



Validation/Verification Report

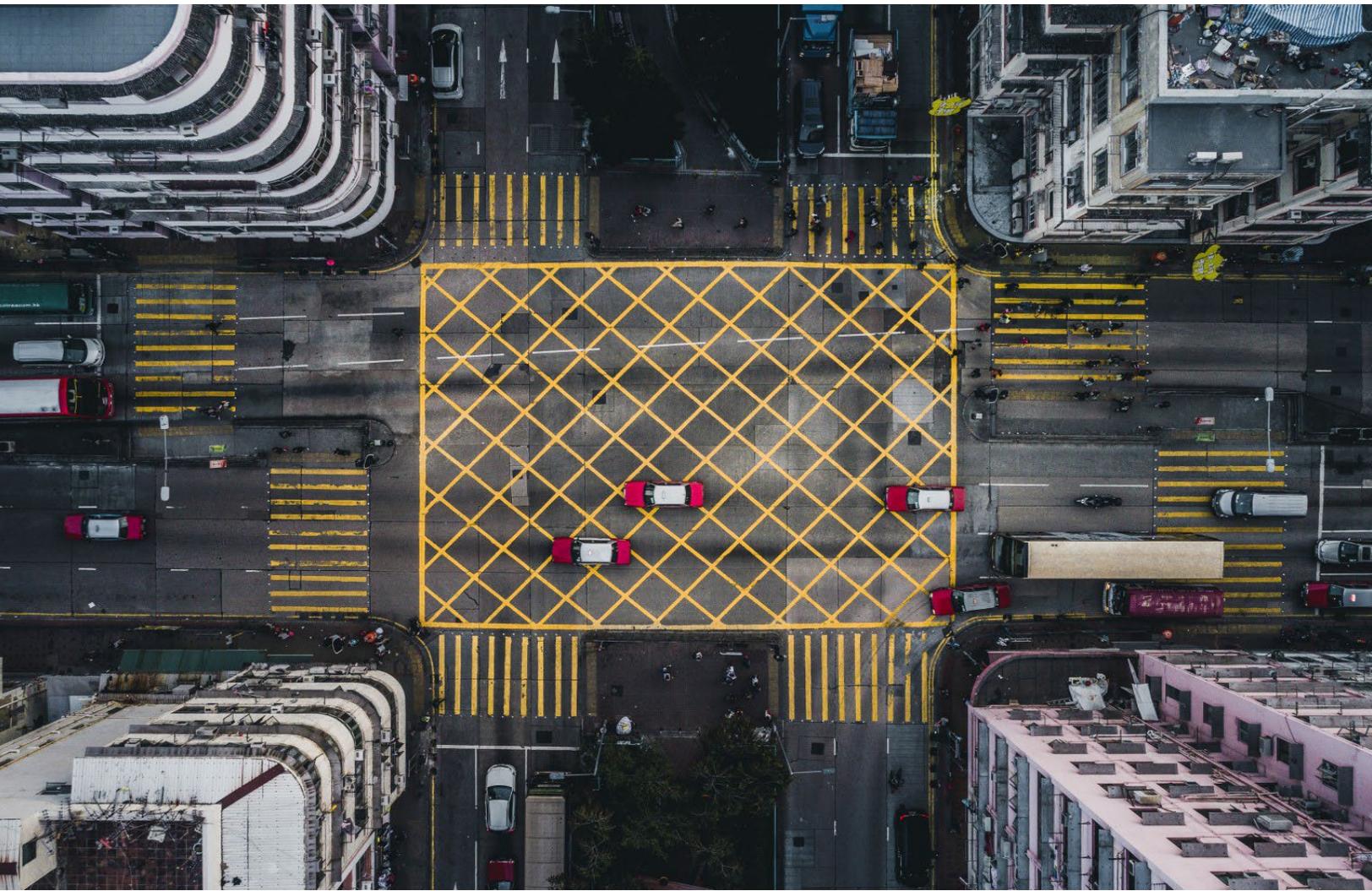
Tradewater – Thailand 2
Samutprakarn, Thailand
ACR Project ID: ACR839

Reporting Period:

February 7, 2023 – March 26, 2023

Tradewater, LLC
25 May 2023

➔ **The Power of Commitment**



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1. Introduction

GHD Services Inc. (GHD) was engaged by Tradewater, LLC (Tradewater) to provide greenhouse gas validation and verification services for the validation and verification for Tradewater – Thailand 2 (the Project). The Project consisted of the destruction of eligible ozone depleting substance (ODS) refrigerant from a government stockpile in the custody of Thailand’s Customs Department on or before 2007. The ODS was transferred to the Waste Management Siam LTD (WMS) warehouse for consolidation/aggregation and then destruction at the WMS destruction facility. The Project is located in Samutprakarn, Thailand. The Project is listed under the American Carbon Registry (ACR), ID: ACR839.

Tradewater is the Project Proponent for the Project and is responsible for the preparation and fair presentation of the Project Plan, Monitoring Report, and emissions reductions.

GHD Limited is accredited under ISO 14065 by ANAB as Validation/Verification Body (VVB) and is recognized by ACR. GHD Services Inc. is a GHD affiliated company permitted to conduct verifications through an inter-company agreement with GHD Limited.

The Project utilizes the “Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources”, Version 1.0, dated April 2021 (ACR Methodology).

This validation/verification covers reported emission reductions claimed by Tradewater during the reporting period of February 7, 2023 to March 26, 2023. The current crediting period is February 7, 2023 to February 6, 2033.

GHD has prepared this Validation and Verification Report in accordance with ISO Standard ISO 14064 Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions (ISO 14064-3:2019) and with the requirements of the ACR.

2. Validation/Verification Objective

The objective of the validation was to have an independent third-party validate the Greenhouse Gas Project Plan (GHG Project Plan) to ensure that the Project conforms to the ACR Validation and Verification Standard, the Project was using the applicable Methodology and that it is correctly evaluating the reported GHG baseline, project emissions and emission reductions.

The objective of the verification was to have an independent third-party verify the emission reductions that the Project claimed during the reporting period to ensure that they have been calculated in accordance with the ACR Standard and Methodology. The Project was reviewed for compliance with ACR criteria and relevant guidance provided by the ACR.

GHD is responsible for expressing an opinion on the reported GHG emissions reductions based on the validation/verification.

3. Level of Assurance

The verification was conducted to a reasonable level of assurance as per the requirements of the ACR standard.

Based on this level of assurance, GHD determined whether the Project's assertions are:

- Materially correct, free of misstatements and an accurate representation of the GHG data and information.
- The Project Report and documentation were prepared in accordance with the requirements of the ACR Standard and in accordance with the applicable GHG quantification, monitoring and reporting, standards or practices.

If validation/verification statements could be provided, they were worded in a manner to meet the requirements set forth in the ACR standard.

4. Validation/Verification Standards and Criteria

GHD adhered to the requirements outlined in the following documents as validation/verification criteria:

- *ISO 14064 Greenhouse Gases - Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*, ISO, April 2019 (ISO 14064-2-2019)
- *ISO 14064 3:2019 Specification with guidance for the validation and verification of greenhouse gas assertions*, ISO, April 2019 (ISO 14064-3-2019)
- *The American Carbon Registry Standard, Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project Based GHG Emissions Reductions and Removals*, Version 7.0, December 2020 (ACR Standard)
- *The American Carbon Registry Validation and Verification Standard*, Version 1.1, May 2018 (ACR V/V Standard)
- *Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources*, Version 1.0, April 2021 (Methodology)

5. Validation/Verification Scope

5.1 Validation and Verification Scope

The scope of the validation and verification was to review the following aspects of the Project:

5.1.1 Validation

- The Project's boundary and the procedures for establishing the project boundary
- The physical infrastructure, activities, technologies, and processes of the GHG project
- GHGs, sources, and sinks within the project boundary
- Temporal boundary
- Description of and justification for the baseline scenario
- Methods, algorithms, and calculations that will be used to generate estimates of emissions and emissions reductions
- Process information, sources identification/counts, and operational details
- Data management systems
- Quality assurance/quality control (QA/QC) procedures

- Processes for uncertainty assessments
- Project-specific conformance to ACR eligibility criteria, including additionality

5.1.2 Verification

- Physical infrastructure, technologies and processes of the GHG project
- GHG sources, sinks and reservoirs within the project boundary
- Temporal boundary
- Baseline scenario
- Methodologies and calculations used to generate estimates of emissions and emission reductions/removal enhancements
- Original underlying data and documentation as relevant and required to evaluate the GHG assertion
- Process information, source identification/counts, and operation details
- Data management
- QA/QC procedures and results
- Process for and results from uncertainty assessments
- Project-specific conformance to ACR eligibility criteria

5.2 Project Operations and Project Sources, Sinks and Reservoirs

The Project consisted of the destruction of CFC-11 and CFC-12 which are eligible ODS refrigerants under the Methodology. The refrigerants were obtained from the Government of Thailand Customs Department which maintained a stockpile of the ODS that was stockpiled prior to and until 2007. The ODS was transferred to WMS for consolidation and destruction. Upon arrival at WMS, ownership of the ODS, including any offset credits that resulted from the destruction of the ODS, was transferred to Tradewater.

