/QC Procedure	Scale calibrations performed monthly; CEMs data confirms destruction; lab analysis confirms mass percentage and identification of ODS refrigerant
Notes	

E. GHG QUANTIFICATION

E1. BASELINE SCENARIO

The baseline emissions are: 71,140.4 tCO_2e. For details, please see Appendix C (Quantification of Emissions Reductions).

Total Baseline Emissions:

$$BE_t = BE_{refr} + BE_{foam} + BE_{aer} + BE_{fs} + BE_{sol}$$

Where		Units
BE_t	Total quantity of project baseline emissions during the reporting period	MT CO_2e
BE_{refr}	Total quantity of project baseline emissions from refrigerant ODS	MT CO_2e
BE_{foam}	Total quantity of project baseline emissions from high-GWP blowing agent	MT CO_2e
BE_{aer}	Total quantity of project baseline emissions from medical aerosol ODS	MT CO_2e
BE_{fs}	Total quantity of project baseline emissions from fire suppressant ODS	MT CO_2e
BE_{sol}	Total quantity of project baseline emissions from solvent ODS	MT CO_2e

Baseline Emissions for (trace amounts of) Refrigerant ODS:

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

Where		Units
BE_{refr}	Total quantity of refrigerant project baseline emissions during the reporting period	MT CO_2e
$Q_{ref,i}$	Total quantity of refrigerant ODS sent for destruction by the offset project	
GWP_i	Global warming potential of ODS	MT CO_2e / MT ODS

Baseline Emissions for Fire Suppressant ODS:

$$BE_{fs} = \sum_i Q_{fs} \times GWP_i$$

Where		Units
BE_{fs}	Total quantity of fire suppressant project baseline emissions during the reporting period	MT CO_2e
Q_{fs}	Total quantity of fire suppressant ODS sent for destruction by the project	MT ODS
GWP_i	Global warming potential of ODS	MT CO_2e / MT ODS

E2. AFOLU PROJECT INVENTORY

Not applicable.

E3. WITH-PROJECT SCENARIO

Detail the GHG quantification methodology for the with-project scenario including all relevant GHG emissions, emission reductions, and removals. Provide calculation steps where relevant.

The project emissions are: 102.8 tCO_2e. Please see Appendix C for details (Quantification of Emissions Reductions).

Total Project Emissions:

$$\boldsymbol{PE_t = Rem_f + Tr\&Dest}$$

Where		Units
$\boldsymbol{PE_t}$	Total quantity of project emissions during the reporting period	MT CO_2e
$\boldsymbol{Rem_f}$	Total GHG emissions from removal of high GWP foam in a non-enclosed equipment de-manufacturing system	MT CO_2e
$\boldsymbol{Tr\&Dest}$	Total GHG emissions from transportation and destruction of ODS and high-GWP insulation foam/blowing agents	MT CO_2e

Project Emissions from Transportation and Destruction Using the Default Emission Factors:

$$\boldsymbol{Tr\&Dest = (Q_{ODS} \times EF) + (Q_{BA} \times EF) + (Q_{intf} \times EF)}$$

Where		Units
$\boldsymbol{Tr\&Dest}$	Total GHG emissions from ODS and high-GWP insulation foam/blowing agent transportation and destruction, as calculated using default emission factors	MT CO_2e
$\boldsymbol{Q_{ODS}}$	Total quantity of refrigerant, medical aerosol, and/or fire suppressant ODS sent for destruction in the project	MT ODS
$\boldsymbol{Q_{BA}}$	Total quantity of high-GWP blowing agent extracted from insulation foam and sent for destruction in the project	MT BA
$\boldsymbol{Q_{intf}}$	Total mass of intact foam with entrained high-GWP blowing agent sent for destruction	MT
$\boldsymbol{EF}$	Default emission factor for transportation and destruction of ODS or High-GWP Blowing Agent foam (7.5 for refrigerant, medical aerosol, fire suppressant or extracted blowing agent projects, 7.5 for intact high-GWP foam projects)	MT CO_2e/ MT ODS/ MT BA or MT

E4. LEAKAGE

Not applicable.

E5. UNCERTAINTY

Not applicable.

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

QA/QC is performed at multiple stages from halon collection and aggregation through destruction. Hard copy paperwork including bills of lading, source data, and supplementary documentation are checked by multiple parties to ensure consistency and accuracy against digital entries in Tradewater's electronic database. Container weights are checked at each stage (acquisition, delivery to warehouse, during consolidation and during filling) for accuracy and those numbers are then reviewed by a second and third party for accuracy. All this is done to ensure that data is accurate and precise at every stage and ensures the ultimate offset calculation is low risk.

Tradewater ensures due diligence efforts are performed on the destruction facility by conducting compliance research prior to destruction.

E7. GHG EMISSION REDUCTIONS AND REMOVALS

The emissions reductions are: 71,037 tCO_2e. The project emissions are quantified using the below equation indicated in the Methodology, and further details are available in Appendix C:

$$\mathbf{ER_t = BE_t - PE_t}$$

WHERE		UNITS
ER_t	Total quantity of GHG emission reductions during the reporting period	MT CO_2e
BE_t	Total quantity of project baseline emissions during the reporting period	MT CO_2e
PE_t	Total quantity of project emissions during the reporting period	MT CO_2e

E8. *EX ANTE* CARBON CREDIT PROJECTION

The total GHG emission reduction for the year of 2024 is estimated to be 71,030 tCO2e. The crediting period is the same as the reporting period.

E9. *EX ANTE* ESTIMATION METHODS

Ex-ante estimation methods are not applicable to this methodology as the emissions reductions for the crediting period are equivalent to the time and reductions of the reporting period.

F. ENVIRONMENTAL AND SOCIAL IMPACTS

F1. ENVIRONMENTAL AND SOCIAL IMPACT SUMMARY

Environmental and social impacts were assessed via ACR's Environmental and Social Impact Assessment and independently prior to work on the project. Negative impacts were considered but none were identified.

Positive impacts include conservation of terrestrial and marine biodiversity and ecosystems (item 1A of the Assessment), prevention of air pollution (item 2A of the Assessment) and the release of hazardous materials (item 2C of the Assessment). Additional details can be found in the Assessment, Appendix A. All other environmental impacts are considered neutral.

Social impacts, such as labor rights, involuntary resettlement, and respect for human rights, are not applicable to this project type and the project does not directly or indirectly affect these topics.

F2. SUSTAINABLE DEVELOPMENT GOALS

The following Sustainable Development Goals (SDGs) are relevant to this project as direct impacts:

- SDG 9.4: Industry, Innovation, and Infrastructure
- SDG 12.4: Responsible Consumption and Production
- SDG 13.2: Climate Action

SDG 9.4: Industry, Innovation, and Infrastructure: As ODS refrigerants and fire suppressants are either destroyed or utilized, innovation is required to replace the ODS with a less harmful, yet equally as effective, alternative to support the needs for cooling and refrigeration and fire suppression throughout the world. Directly related to this is the upgrading, retrofitting, and re-imagining within HVAC and fire suppression technologies globally so systems are compatible with newer, more sustainable refrigerant and fire suppressant options.

SDG 12.4: Responsible Consumption and Production: By eliminating harmful CFCs, HCFCs, and halons, 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 and fire suppressants as old systems utilizing CFCs and halons break down or CFC and halon sources become harder to find.

SDG 13.2: Climate Action: By eliminating ODS through destruction, these high GWP and ozone depleting substances will not be released into the atmosphere, whether through accidental (or purposeful, in the case of halons) 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.

The following SDGs are indirectly impacted by the project:

SDG 3.9: Good Health: 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, HCFCs, and halons, 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.

SDG 14.1: Life Below Water: 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, HCFCs, and halons 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.

SDG 15.1: Life on Land: 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.

The full report is included under Appendix B.

F3. STAKEHOLDER COMMENTS AND CONSULTATION

There were no comments received for this project.

G. OWNERSHIP AND TITLE

G1. PROOF OF TITLE

Tradewater, LLC is the Project Proponent. Tradewater possesses the title and rights to all halon and trace refrigerants destroyed under this Project, which is demonstrated by Riders, Refrigerant Purchase Agreements (RPAs), Transfer of Ownership documents, or other similar documentation. Through the purchase of ODS, total ownership, including environmental attributes, is transferred to Tradewater. As such, the rights and title to all carbon offset credits created by this Project belong to Tradewater, LLC.