Table 5.1 below presents the sources, sinks, and reservoirs (SSRs) for the Project, as defined in the Methodology.

Table 5.1 Project's Sources, Sinks, Reservoirs

SSR		Source Description	Gas	Included (I) or Excluded (E)
1.	ODS Collection	Fossil fuel emissions from the collection and transport of ODS sources	CO2 CH4 N2O	E
2.	ODS Recovery and Collection	Emissions of ODS from the recovery and collection of ODS at end-of-life or servicing	ODS	E
		Fossil fuel emissions from the recovery and collection of refrigerant at end-of-life or servicing	CO2 CH4 N2O	E
3.	ODS Use	Emissions of ODS from equipment use, leaks and servicing	ODS	E
		Fossil fuel emissions from the operation of refrigeration and A/C equipment	CO2 CH4 N2O	E

SSR		Source Description	Gas	Included (I) or Excluded (E)
4.	Substitute Refrigerant Production	Emissions of substitute refrigerant production	CO2e	E
		Fossil fuel emissions from the production of substitute refrigerant	CO2 CH4 N2O	E
5.	Transport to Destruction Facility	Fossil fuel emissions from the vehicular transport of ODS from aggregation point to final destruction facility	CO2 CH4 N2O	I E E
6.	ODS Use	Emissions from ODS from use, leaks and servicing through continued operation of equipment	ODS	I
		Emissions of substitute from use, leaks and servicing through continued operation of equipment	CO2e	I
		Indirect emissions from grid-delivered electricity	CO2 CH4 N2O	E
7.	Destruction	Emissions from ODS from incomplete destruction at destruction facility	ODS	I
		Emissions from the oxidation of carbon contained in destroyed ODS	CO2	I
		Fossil fuel emissions from the destruction of ODS at destruction facility	CO2 CH4 N2O	I E E
		Indirect emissions from the use of grid-delivered electricity	CO2 CH4 N2O	I E E

5.3 Client Contact

Ms. Adriana Vargas Corrales, Verification and Logistics Associate with Tradewater and Mr. Tip Stama, Director, Verification & Logistics with Tradewater are GHD's primary contacts for the validation/verification of the Project.

5.4 Project Geographical and Organizational Boundaries

The Project's destruction facility is located at the following address:

Waste Management Siam Company Ltd
 965 Moo 2 Soi 3B Bangpoo Industrial Estate
 Sukhumvit Rd Bangpoo Mai
 Muang Samutprakarn
 Samutprakarn 10280
 Thailand

5.5 Reporting Period

The Reporting Period for the Project is February 7, 2023 to March 26, 2023.

5.6 Project Deviations

The Project involved one deviation which consisted of a deviation from the ACR Methodology for the calculation of the weight of ODS destroyed. The deviation was approved by the ACR on April 10, 2023.

5.7 Use of this Report

This report has been prepared for the use of Tradewater, and upon request, the ACR.

Statements from GHD's Verification Report, including the Verification Statement must use the language in which the statement was issued, and reference the date of issuance of GHD's report, the applicable verification period, and the associated program for which the verification was conducted. The GHG statement provided by GHD can be freely used by Tradewater for marketing or other purposes other than in a manner misleading to the reader. The GHD mark shall not be used by Tradewater in any way that might mislead the reader about the verification status of the organization. The GHD mark can only be used in relation to the specific time period verified by GHD.

5.8 Use of Information and Communication Technology

As part of the verification process, GHD utilized information and communication technology (ICT) in accordance with IAF Mandatory Document for the use of Information and Communication Technology for Auditing/Assessment Purposes (IAF MD 4:2018) for various aspects of the verification, including conducting video/tele-conferencing with various personnel and a remote site assessment.

The decision to use ICT was permissible if GHD and the client agreed on using ICT. The agreed ICT method was MS Teams. By accepting GHD's proposal, Tradewater agreed to the use of the afore mentioned ICT method and its associated information security, data protection and confidentiality measures. Any other ICT method(s) were agreed to in writing (email) between GHD and Tradewater prior to use. The parties did not agree to the use of an ICT method for which either party did not have the necessary infrastructure to support. Throughout the entire verification process, including use of ICT, GHD abided by the confidentiality procedures.

6. Validation/Verification Plan

GHD developed a Validation/Verification Plan based on a preliminary review of the data initially provided. GHD submitted the Validation/Verification Plan to Tradewater on April 13, 2023, prior to GHD's remote Site visit on May 1, 2023. GHD's Validation/Verification Plan was revised, as required, throughout the course of the verification to address questions or initial concerns with data originally provided. The final Validation/Verification Plan is provided as Appendix A to this report.

6.1 Strategic Analysis

GHD performed a strategic analysis to understand the activities and complexity of the project to determine the nature and extent of the validation/verification activities. The information considered in the strategic analysis is documented in GHD's working papers and was used to inform the assessment of risks and the development of an evidence gathering plan.

6.2 Assessment of Risk and Magnitude of Potential Errors, Omissions or Misrepresentations

GHD conducted an assessment of the risk and magnitude of potential errors, omissions or misrepresentations associated with the facility or project assertions. The strategic analysis supported an understanding of the nature, scale and complexity of the facility or project. GHD then identified areas where qualitative or quantitative errors could occur and assigned risks to the areas. The inherent and control risks were evaluated and detection risks were established. The risks were identified as high, medium and low. The risk assessment was a key input to developing an effective evidence gathering plan.

6.3 Evidence Gathering Plan

GHD developed an Evidence -Gathering Plan (EGP) for internal use based on review of the objectives, criteria, scope, and level of assurance detailed above. The EGP was designed to lower the verification risk to an acceptable level and specify the type and extent of evidence gathering activities. The EGP was reviewed and approved by the Lead Validator/Verifier prior to issuing the verification plan. The EGP is dynamic and was revised, as required, throughout the course of the verification. Any modifications to the EGP were reviewed and approved by the Lead Validator/Verifier, with the final EGP completed prior to issuing the final validation/verification report and opinion.

6.4 Materiality Threshold

ACR requires that the materiality threshold for the discrepancies between the reported emissions reductions and those estimated by GHD be less than +/-5%. Before a verification statement will be accepted, the individual and aggregation of errors or omissions which are found to be greater than the ACR materiality threshold, require correcting.

The % error can be calculated using the following equation:

$$\text{Percent Error} = \frac{[\text{Project Emission Reduction Assertion} - \text{Verifier Emission Reduction Recalculation}] \times 100 \text{ percent}}{\text{Verifier Emission Reduction Recalculation}}$$

6.5 Validation/Verification Team and Internal Reviewer

6.5.1 Roles and Responsibilities

Lead Validator/Verifier – Gordon Reusing – Mr. Reusing led the validation/verification and was responsible for development of the validation/verification plan. Mr. Reusing reviewed the risk assessment, recalculation of raw data, data management, and draft findings. Mr. Reusing prepared and signed the validation and verification statements and validation/verification report.