G2. CHAIN OF CUSTODY

Chain of custody is not needed in this project because 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 August 5, 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

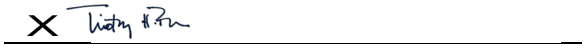
Relevant Project Activities	Timeline
Project Listed/Initiation of Project Activities	May 26, 2023
Project Term	N/A
Crediting Period	August 5, 2024 – September 6, 2024
Reporting Period	August 5, 2024 – September 6, 2024

Appendices

Appendix	Document Title	Provided under separate cover? (Yes/No)	Filename *if provided under separate cover*
A	Environmental and Social Impact Assessment*	Yes	ACR889_Environmental_and_Social_Impact_Report_V.1
B	SDG Contributions Report*	Yes	ACR889_SDG_Report_V1
C	Quantification of Emissions Reductions	No	N/A

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:	November 8, 2024

Environmental and Social Impact Assessment

VERSION 1.0

2023-07-01

Chapter 8 of the *ACR Standard v8.0* requires all Project Proponents to prepare and disclose an environmental and social impact assessment. The use of this template, provided within or as an appendix to the GHG Project Plan, is required. Please respond to the questions below as completely and accurately as possible based on project details.

SECTION I: GENERAL PROJECT DETAILS		
1	**Project Title**	Tradewater US – ODS – #6
2	**ACR Project ID**	ACR889
3	**Provide an overview of the project activity.** The project activity is the destruction of eligible ODS halons with trace amounts of refrigerant, for which ownership was transferred to Tradewater for the purpose of destruction at an eligible destruction facility located in France.	
4	**Provide the GHG Project's geographic location.** Saint Vulbas, France	
5	**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).** N/A	

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.

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

1 BIODIVERSITY CONSERVATION AND SUSTAINABLE MANAGEMENT OF LIVING NATURAL RESOURCES

1A Terrestrial and Marine Biodiversity and Ecosystems

☒Positive ☐Negative ☐Neutral

1. **Describe the reasoning for selection:**
   There is evidence that increased UV rays as a result of deterioration of the ozone has an impact on aquatic ecosystems, specifically phytoplankton and other fauna's reproduction. Therefore, the project indirectly has a 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.
2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

1B Habitat of Rare, Threatened, and Endangered Species, Including Areas Needed for Habitat Connectivity

☐Positive ☐Negative ☒Neutral

1. **Describe the reasoning for selection:**
   No impacts to localized habitats have been identified resulting from the project activity.
2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

1C **Natural Forests, Grasslands, Wetlands, or High Conservation Value Habitats**

☐Positive ☐Negative ☒Neutral

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.
2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

1D **Soil Degradation and Soil Erosion**

☐Positive ☐Negative ☒Neutral

1. **Describe the reasoning for selection:**
   No impacts to soil have been identified as a result of the project activity.
2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

1E **Water Consumption and Stress**

☐Positive ☐Negative ☒Neutral

1. **Describe the reasoning for selection:**
   Impacts to water consumption have not been identified as a result of this project activity.
2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

2 RESOURCE EFFICIENCY AND POLLUTION PREVENTION

2A Pollutant Emissions to Air

☒Positive ☐Negative ☐Neutral

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, and in the case of halons, the units are designed for total deployment. By destroying the ODS, the negative impact to the ozone layer and the atmosphere is eliminated. Therefore, the net impact is positive.
2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

2B Pollutant Discharges to Water, Noise, and Vibration

☐Positive ☐Negative ☒Neutral

1. **Describe the reasoning for selection:**
   No impacts to pollutant discharges to water, noise, or vibration have been identified.
2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

2C **Generation of Waste and Release of Hazardous Materials, Chemical Pesticides, and Fertilizers**

☒Positive ☐Negative ☐Neutral

1. **Describe the reasoning for selection:**
   ODS destruction directly removes the threat of the release of hazardous materials, the ODS itself. Therefore, the destruction has a positive impact on the issue of generation of waste and release of hazardous materials.
2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

3 LABOR RIGHTS AND WORKING CONDITIONS

3A **Safe And Healthy Working Conditions for Employees**

☐Positive ☐Negative ☒Neutral

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

3B **Fair Treatment of All Employees, Avoiding Discrimination, and Ensuring Equal Opportunities**

☐Positive ☐Negative ☒Neutral

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

3C **Forced Labor, Child Labor, or Trafficked Persons, and Protections for Contracted Workers Employed by Third Parties**

☐Positive ☐Negative ☒Neutral

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

4 LAND ACQUISITION AND INVOLUNTARY RESETTLEMENT

4A Forced Physical and/or Economic Displacement

☐Positive ☐Negative ☒Neutral

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

5 RESPECT FOR HUMAN RIGHTS, STAKEHOLDER ENGAGEMENT

5A Human Rights and Discrimination

☐Positive ☐Negative ☒Neutral

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

5B Abidance by the International Bill Of Human Rights[1] and Universal Instruments Ratified by the Host Country

☐Positive ☐Negative ☒Neutral

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

[1] https://www.ohchr.org/en/what-are-human-rights/international-bill-human-rights

5C **Consideration and Response to Local Stakeholders' Views**

☐Positive ☐Negative ☒Neutral

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

6 GENDER EQUALITY

6A **Equal Opportunities in the Context of Gender**

☐Positive ☐Negative ☒Neutral

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

6B **Violence Against Women and Girls**

☐Positive ☐Negative ☒Neutral

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

6C	**Equal Pay for Equal Work** ☐Positive ☐Negative ☒Neutral 1. **Describe the reasoning for selection:** The project activity does not impact this item. 2. **If negative, describe how adverse impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:** 3. **If negative, detail how risks and impacts will be monitored, how often, and by whom:**

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:** 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:** 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:**

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:

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[2]:**
2. **Identify the rights-holders possibly affected (including customary rights of local rights holders):**
3. **Avoid eviction or any physical or economic displacement, including through access restrictions to lands, territories, or resources:**
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:**
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:**

[2] https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

2C **Relocation or Resettlement**

1. **Was there/will there be any relocation or resettlement resulting from project design or implementation?**
   - **a. If yes, describe the circumstances:**
   - **b. If yes, was the relocation or resettlement a result of voluntary land transaction(s) between the buyer and seller?**
   - **c. If yes, did the relocation or resettlement change the land use of the affected groups or communities?**
   - **d. If yes, was relocation or resettlement involuntary (e.g., through eminent domain)?**

2D **Robust Benefit Sharing**

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:**
2. **Has a draft or final benefit sharing plan been shared with affected communities in a form, manner, and language understandable to them?**
3. **Has/will the benefit-sharing outcomes be made public (subject to legal restrictions)?**
4.

2E **Negative Impacts and Mitigation Measures**

Identify any risks or claims of negative environmental and/or social impacts other than those listed in Part II:

1. **Describe the negative impact, risk, or claim:**
2. **Describe how any negative impacts will be avoided, reduced, mitigated, or compensated commensurate with the risk:**
3. **Detail how negative risks and impacts will be monitored, how often, and by whom:**

SECTION IV: PREPARER INFORMATION	
Name	Timothy H. Brown
Title	Chief Executive Officer
Organization	Tradewater, LLC
Date	11/08/2024

Sustainable Development Goals (SDGs) Contribution Report

INDUSTRIAL PROJECTS

VERSION 1.0

2023-07-19

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 #:	ACR889
Project Name:	Tradewater US – ODS – #6

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, as conservatively identified in the ACR SDG Contributions Reporting Tool.
2. If your project positively contributes to any additional SDG targets, such as the "conditional" targets identified in the ACR SDG Contributions Reporting Tool, please include those in the extra rows provided.
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) and High-Global Warming Potential (GWP) Foam

DIRECT POSITIVE IMPACT TO SDG TARGETS	DESCRIPTION OF PROJECT'S CONTRIBUTION(S) TO SDG TARGET
SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.	As ODS is either destroyed or utilized, innovation is required to replace the ODS with a less harmful, yet equally as effective, alternative to support the needs for cooling, refrigeration, and fire suppression throughout the world. Directly related to this is the upgrading, retrofitting, and re-imagining within HVAC and fire fighting technologies globally so systems are compatible with newer, more sustainable options.
SDG 12: Ensure sustainable consumption and production patterns 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	By eliminating harmful CFCs, HCFCs, and Halons, entities requiring refrigerant or fire suppression 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 and fire suppressants as old systems utilizing ODS break down or ODS sources become harder to find.