Co-Lead Validator/Verifier – Anothai Setameteekul – Ms. Setameteekul led the validation/verification and was responsible for development of the validation/verification plan. Ms. Setameteekul reviewed the risk assessment, recalculation of raw data, data management, and draft findings. Ms. Setameteekul prepared and signed the validation and verification statements and validation/verification report. Ms. Setameteekul conducted a remote Site visit of the facility.

Verifier – Angela Kuttemperoor – Ms. Kuttemperoor provided support with preparing the validation/verification plan and evidence gathering plan, developed a risk assessment, recalculated raw data, reviewed management of data quality and prepared draft findings.

Internal Reviewer – Deacon Liddy – Mr. Liddy conducted a peer review of the verification plan, risk assessment, verification report and findings.

6.5.2 Qualifications

Gordon Reusing, M. Sc., P. Eng.	Role: Lead Validator/Verifier
<p>Professional Summary Mr. Reusing is a greenhouse gas (GHG) Lead Verifier, Lead Validator, and Peer Reviewer with extensive experience including GHG programmes in Alberta, British Columbia, Ontario, Quebec, Nova Scotia, California, and programmes operated by the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM), The Gold Standard, The Climate Registry (TCR), the Carbon Disclosure Project (CDP), and Verra: Verified Carbon Standard (VCS). Mr. Reusing has completed numerous GHG quantification studies for the oil and gas sector, including upstream, midstream, and downstream facilities. Mr. Reusing has conducted GHG verifications as a Lead Verifier, Technical Expert and Peer Reviewer in many jurisdictions, including, but not limited to, the Alberta Carbon Competitiveness Incentive Regulation (CCIR), Ontario Regulations, British Columbia Greenhouse Gas Reduction (Cap and Trade) Act, (B.C. Reg. 272/2009), and Quebec Regulation R.Q.c.Q 2, r.15 (Quebec Regulation).</p>	

Anothai Setameteekul, P. Eng.	Role: Co-Lead Validator/Verifier
<p>Professional Summary Ms. Setameteekul is a GHG and Air Emissions Engineer based in GHD's Calgary office and is a licensed Professional Engineer in the provinces of Alberta and Saskatchewan. She has extensive knowledge and experience in GHG quantification and verification in particular industrial facilities – Oil Sands (In Situ, Mining, Upgrader operations), Hydrogen Production, Petrochemical, Cement, Refinery, Natural Gas Processing, Natural Gas Power Generation with Cogeneration, and Steel Manufacturing. She is familiar with the GHG Regulation in Canadian jurisdictions including British Columbia, Alberta, and Ontario. Ms. Setameteekul is also accredited by the California Air Resource Board as a lead verifier of greenhouse gas emissions for Oil and Gas system, process emissions sectors, fuel pathways, alternative fuel transactions and petroleum-based fuel report. Ms. Setameteekul is also accredited by the Washington State as a verifier. Ms. Setameteekul also has experience working in the accreditation audit process for GHD by ANAB and has training and knowledge of the ISO 14064 and ISO 14065 standards.</p> <p>Ms. Setameteekul graduated with a Masters degree in Industrial System Engineering from the University of Regina. Ms. Setameteekul worked as a research assistant in International Testing Center for CO2 Capture (ITC). Her work was related to CO2 capture using chemical absorption process. Ms. Setameteekul also worked as a process engineer to evaluate process performance such as process efficiency, air emissions, liquid effluent, waste, and utility consumption at a carbon capture test facility.</p>	

Angela Kuttemperoor, E.I.T.	Role: Verifier
<p>Professional Summary Ms. Kuttemperoor is an Air Engineer-In-Training with GHD's Greenhouse Gas Assurances Services Team and has retained 1.5 years of experience in greenhouse gas verification work. Ms. Kuttemperoor is a Bachelors of Environmental Engineering graduate (co-op) from the University of Guelph, located in Guelph, Ontario. Ms. Kuttemperoor has involved in numerous verifications for the Ontario greenhouse gas reporting program under Ontario regulation 390/18, and the Federal OBPS program, for a wide variety of sectors. Ms. Kuttemperoor has involved in carbon offset project verifications for sites located within the United States and regulated under various voluntary offset credit programs including the Climate Action Reserve (CAR), Verra: Verified Carbon Standard (VCS) and The Climate Registry (TCR). Ms. Kuttemperoor has experience with verifications for ODS offset projects regulated by the California Air Resources Board (ARB).</p>	

Deacon Liddy, P. Eng.	Role: Technical Reviewer and Technical Expert
<p>Professional Summary Mr. Liddy is a Principal with GHD and an experienced GHG validator and verifier, having completed over 100 GHG validation/verifications with 17 years of experience. Mr. Liddy works with large industrial facilities, Provincial governments, and offset project developers to complete risk-based verifications. Mr. Liddy has been the lead verifier for completion of greenhouse gas verifications conducted on behalf of Alberta Environment for emission offset projects for landfill gas, biomass, tillage, composting and fuel switching for lumber kilns. Mr. Liddy has completed verifications of greenhouse gas emission intensity baseline applications and annual compliance reports under the Alberta Specified Gas Emitters Regulation and British Columbia Mandatory Reporting Regulation. Mr. Liddy is a professional engineer in BC, Alberta, and Saskatchewan.</p>	

7. Validation/Verification Procedures

7.1 Conflict of Interest Review

The Project was submitted for listing to ACR on January 26, 2023. The ACR Standard for Projects listed subsequent to January 1, 2021 is Version 7.0. Prior to commencing the verification, GHD conducted an internal conflict of interest (COI) check to determine the potential for a COI in providing validation/verification services to the Project. Based on the COI risk levels of the ACR Validation and Verification Standard, GHD identified a low risk for COI, based on the fact that GHD has previously only conducted verifications for the Project Proponent. GHD recently conducted the verification/validation for Tradewater International – Thailand 1.0 Project for the Project Proponent in 2022-2023.

GHD submitted the ACR COI form for the Project on March 10, 2023. The ACR provided the authorization to commence the validation/verification of the Project on March 19, 2023 and the Project verification COI is listed as approved on ACR registry.

7.2 Kick off Meeting

On March 9, 2023, a kick-off conference call was held between GHD and Tradewater to discuss the validation/verification scope and to provide the Project Proponent with a list of information required by GHD to initiate the desk review of the Project. The requested documents were provided by the Project Proponent via email and electronic media. The following specific items were discussed in the kick-off conference call:

- Project operations
- Proposed Validation/Verification timeline
- Site visit scheduling and arrangements
- Data and information requests

GHD did not commence the validation and verification activities until after ACR provided the authorization to commence the validation/verification on March 21, 2023.

7.3 Validation Process

The following sections outline GHD's validation process.

Validating Project Boundaries

GHD's validation of the Project boundaries outlined in the GHG Project Plan included the following:

- Physical or geographic boundaries
- GHG assessment boundary
- Temporal boundary

Validating Project Baselines

GHD confirmed that the baseline applied by the Project Proponent in the GHG Project Plan is appropriate per the Methodology. GHD ensured there is verifiable data for the baseline scenario, including selection rationale and justification, the guidance followed for baseline emissions estimation, and consistency across post-base year project emissions calculations.

Validating Additionality

GHD evaluated the components of the additionality demonstration per the ACR Standard and the Methodology:

- Regulatory Surplus Test
- Common Practice Test

- Implementation Barriers Test
- Performance Standard Test

Validating Quantification Methods

GHD validated the following:

- The quantification method for each data parameter is clearly defined, and supporting documentation provided is adequate to support the level of assurance required.
- The methods are appropriate for accurately quantifying each data parameter based on the required level of assurance.
- The methods are applied consistently to develop estimates of emission reductions and removal enhancements.
- The principle of conservativeness is applied.

Validating Other Project Criteria

In addition to the above, GHD reviewed the following components within the GHG Project Plan:

- Start date
- Crediting period
- Minimum project term
- Offset title
- Impermanence and risk mitigation
- Leakage
- Environmental and community impacts
- Double issuance, double selling, and double use of offsets
- Projects participating in other asset programs

7.4 Verification Process

The following sections outline GHD's verification process.