SDG 13: Take urgent action to combat climate change and its impacts 13.2 Integrate climate change measures into national policies, strategies and planning	By eliminating ODS refrigerants and halons through destruction, these high GWP and ozone depleting substances will not be released into the atmosphere, whether through accidental release via maintenance or mishandling, storage degradation, or intentional deployment. 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.

INDIRECT POSITIVE IMPACT TO SDG TARGETS	DESCRIPTION OF PROJECT'S CONTRIBUTION(S) TO SDG TARGET
SDG 3: Ensure healthy lives and promote well-being for all at all ages 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	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 halons and CFCs, 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.

SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development 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	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 halons, CFCs, and HCFCs via destruction, additional ODS 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.
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.	France, the location of the destruction facility, has already committed to the SDGs laid out by the 2030 Agenda for Sustainable Development, and as such the project activity is aligned with the effort and spirit for working toward those goals.

Appendix C

Batch	Sample	Parameter	Gross quantity of refrigerant ODS sent for destruction	Total eligible refrigerant ODS sent for destruction	Baseline Emissions of refrigeran	Total mass of project baseline
		Symbol	Q_{Gref}	Q_{Eref}	BE_{ODS}	BE
		Unit	tODS	tODS	tCO_2e	tCO_2e
		Parameter Type	Calculated	Calculated	Calculated	Calculated
		Equation	$Q_{Gref}=(m_{ref\_start}-m_{ref\_end})*X$	$Q_{eref}=Q_{Gref}-(Q_{Gref}*q)-(Q_{Gref}*HBR)$	$BE_{ODS}=Q_{erefr}*GWP$	$BE=\Sigma BE_{ODS}$
		Source	N/A	N/A	ACR Methodology	ACR Methodology
Batch 1	Sample 1	CFC-11	0	0	0	0
		CFC-12	0	0	0	0
		CFC-13	0	0	0	0
		CFC-113	0	0	0	0
		CFC-114	0	0	0	0
		CFC-115	0	0	0	0
		HCFC-22	0	0	0	0
		HCFC-123	0	0	0	0
		Halon 1211	0.0113339	0.011328006	19.7787	19.7787
		Halon 1301	0.9916661	0.991150434	6236.319	6236.319
Batch 2	Sample 1	CFC-11	0	0	0	0
		CFC-12	0	0	0	0
		CFC-13	0	0	0	0
		CFC-113	0	0	0	0
		CFC-114	0	0	0	0
		CFC-115	0	0	0	0
		HCFC-22	0	0	0	0
		HCFC-123	0	0	0	0
		Halon 1211	0.0074459	0.007442028	12.99378	12.99378
		Halon 1301	0.9561696	0.955672392	6013.091	6013.091
Batch 3	Sample 1	CFC-11	0	0	0	0
		CFC-12	0	0	0	0
		CFC-13	0	0	0	0
		CFC-113	0	0	0	0
		CFC-114	0	0	0	0
		CFC-115	0	0	0	0
		HCFC-22	0	0	0	0
		HCFC-123	0	0	0	0
		Halon 1211	0.0059472	0.005944107	10.37841	10.37841
		Halon 1301	0.8199702	0.819543815	5156.57	5156.57
Batch 4	Sample 1	CFC-11	0	0	0	0
		CFC-12	0	0	0	0
		CFC-13	0	0	0	0
		CFC-113	0	0	0	0
		CFC-114	0	0	0	0
		CFC-115	0	0	0	0
		HCFC-22	0	0	0	0
		HCFC-123	0	0	0	0
		Halon 1211	0.0150024	0.014994599	26.18057	26.18057
		Halon 1301	0.8589767	0.858530032	5401.871	5401.871
Batch 5	Sample 1	CFC-11	0	0	0	0
		CFC-12	0	0	0	0
		CFC-13	0	0	0	0
		CFC-113	0	0	0	0
		CFC-114	0	0	0	0
		CFC-115	0	0	0	0
		HCFC-22	0	0	0	0
		HCFC-123	0	0	0	0
		Halon 1211	0.0161568	0.016148398	28.1951	28.1951
		Halon 1301	0.901476	0.901007232	5669.138	5669.138
		CFC-11	0	0	0	0
		CFC-12	0	0	0	0
		CFC-13	0	0	0	0
		CFC-113	0	0	0	0
		CFC-114	0	0	0	0
		CFC-115	0	0	0	0
		HCFC-22	0	0	0	0
		HCFC-123	0	0	0	0
		Halon 1211	0.022491	0.022479305	39.24887	39.24887

Batch	Sample	Parameter	Total GHG emissions from	Total mass of project emissions
		Symbol	Tr+Dest	PE
		Unit	tCO_2e	tCO_2e
		Parameter	Calculated	Calculated
		Equation	$Tr+Dest=\Sigma Q_{TotalODS}*EF_{T\&D}$	PE = Tr+Dest + Sub
		Source	ACR Methodology	ACR Methodology
Batch 1	Sample 1	CFC-11		
		CFC-12		
		CFC-13		
		CFC-113		
		CFC-114		
		CFC-115		
		HCFC-22		
		HCFC-123		
		Halon 121		
		Halon 130	7.5225	7.5225
Batch 2	Sample 1	CFC-11		
		CFC-12		
		CFC-13		
		CFC-113		
		CFC-114		
		CFC-115		
		HCFC-22		
		HCFC-123		
		Halon 121		
		Halon 130	7.2525	7.2525
Batch 3	Sample 1	CFC-11		
		CFC-12		
		CFC-13		
		CFC-113		
		CFC-114		
		CFC-115		
		HCFC-22		
		HCFC-123		
		Halon 121		
		Halon 130	6.195	6.195
Batch 4	Sample 1	CFC-11		
		CFC-12		
		CFC-13		
		CFC-113		
		CFC-114		
		CFC-115		
		HCFC-22		
		HCFC-123		
		Halon 121		
		Halon 130	6.6975	6.6975
Batch 5	Sample 1	CFC-11		
		CFC-12		
		CFC-13		
		CFC-113		
		CFC-114		
		CFC-115		
		HCFC-22		
		HCFC-123		
		Halon 121		
		Halon 130	6.885	6.885
		CFC-11		
		CFC-12		
		CFC-13		
		CFC-113		
		CFC-114		
		CFC-115		
		HCFC-22		
		HCFC-123		
		Halon 121		

Batch 6	Sample 1	**Halon 1301**	0.8091762	0.808755428	5088.689	5088.689	Batch 6	Sample 1	**Halon 130**	6.2475	6.2475
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.0195264	0.019516246	34.07537	34.07537			**Halon 121**		
Batch 7	Sample 1	**Halon 1301**	0.8438688	0.843429988	5306.861	5306.861	Batch 7	Sample 1	**Halon 130**	6.48	6.48
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.0006104	0.000610058	1.065162	1.065162			**Halon 121**		
Batch 8	Sample 1	**Halon 1301**	0.8713896	0.870901622	5479.713	5479.713	Batch 8	Sample 1	**Halon 130**	6.54	6.54
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.011124	0.011118104	19.41221	19.41221			**Halon 121**		
Batch 9	Sample 1	**Halon 1301**	0.52866	0.52837981	3324.566	3324.566	Batch 9	Sample 1	**Halon 130**	4.05	4.05
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.0097328	0.009727544	16.98429	16.98429			**Halon 121**		
Batch 10	Sample 1	**Halon 1301**	0.8589196	0.858455783	5401.404	5401.404	Batch 10	Sample 1	**Halon 130**	6.5175	6.5175
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.01131	0.011303553	19.736	19.736			**Halon 121**		
Batch 11	Sample 1	**Halon 1301**	0.963495	0.962945808	6058.855	6058.855	Batch 11	Sample 1	**Halon 130**	7.3125	7.3125
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.0046389	0.004636488	8.095308	8.095308			**Halon 121**		
Batch 12	Sample 1	**Halon 1301**	0.9823611	0.981850272	6177.802	6177.802	Batch 12	Sample 1	**Halon 130**	7.4025	7.4025
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.4329439	0.432701451	755.4967	755.4967			**Halon 121**		
Batch 13	Sample 1	**Halon 1301**	0.0009303	0.000929779	5.85017	5.85017	Batch 13	Sample 1	**Halon 130**	3.3225	3.3225
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		