Information/Records Reviewed

Information/records reviewed by GHD included the following:

- GHG Project Plans
- GHG Assertions
- Operational and control procedures and records for ensuring GHG data quality
- Documentation of GHG Sources, Sinks and Reservoirs
- Documentation of quantification methodologies
- Documentation of monitoring and measurement systems

Data Assessment and Management Systems

GHD reviewed data assessment and management system documentation that describes the process of data collection, entry, calculation and management. GHD reviewed the following:

- Selection and management of GHG data and information
- Processes for collecting, processing, aggregating, and reporting
- Systems and processes to ensure accuracy
- Design and maintenance of the GHG data management system, including systems and processes that support it

GHD assessed the effectiveness of the data assessment and management system and determined areas of risk.

Collection of Evidence

GHD collected physical, documentary, and testimonial evidence to verify the Project.

Evidence Gathering Plans; Risk-Based Approach

GHD followed a risk-based validation/verification approach in developing the Validation/Verification Plan and Evidence Gathering Plan. As such, GHD identified the key reporting risks. Key issues in validation/verification include, but are not limited to, validation/verification of correct use of emission factors and conversion factors, and consistency in aggregation of emissions data. Wherever practical, direct reading instruments will be used to ensure that any reporting risks are kept with equipment and instrumentation performance limits.

GHD used a risk-based approach for on-site investigation conducted during the validation/verification process. The Lead Validator/Verifier followed the audit trails and data sets on site for specific indicators, and cross-checked with the Monitoring Report, GHG Project Plan, the Methodology, records, and latest versions of the ACR Standard. Direct reading instrumentation and redundancy in the data used to support the validation/verification were identified in the validation/verification reporting.

During the remote Site assessment, GHD focused on the key areas identified as follows:

- An assessment of the implementation and operation of the Project per the GHG Project Plan.
- A review of information flows for generating, aggregating, and reporting the monitoring parameters.
- Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the GHG Project Plan.
- A cross check between information provided in the Monitoring Report and data from other sources
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the GHG Project Plan and Methodology.
- A review of calculations and assumptions made in determining the GHG data.
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

Error Checking/Testing

GHD independently calculated the final emissions reductions using Tradewater's raw data to ensure that the correct ACR Methodology and raw data was used.

During the verification process, GHD considered both quantitative and qualitative information on emission reductions. Quantitative data is comprised of the Monitoring Report submitted to the Project Verification Team by the Project Proponent. Qualitative data is comprised of information on internal management controls, calculation and transfer procedures, frequency of emissions reports, and review and internal audit of calculations/data transfers.

Summary of Findings

If during the verification/validation of the Project, the Project Team identified issues to be addressed to confirm that the Project met the ACR requirements, the Lead Validator/Verifier issued findings to the Project Proponent. These issues were transparently identified, discussed, and concluded in the Validation/Verification Report.

Iterations of these requests were continued until such a time as the Lead Validator/Verifier adequately resolved or "closed out" the identified findings.

Validation/Verification Report and Statement

The outcome of the remote site assessment, desktop review, and Summary of Findings was the creation of a Draft Validation/Verification Report. The draft Validation/Verification report was reviewed internally by the Internal Reviewer.

Any additional findings as a result of the technical review were presented to the Project Proponent. Upon receipt of the Project Proponent's response, the Project Team issued the Final Validation/Verification Report to the Project Proponent and ACR along with the completed Validation/Verification Statement.

7.5 Details of Remote Site Visit

The ACR indicated that a remote site visit was acceptable and sufficient for this validation/verification. GHD had previously conducted an in-person site visit for the Thailand 1.0 validation/verification in October 2022. A remote Site visit was conducted by Ms. Anothai Setameteekul of GHD on May 1, 2023. During the Site visit, GHD interviewed Project personnel involved in the development of the GHG Project Plan and Monitoring Report, witnessed the Project's operations, and inspected data management systems. The following personnel were present at all times during the Site visit:

- Panjamas Thaengthonglang (Tradewater)
- Tip Stama (Tradewater)
- Sutthida Fakkum (Waste Management Siam Ltd. (WMS)/Bangpoo Environmental Complex Co. Ltd. (BPEC))
- Prin Hanthanon (WMS)
- Ampol Ruttanasang (WMS)

During the Site visit, GHD personnel interviewed participants about the Project regarding an overview of the process, review of major emission sources, the Project boundary and the data management system in place at the Facility. Through this inspection, GHD was able to verify that personnel responsible for the GHG Project Plan and Monitoring Report preparation were sufficiently trained and qualified. GHD reconfirmed that the location of the Project has not changed from GHD's in-person Site visit to WMS Destruction Facility for Tradewater International – Thailand 1.0.

8. Validation/Verification Findings

8.1 Use of ICT

Summary of ICT Techniques Used

GHD and Tradewater successfully used MS Teams to hold calls, video conferences and share screens. GHD and Tradewater used an online SharePoint folder (Dropbox) and email to share files.

Findings and Conclusions

The remote Site visit of the Project used MS Teams and some client calls between Tradewater and GHD occurred via MS Teams. GHD and Tradewater encountered no issues using ICT as a part of this validation/verification; transfer of data between Tradewater and GHD was smooth, and MS Teams calls did not encounter any technical issues.

Based on GHD's review, the ICT technologies used were acceptable and reasonable for use in the validation/verification, and GHD was able to maintain the acceptable level of assurance.

8.2 Findings List

During the review of the data provided to GHD for the Reporting Period, GHD identified a list of findings and clarifications that required action from the Client. The Findings List is available in Appendix C.

8.3 Validation Findings

8.3.1 Project Boundary

The project boundary was validated during the Site visit that occurred for Project Tradewater International – Thailand 1.0 which was the Project that GHD verified prior to the current Project. During the remote Site visit, GHD re-confirmed the location of the site. The completeness of the Project was reviewed from the GHG Project Plan and supporting documentation, including inclusion and/or omission of listed equipment in particular as it relates to the ACR Methodology-listed SSRs. Further, GHD confirmed that WMS controlled operations at the Project Site, the destruction facility. Further to this review, GHD conducted a desktop review of related project documentation, including evidence of government stockpiling of ODS and evidence of ownership. From this inspection and review, GHD confirmed the following:

- All operations listed in the Project Plan were present and accounted for
- Other omitted Project sources and sinks were confirmed to not be present during the Project operation
- Only WMS-controlled equipment was present at the Project Site

Therefore, GHD can confirm that the listed project boundaries are appropriate for the Project.

8.3.2 Project Deviations

The Project involved a deviation from the Methodology for the calculation of the weight of ODS destroyed, with the purpose of increasing accuracy of the ODS weight measurement, avoiding the need to account for truck fuel weights for ODS weight determination and using a method that is in alignment with international tipping standards. The deviation consisted of an adaptation of requirement I.B.iii.g in Appendix B of the Methodology, for the scenario relevant to the Project, where the same transportation vehicle is used for transport of containers pre- and post-destruction at the destruction facility. The requirement in the Methodology is as follows:

“ If different transportation vehicles are used to transport containers to a destruction facility and to pick up the empty containers after destruction, each transport vehicle shall be weighed both upon its arrival and departure from the destruction facility. If the vehicle transporting the full ODS containers to the destruction facility weighs more than the vehicle carrying the empty ODS containers from the facility, the mass discrepancy must be subtracted, as applicable from $Q_{ref,i}$ in Equation 2, and Q_{ODS} in Equation 5.”

Per the deviation, the requirement was adapted for the scenario where the same truck is used for the transportation of containers. The calculation methodology as described was followed and uses the procedure of measuring the tare truck weights, to discount any weight discrepancies between the inbound and outbound trucks, mainly due to fuel tank levels. The procedures and equation used by Tradewater, as outlined in the ACR deviation request is as follows:

$$ODS\ destroyed = (inbound\ weight - inbound\ tare\ weight) - (outbound\ weight - outbound\ tare\ weight)$$

Before destruction:

1. Weigh truck attached to the full ISO tank when arriving to the destruction facility (inbound weight).
2. Weigh truck immediately after detaching ISO tank to obtain truck tare weight (inbound tare weight).