		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.460271	0.460031659	803.2153	803.2153			**Halon 121**		
Batch 14	Sample 1	**Halon 1301**	0.005452	0.005449165	34.28615	34.28615	Batch 14	Sample 1	**Halon 130**	3.525	3.525
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0.0307216	0.030698252	2.425162	2.425162			**HCFC-123**		
		Halon 1211	0.3887464	0.388450953	678.2354	678.2354			**Halon 121**		
Batch 15	Sample 2	**Halon 1301**	0.0000422	4.21679E-05	0.265321	0.265321	Batch 15	Sample 1	**Halon 130**	3.165	3.165
		CFC-11	0.0121882	0.012168089	56.7398	56.7398			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0.0011043	0.001102478	0.087096	0.087096			**HCFC-123**		
		Halon 1211	0.3931717	0.392522967	685.3451	685.3451			**Halon 121**		
Batch 16	Sample 2	**Halon 1301**	0.0000409	4.08325E-05	0.256918	0.256918	Batch 16	Sample 1	**Halon 130**	3.0675	3.0675
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.4053088	0.405081827	707.2729	707.2729			**Halon 121**		
Batch 17	Sample 1	**Halon 1301**	0.0044512	0.004448707	27.99127	27.99127	Batch 17	Sample 1	**Halon 130**	3.12	3.12
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.5062941	0.506025764	883.521	883.521			**Halon 121**		
Batch 18	Sample 1	**Halon 1301**	0.0098059	0.009800703	61.66602	61.66602	Batch 18	Sample 1	**Halon 130**	3.87075	3.87075
		CFC-11	0	0	0	0			**CFC-11**		
		CFC-12	0	0	0	0			**CFC-12**		
		CFC-13	0	0	0	0			**CFC-13**		
		CFC-113	0	0	0	0			**CFC-113**		
		CFC-114	0	0	0	0			**CFC-114**		
		CFC-115	0	0	0	0			**CFC-115**		
		HCFC-22	0	0	0	0			**HCFC-22**		
		HCFC-123	0	0	0	0			**HCFC-123**		
		Halon 1211	0.4720004	0.47175496	823.6842	823.6842			**Halon 121**		
Batch 19	Sample 1	**Halon 1301**	0.0100322	0.010026983	63.08978	63.08978	Batch 19	Sample 1	**Halon 130**	3.6525	3.6525

Batch	Total mass of emission reductions	Total mass of project baseline emissions	Total mass of project emissions
Unit	tCO_2e	tCO_2e	tCO_2e
Batch 1	6248.575	6256.097	7.5225
Batch 2	6018.832	6026.084	7.2525
Batch 3	5160.753	5166.948	6.195
Batch 4	5421.354	5428.052	6.6975
Batch 5	5690.448	5697.333	6.885
Batch 6	5121.691	5127.938	6.2475
Batch 7	5334.457	5340.937	6.48
Batch 8	5474.238	5480.778	6.54
Batch 9	3339.928	3343.978	4.05
Batch 10	5411.871	5418.388	6.5175
Batch 11	6071.279	6078.591	7.3125
Batch 12	6178.495	6185.897	7.4025
Batch 13	758.0244	761.3469	3.3225
Batch 14	833.9764	837.5014	3.525
Batch 15	677.7608	680.9258	3.165
Batch 16	739.3614	742.4289	3.0675
Batch 17	732.1441	735.2641	3.12
Batch 18	941.3163	945.187	3.87075
Batch 19	883.1214	886.7739	3.6525
Total	71037.62	71140.45	102.8258

TWUSODS6_GHGPlan_v2.1_11082024

Final Audit Report 2024-11-08

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