After destruction:

1. Weigh truck when it arrives to the destruction facility, immediately before attaching the empty ISO tank (outbound tare weight).
2. Weigh truck attached to the empty ISO tank to obtain the truck tare weight (outbound weight).

The deviation was approved by ACR on April 10, 2023. GHD reviewed the approved deviation request and confirmed that the deviation procedures were followed. GHD confirmed that the modified ODS weight calculation was applied appropriately in the GHG Assertion.

Through review of the weight tickets, GHD identified that the truck IDs pre- and post-destruction were different. GHD pointed this out to Tradewater and Tradewater provided signed weight forms which indicated that the license plate numbers for the trucks pre- and post-destruction was the same, license plate no. 805. GHD confirmed that the trucks to and from the destruction facility were the same trucks.

8.3.3 Project Applicability

As per Sections 2, 3 and 6 of the ACR Methodology, the applicability requirements for the Project are detailed below.

8.3.3.1 Location

During GHD's validation/verification of Project Tradewater International – Thailand 1.0, GHD conducted an in-person Site visit to the Facility and verified that the Project location is at the WMS destruction facility, Samutprakarn, Thailand. During the remote Site assessment that was conducted for the current Project Tradewater - Thailand 2, GHD confirmed that the Project location has not changed.

During the validation/verification of Project Tradewater International – Thailand 1.0, GHD confirmed that all ODS obtained for the Project were originally stockpiled prior to 2007 at the Government of Thailand's customs department and transferred to WMS, before all ownership was transferred to Tradewater. For the current Project Tradewater - Thailand 2, GHD confirmed that a second transfer of ODS from the Government of Thailand's customs department to WMS did not occur, and instead that ODS at WMS from the original transfer from Thailand Government was destroyed, as the ODS is being destroyed in stages.

8.3.3.2 Eligible Destruction Facilities

The destruction facility is regulated by the Industrial Estate Authority of Thailand (IEAT) and is not subject to RCRA standards as required for facilities located in the United States. The WMS destruction facility was reviewed for compliance with the Montreal Protocol's TEAP standards; the United Nations Environment Programme (UNEP) *Report of the Technology and Economic Assessment Panel, April 2018, Volume 2, Decision Xxix/4 Teap Task Force Report on Destruction Technologies for Controlled Substances*.

The fluidized-bed incineration destruction technology that the WMS destruction facility uses is not currently listed in the TEAP standards. Through review of email correspondence, GHD determined that ACR confirmed that it is not required that the facility use a technology listed in the TEAP Report, as long as the facility meets the TEAP standards. Furthermore, ACR provided information on the fluidized-bed incineration destruction technology to Tradewater in the form of a study commissioned by US EPA that lists the technology as one of the approved methods for ODS destruction. GHD reviewed the study, *ODS Destruction in The United States of America and Abroad, May 2009, ICF International for U.S. EPA's Stratospheric Protection Division* and identified that fluidized-bed incineration was listed an approved method for ODS destruction. GHD assessed the WMS facility against all TEAP screening criteria for destruction facilities including:

1. Destruction and Removal Efficiency (DRE)
2. Emissions of dioxins and furans (PCDDs/PCDFs)
3. Emissions of other pollutants (acid gases, particulate matter, and carbon monoxide)
4. Technical capability

GHD reviewed the 6th CFC DRE Report for the Facility which demonstrates a destruction efficiency of 99.99% for refrigerants and emission levels for contaminants carbon monoxide, hydrogen fluoride, hydrogen chloride/chlorine gas, particulates and dioxins and furans. GHD reviewed the stack test emission level analysis reports as prepared by United Analyst and Engineering Consultant Co., Ltd for the remaining contaminants including hydrogen bromide.

GHD reviewed the emissions levels for the contaminants and identified that concentrations as demonstrated in the Analysis reports were expressed on differing standard conditions from the standard conditions used for determining emissions limits in the TEAP standards. GHD observed that under the conditions as listed in the original emissions

analysis reports of 0°C, stack gas corrected to 11% O₂, all pollutants were under the TEAP limits, except for PCDDs/PCDFs as demonstrated in Table 8.1. Results were converted to the TEAP standard conditions of 25°C, stack gas corrected to 7% O₂ and resulted in all contaminants being below the TEAP emission level thresholds. Furthermore, the destruction facility met the technical capability requirements under TEAP for destruction removal efficiency and processing capability as shown in Table 8.2.

Table 8.1 TEAP Performance Criteria

Performance Qualification	Limit (Concentrated Sources)	WMS Facility Results (lab test conditions ²)	WMS Facility Results (TEAP standard conditions ¹)
Destruction Removal Efficiency (DRE)	99.99%	99.99%	99.99%
PCDDs/PCDFs	0.2 ng-ITEQ/Nm ³	0.25 ng-ITEQ/Nm ³	0.19 ng-ITEQ/Nm ³
HCl/Cl ₂	100 mg/m ³	0.68 mg/m ³	0.53 mg/Nm ³
HF	5 mg/m ³	0.192 mg/m ³	0.149 mg/Nm ³
HBr/Br ₂	5 mg/m ³	<0.001 mg/m ³	<0.001 mg/Nm ³
Particulates	50 mg/m ³	1.12 mg/m ³	0.87 mg/Nm ³
CO	100 mg/m ³	0.1 mg/m ³	0.08 mg/Nm ³

¹ All concentrations of pollutants in stack gases and stack gas flow rates are expressed on the basis of dry gas at normal conditions of 0 °C and 101.3 kPa, and with the stack gas corrected to 11% O₂ (as referred to by normal cubic metre, Nm³).

² Concentrations for pollutants as reported in the 6th CFC DRE Report were determined on the basis of dry gas at normal conditions of 25°C and 101.3 kPa, and with stack gas corrected to 7% O₂.

Table 8.2 TEAP Technical Capability for ODS Destruction

Technical Capability	Limit (Concentrated Sources)	WMS Facility Results
It has been demonstrated to have destroyed ODS to the technical performance criteria, on at least a pilot scale or demonstration scale (recommended for approval); OR It has been demonstrated to have destroyed a refractory chlorinated organic compound other than an ODS, to the technical performance criteria, on at least a pilot scale or demonstration scale, which indicates that the technology is considered to have a high potential for application with ODS but has not actually been demonstrated with ODS (recommended as high potential); and	99.99%	Facility demonstrated to destroy ODS to the technical performance criteria, a DRE of 99.99% for refrigerants.
The processing capacity of an acceptable pilot plant or demonstration plant must be no less than 1.0 kg/hr of the substance to be destroyed, whether ODS or a suitable surrogate.	1.0 kg/hr	25 kg/hr

8.3.3.3 Eligible ODS

GHD confirmed that destruction took place under one Certificate of Destruction and that all required information was included on the destruction certificate. GHD confirmed with Tradewater that Thailand does not require certifications for the handling, recovery and disposal of ODS refrigerants, however that technicians were certified under relevant bodies and were trained in accordance with the Facility's standard operating procedures (SOPs) including sampling. Other SOPs that the Facility maintains includes SOPs for ODS Transport and Storage, Filling and Maintenance procedures. GHD confirmed that Mr. Ampol Rattanasang, as listed on the ODS Sampling certificate as the technician taking the sample was certified by Laboratory Registration under Department of Industrial Works (Thai Government) with Certificate Number ก-320-ค-9257. GHD confirmed that Mr. Victor Molina who conducted the training session for sampling procedures, was certified with EPA 608 certification number 2019-02-ACCTECH-0019.

GHD confirmed that the refrigerants destroyed included CFC-11 and 12, which are eligible ODS under the Methodology.

8.3.3.4 Project Start Date, Reporting Period and Crediting Period

ACR defines the Start Date for all projects other than AFOLU as the date on which the project began to reduce GHG emissions against its baseline. For ODS projects, the Project start date is listed on the Certificate of Destruction, when the destruction of ODS occurs. The start of destruction listed on the Certificate of Destruction is February 7, 2023. GHD confirmed that the start date aligns with activity data including the CEMS data that indicates the start time of feeding of the ODS to the ISO tanks. GHD confirmed that the Project's reporting and crediting period begin on the Project start date, and that the reporting period falls within the crediting period. The crediting period for this type of Project (i.e., non AFOLU) per the ACR Standard is 10 years. GHD confirmed that the reporting period ended on March 26, 2023 and therefore is less than 12 consecutive months. GHD confirmed that the Project only has one reporting period. Only one destruction event took place within the reporting period.

8.3.3.5 Government Stockpile Requirement

GHD reviewed documents relating to Thailand regulations concerning the destruction of ODS including the *Meeting Minutes of Cooperation between the Customs Department and the Department of Industrial Works Waste Management Siam Company Limited and The Creagy Company Limited*, which described that the ODS refrigerant is considered a national item under the Thailand Customs Law. The Customs Law takes precedence over other laws such as the Hazardous Substance Act B.E. 2535 which requires destruction of hazardous substances. Additionally, there is no requirement to destroy a national item under the Customs law. Therefore, GHD confirmed that the ODS, as obtained from a government stockpile was not required to be destroyed or converted, as per ACR Methodology Section 6.1 IV.

8.3.4 Project Eligibility

Project eligibility requirements are outlined in Chapter 3 of the ACR Standard. GHD reviewed the Project against the eligibility requirements in the Standard as detailed below.

8.3.4.1 Minimum Project Term

The minimum project term is not applicable for the ODS Project type.

8.3.4.2 Real

Per the ACR Standard, any GHG emission reduction or removal must be real and have already occurred prior to credit issuance on this Project. GHD verified the Project Start date to confirm that the emissions reductions are real and ex ante. In addition, GHD reviewed Facility records including CEMS data to verify the emissions reductions are real and verifiable. Based on GHD's review, the reported emissions reductions meet the criteria for real offsets outlined in the ACR standard.

8.3.4.3 Emissions Removal or Origin

An emission or removal is direct if it originates from sources or sinks over which the Project Proponent has control and indirect if it originates at sources or sinks over which the Project Proponent does not have control.

GHD reviewed the transfer of ownership letters from the Thailand government Customs department and transfer of ownership letters from WMS to Tradewater, to confirm that Tradewater retains ownership of all emission reductions and credits generated by the project.

8.3.4.4 Offset Title

GHD reviewed the Project's chain of custody and transfer of ownership documents to confirm whether the Project has a valid offset title. Tradewater reviewed the letters detailing the transfer of ODS and ownership from the Thailand Government Customs Department to WMS and WMS to Tradewater with effective dates September 26, 2022, October 3, 2022, October 14, 2022, October 21, 2022, October 27, 2022 and November 14, 2022. GHD confirmed with Tradewater that the Government transfers to WMS and WMS to Tradewater occurred during the previous Tradewater International – Thailand 1.0 Project, during which a first batch of ODS destroyed. Therefore, all ODS was already located at the WMS warehouse at the start of the current destruction Project and a second batch of ODS was destroyed during the current Project. GHD confirmed that ODS destroyed during the Project, credits generated, and transfer of ownership of the credits from WMS to Tradewater are demonstrated in the signed Consolidation Report, which includes a list of the containers and total weight of ODS that was destroyed and is the offset title for the Project.

GHD identified that the transfer of ownership letters from WMS to Tradewater indicate transfer to entity "Tradewater International, SRL." GHD pointed this out to Tradewater and Tradewater confirmed that any mention of Tradewater International within the project documentation is self-same as Tradewater LLC, as described in the GHG Project Plan. During GHD's validation/verification of Tradewater International – Thailand 1.0, GHD confirmed that there was a merger between the two entities.

8.3.4.5 Additional

8.3.4.5.1 Legal Requirement Test

Under the Methodology, the Project Proponent must demonstrate that the emission reductions achieved by a project using this Methodology must exceed those required by any law, regulation or legally binding mandate.

There is no mandate in Thailand that requires the destruction of ODS. Thus, all emission reductions resulting from the Project are considered to be not legally required, and therefore are eligible for crediting.

8.3.4.5.2 Performance Standard Evaluation

As the Project meets the ODS project definition and all other eligibility requirements in the Methodology, then the performance standard evaluation is satisfied.

8.3.4.6 Regulatory Compliance

GHD reviewed the following information to confirm that WMS Destruction Facility was in regulatory compliance during the reporting period:

The WMS destruction facility is regulated by the Industrial Estate Authority of Thailand (IEAT). GHD reviewed the following information to confirm that the facility was in regulatory compliance during the reporting period:

- *BPEC Permit: Letter of Permission for Land Utilization and Business Operations in Industrial Estate Under the Industrial Authority of Thailand Act B.E. 2522 (1979), Permit Number 2-02-1-109-81584-2565 (2022), Industrial Estate Authority of Thailand, December 29, 2022. Effective January 1, 2023.*
- *BPEC Permit for waste residue stream: Waste or Unused Material Transferred Onsite to Disposal Permit, January 1, 2022, Valid February 26, 2022 to February 25, 2023, Permit Number 6501-334, Department of Industrial Waste*

- *The Report of Changes in the Project in the Report of Environmental Impact Assessment for Projects, Business, or Operations Which Might Possibly Impact Natural Resources, Environment Quality, Health, Sanitation, Well-Being Of People In The Community.* Central Waste Treatment (1st extension) (2nd)

GHD confirmed that the most recent BPEC permit provided by Tradewater, dated December 29, 2022, was applicable to the current ODS destruction Project. GHD confirmed that the BPEC permit for waste residue stream has not changed since Project Tradewater International – Thailand 1.0. The permit is relevant to this Project in authorizing the transport of the waste to the WMS/BPEC warehouse in preparation of destruction for the original shipments from the Thailand Government Customs Department.

GHD reviewed Section 2: Waste Receiving Capacity for the Fluidized Bed Fixed Combustion Furnace of the above listed Report which indicated that ODS is received at 0.6% of the maximum capacity for the destruction facility at 150 tons/day. Through review of the applicable IEAT permits and reports, GHD confirmed that WMS was in regulatory compliance during the reporting period.

8.3.4.7 Permanent

Due to the nature of this Project, there is no risk of reversal. Once the ODS is destroyed, the associated GHG reductions are fixed. As such, GHD verified the emission reductions are permanent as defined in Section 5 of the ACR Standard. As there is no risk of reversal, no further action was required regarding risk mitigation to meet the permanence criteria per the ACR Standard.

8.3.4.8 Net of Leakage

GHD verified that leakage assessment is not applicable under the ACR Methodology.

8.3.4.9 Environmental and Community Assessments

As per the GHG Project Plan Tradewater determined that there are no negative environmental impacts resulting from the Project and the reduction in emissions from the Project is expected to bring net positive impacts to the local environment and community. GHD reviewed the Project Plan to ensure Tradewater had evaluated community and environmental impacts. Based on GHD's review, community and environmental impacts were evaluated by Tradewater. Tradewater reported net positive impacts from the Project and reported the Project meets three United Nations Sustainable Development Goals (SDG9, SDG12 and SDG13). GHD confirmed that a mitigation plan was not required as no negative impacts from the Project were foreseen.

8.3.5 Double Issuance, Double Selling and Double Use of Offsets

GHD confirmed that the Project is not claiming emission reductions on another GHG registry or platform by checking other registries as per Section 10.A of the ACR Standard. GHD reviewed the following registries to confirm this:

- Climate Action Reserve
- Verra

In addition, GHD reviewed other asset programs (such as Climate Forward) and confirmed that the project was not claiming other environmental assets elsewhere. Per the ACR Standard, the Project Proponent is required to disclose any other registrations of the Project.

GHD also verified ownership of the Facility as outlined in Sections 8.3.1-8.3.4 to verify that no double-claiming of emission reductions may occur as per Section 10.B of the ACR Standard.

8.4 QA/QC Data Management Systems, and Document Retention

Summary of Data Management Procedures

The WMS destruction facility monitors and records destruction parameters in the CEMS data system which collects data per hour. Parameters including pressure and flow rate are monitored continuously on a separate stage of the furnace for gaseous substances such as ODS and this is collected every half hour. On-site personnel monitor destruction in order to prevent any occurrences of errors, exceedances, or other impacts to the project.

Scales used for determining weight of ODS are calibrated periodically by third-party, with requirement by Thai government for recalibrations every two years. WMS undergoes annual procedure reviews and required readings. Qualified technicians are constantly monitoring the emission levels during burns. The destruction facility is regulated by the Industrial Estate Authority of Thailand (IEAT). Tradewater reviews all paperwork to ensure that it satisfies protocol requirements.

Sampling is conducted by WMS before destruction by a technician who is unaffiliated with the Project Proponent and is trained in the sampling process. Sample is taken with a clean, fully evacuated sample bottle that meets applicable DOT requirements and is over one pound at liquid state. The sample is individually labeled, tracked, with the required information recorded on the ODS Sampling Certificate per the ACR Methodology.

Samples are sent to Bureau Veritas Belgium, an ISO/IEC 17025-certified lab where project samples are analyzed to confirm the mass percentage and identification of each component of the sample.

WMS has retention policy up to lifetime of facility. All documents are stored physically and digitally backed-up. Tradewater has a retention policy of 15 years. Documents are stored on a third-party cloud system that is backed up on a regular basis, with hard copies saved on-site wherever possible.

Assessment of Procedures

Based on discussions with Project personnel and GHD's review of the supporting documentation, the Project Proponent retains all GHG information and supporting documentation required by the ACR Standard at the Project Site for a minimum of 12-years. GHD reviewed the sampling and weighing procedures conducting by the facility and confirmed that they conformed to the ACR Methodology and that all required documentation requirements were met.

GHD reviewed the weigh scale calibration conducted by Siam Scales & Engineering Co. Ltd. in October 2022 and confirmed that the scales (SN. 050240314, ID No.:006-48) were calibrated to 5% accuracy. GHD confirmed that a calibration of the scales were conducted during the next quarter in March 2023 to 5% by Siam Scales & Engineering Co. Ltd. Based on GHD's review the data management procedures at the Facility are robust and in accordance with the ACR Standard.

8.5 Validation/Verification of Quantification Methods

8.5.1 Activity Data

Tradewater calculated emissions using activity data for the Project Period. The activity data consisted of the following parameters:

- Weight of ODS Destroyed
- Composition of Batch make-up

GHD reviewed the Project Proponent's documentation and procedures to determine conformance with the requirements of ACR Standard and the Methodology. Data checks included all documents as detailed in Appendix B.

Through GHD's review of the activity data, the following issues were identified and resolved:

- The lab analysis certificate indicated that moisture was at 18 ppm and 0.1 HBR which differed slightly from the values used in emissions reductions calculations as per the GHG Project Assertion. This created an immaterial discrepancy in emissions reductions. Tradewater corrected the calculations accordingly.

8.5.2 Assessment of the Emission Reduction Calculations

The following summarizes the emissions calculations completed by Tradewater and verified by GHD, and presents any material and immaterial discrepancies that GHD identified during the validation/verification.

GHD reviewed the emission factors and calculation methodologies used by Tradewater to verify if they were in accordance with the ACR Methodology and ACR Standard. In addition, GHD performed independent calculations of the emissions to determine if there were any discrepancies, omissions or misreporting that could result in an offset material misstatement in the total reported emissions.

8.5.2.1 Weight of ODS Destroyed

GHD performed a re-calculation of the weight of ODS sent for destruction using the ACR-approved deviation methodology and weight calculation and identified no discrepancies. GHD confirmed that the determined ODS weight was used appropriately to determined project and baseline emissions and emissions reductions.

8.5.2.2 Project Emissions

GHD reviewed the calculation methodology used by Tradewater and found it to be in accordance with the ACR Methodology. The Project Proponent utilized Equations 3, 4 and 5 from the ACR Methodology to calculate Project Emissions. GHD reviewed the refrigerant sample analysis reports as certified by the laboratory to confirm composition. GHD reviewed mass determination procedures and the mass used in Tradewater's calculations.

Per the ACR Methodology, Tradewater has removed mass applicable to the high boiling residue, moisture, and ineligible ODS (as determined by the laboratory analysis). GHD confirmed Tradewater used the correct emission factors for substitute refrigerants. Tradewater used the default emission factor for ODS transportation and destruction per the ACR Methodology.

GHD performed an independent calculation of baseline emissions and found no discrepancy to Tradewater's GHG Assertion, Monitoring Report and GHG Project Plan.

8.5.2.3 Baseline Emissions

GHD reviewed the calculation methodology used by Tradewater and found it to be in accordance with the ACR Methodology. The Project Proponent utilized Equation 2 from the ACR Methodology to calculate Baseline Emissions. GHD reviewed the refrigerant sample analysis reports as certified by the laboratory to confirm composition.

GHD reviewed mass determination procedures and the mass used in Tradewater calculations. Per the ACR Methodology, Tradewater has removed mass applicable to the high boiling residue, moisture, and ineligible ODS (as determined by the laboratory analysis).

GHD confirmed Tradewater used the correct 10-year cumulative emission rate and 100-year global warming potential for the R-11 and R-12 refrigerants.

GHD performed an independent calculation of baseline emissions and found no discrepancy to Tradewater's GHG Assertion, Monitoring Report and GHG Project Plan.

8.6 Monitoring Plan

GHD reviewed the monitoring plan for this Project and determined that the parameters monitored and the approach taken by the Project Proponent to determine the emission reduction conforms to the ACR Methodology.

Per Section V (2) of the Monitoring Report, the following information should be included and documented in the Monitoring Plan:

- Personnel names and roles/responsibilities for each party involved in monitoring the offset project
- Description of the GHG management system employed including:
 - The location and recordkeeping/retention requirements for all stored data
 - Methods used to generate data
 - Transfer points and methods of non-automated transfer of data
- Calibration procedures and the frequency with which calibration and other maintenance requirements are performed
- Internal audit and other quality assurance/quality control procedures
- Sampling methods utilized and performed during the reporting period

Per Section 6.1 of the ACR Methodology the following information should be included and documented as part of project Monitoring (excluding those items not applicable to this specific project):

- Source of ODS including owner, physical address, serial or ID number of containers and additional information as applicable.
- Chain of custody and ownership of the ODS including contact information and mass of ODS.
- For projects destroying ODS sourced from government stockpiles or inventories, the Project Proponent must maintain documentation that the ODS is not required to be destroyed or converted.
- Composition and mass analysis information including sample time and date, name of Project Proponent and technician taking sample, employer of technician taking sample, volume of sample container, ambient air temperature and sampling chain of custody.
- Information from the destruction facility on parameters of destruction including feed rate, operating temperature and pressure, effluent discharge and emissions of carbon monoxide during destruction (if applicable)
- Information showing conformance with the procedures in Appendix B: ODS Mass and Composition – Quantification Methodology of the ACR Methodology.
- Evidence of minimum quarterly inspections for scales per and calibrations per an RCRA permit, or for non-RCRA facilities, calibrated at least quarterly to 5% or better accuracy.
- Retention of documentation including all data inputs for emission reductions calculations including sampled data, project-related regulatory permits, destruction facility monitoring and maintenance information, chain of custody and sourcing documentation and ODS composition and mass determinations.

GHD reviewed the Monitoring Plan and confirmed that the above information was included as required per the ACR Methodology.

8.6.1 Parameters to be Monitored

The following parameters have been monitored by Tradewater.

Parameter	Mass of ODS mixture in each container
Unit	Kilograms
Description	The total quantity of ODS refrigerant in a container.
Methodology Section	Manual weight tickets taken pre and post destruction for each individual container
Source of Data	Section 5.1 of Methodology
Data uncertainty	Low

Parameter	Mass of ODS mixture in each container
Monitoring Frequency	Once per project
Reporting Procedure	Gross weight of cylinders using calibrated scale, taken before and after destruction
QA/QC	Scale calibrations, CEMs data confirms destruction parameter throughout process

Parameter	Concentration of ODS mixture in each container
Unit	Percent
Description	The distribution of ODS refrigerant in each container (along with any other contaminants, moisture, or HBR)
Methodology Section	Sample data via lab analysis provided by an ISO 17025 certified third-party laboratory
Source of Data	Appendix C of Methodology
Data uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Lab analysis report
QA/QC	Composition and concentration are analyzed at an ISO 17025-certified laboratory that is not affiliated with the project proponent using the AHRI Standard 700.

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

Parameter	Q_{ODS}
Unit	MT
Description	The total quantity of ODS refrigerant (including the mass of all eligible and ineligible ODS, moisture, HBR, and other accompanying material), transported to the destruction facility.
Methodology Section	Weight tickets taken both pre- and post-destruction coupled with lab analysis and quantifications
Source of Data	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	Scale calibrations performed CEMs data confirms destruction; lab analysis confirms mass percentage and identification of ODS refrigerant

Parameter	Legal Requirement Test
Unit	N/A
Description	Emissions reductions achieved through this project and methodology must not be required by any existing law or regulation
Methodology Section	Section 3.3.1
Source of Data	Thailand Customs Department and The National Ozone Protection Division from the Department of Industrial Works (DIW)
Data uncertainty	Low
Monitoring Frequency	Once per project
Reporting Procedure	Review of existing laws around ODS refrigerant management
QA/QC	Regular review of current laws and regulations surrounding ODS refrigerants, particularly CFCs

8.7 Summary of Discrepancies, Omissions, Misreporting, Misstatements or Non-Compliances Identified

Quantitative materiality for the verification is set at plus or minus 5% of the total reported emissions. The quantitative aggregated magnitude of errors, omissions, and misstatements for Tradewater’s reported emissions reductions is 0.0%, which is less than the materiality threshold of 5%.

Based on this review, GHD has provided an Offset Validation/Verification Statement (Appendix D) attesting that GHD has found the Monitoring Report free of material misstatements.

8.8 Independent Review

On May 10, 2023, Deacon Liddy of GHD, independently reviewed the validation and verification services and findings, including the validation/verification plan, validation/verification report, validation/verification statement, and internal documents.

Based on the independent review conducted of the validation/verification services and findings, GHD's independent reviewer concurred with the validation/verification findings of the validation/verification team.

9. Validation/Verification Statements

GHD has prepared this Validation/Verification Report for Tradewater. Tradewater was responsible for the preparation and fair presentation of the GHG Project Plan and GHG Monitoring Report in accordance with the criteria and engaging with a qualified third-party validator/verifier to validate/verify the Project Documentation. Tradewater’s GHG-related activity is detailed in Section 5.2.

GHD’s objective and responsibility was to provide an opinion regarding whether the Project’s GHG Project Plan and GHG Monitoring Report were free of material misstatements and that the information reported is a fair and accurate representation of the operations for the reporting period, and accurate and consistent with the requirements of the ACR and associated criteria. The criteria used by GHD for the validation/verification of the Project documentation is detailed in Section 4.0. GHD completed the validation/verification of the Project documentation in accordance with ISO 14064-3:2019 and the ACR Standard and Methodology. GHD completed the verification to a reasonable level of assurance.

9.1 Validation Conclusion

GHD reviewed the GHG Project Plan for Tradewater – Thailand 2 and determined that it conforms to the requirements outlined in the ACR Standard and Methodology. In addition, GHD determined that there are no qualifications regarding the validation opinion. The Validation Statement will be submitted to the ACR and is provided in Appendix D.

9.2 Verification Conclusion

GHD's and Tradewater's calculated baseline emissions, project emissions and Emission Reduction Tonnes (ERTs) for the Project are provided below.

Emission Type	Project Proponent's Calculation (MT CO ₂ e)	GHD Calculation (MT CO ₂ e)
Total Baseline Emissions	207,219	207,219
Total Project Emissions	13,855	13,855
Total ERTs for reporting period in 2023	193,364	193,364

The Offset Verification Statement will be submitted to the ACR and is provided as Appendix D. The emission reduction value from this project is 193,364 metric tonnes of CO₂e.

GHD determined with a reasonable level of assurance that the Project was free of an offset material misstatement. This resulted in a Positive Offset Verification Statement for the emissions reductions with no qualifications.

10. Limitation of Liability

Because of the inherent limitations in any internal control structure, it is possible that fraud, error, or non-compliance with laws and regulations may occur and not be detected. Further, the verification was not designed to detect all weakness or errors in internal controls so far as they relate to the requirements set out above as the validation/verification has not been performed continuously throughout the period and the procedures performed on the relevant internal controls were on a test basis. Any projection of the evaluation of control procedures to future periods is subject to the risk that the procedures may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.

The validation and verification opinions expressed in this report has been formed on the above basis.

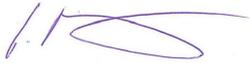
GHD's review of the GHG Project Plan and GHG Monitoring Report for the Reporting Period included only the information discussed above. While the review included observation of the systems used for determination of the Project documentation, GHD did not conduct any direct field measurements and has relied on the primary measurement data and records provided by Tradewater as being reliable and accurate. No other information was provided to GHD or incorporated into this review. GHD assumes no responsibility or liability for the information with which it has been provided by others.

The information and opinions rendered in this report are exclusively for use by Tradewater. GHD will not distribute or publish this report without Tradewater's consent except as required by law or court order. The information and opinions expressed in this report are given in response to a limited assignment and should only be evaluated and implemented in connection with that assignment. GHD accepts responsibility for the competent performance of its duties in executing the assignment and preparing this report in accordance with the normal standards of the profession but disclaims any responsibility for consequential damages.

11. Closing

This document has been prepared in accordance with the Standard and the Methodology. The verification presented in this Report was conducted to a reasonable level of assurance.

All of Which is Respectfully Submitted,
GHD Services, Inc.



Gordon Reusing, Lead Validator/Verifier



Anothai Setameteekul, Co-Lead Validator/Verifier



Deacon Liddy, Internal Reviewer

Appendices

Appendix A

Validation/Verification Plan

Our ref: 12588069-LTR-1

May 11, 2023

Ms. Adriana Vargas Corrales
Verification and Logistics Associate
Tradewater, LLC
San Jose, Costa Rica

Validation/Verification Plan – Tradewater - Thailand 2
ACR Project ID: ACR839
Methodology for the Quantification, Monitoring, Reporting and
Verification of Greenhouse Gas Emissions Reductions and Removals
from the Destruction of Ozone Depleting Substances from International Sources, Version 1.0

Dear Ms. Corrales

1. Introduction

GHD Services Inc. (GHD) was engaged by Tradewater, LLC (Tradewater) to conduct independent third-party greenhouse gas validation and verification services for Tradewater - Thailand 2 (the Project) involving the destruction of Ozone Depleting Substances (ODS) listed under the American Carbon Registry (ACR). The Project uses a warehouse and a destruction facility operated by Waste Management Siam Company Ltd (WMS), in Samutprakarn, Thailand (Site). Tradewater is the Project Proponent of the Project.

This validation/verification covered reported emission reductions claimed by Tradewater during the monitoring period of February 7, 2023 to March 26, 2023. The crediting period is February 7, 2023 to February 6, 2033.

GHD is an ACR-approved GHG Validation/Verification Body (VVB) and is accredited by the American National Standard Institute (ANSI) National Accreditation Board (ANAB)¹ under ISO 14065 to provide project-level validation and verification services.

The ACR defines validation as "the systematic, independent, and documented process for the evaluation of a GHG Project Plan against applicable requirements of the ACR Standard, the applicable ACR-approved methodology, and any other applicable audit criteria." ACR defines verification as "the systematic, independent, and documented process for the evaluation of a GHG assertion against specific criteria. The verification process is intended to assess the degree to which a project has correctly quantified net GHG reductions or removals per the validated GHG Project Plan and correctly utilizes ACR methodologies and tools. A successful verification provides reasonable assurance that the GHG assertion is without material misstatement."

GHD has prepared this Validation/Verification Plan in accordance with ISO Standard *ISO 14064 Greenhouse gases Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*

¹ ANAB is a member of the International Accreditation Forum (IAF).

(ISO 14064 3:2019), and the requirements of the ACR Standard version 7.0 and the Validation/Verification Standard version 1.1.

Tradewater is the Project Proponent for the Project, and is responsible for the preparation and fair presentation of the GHG Project Plan, Monitoring Report and emissions reductions.

GHD is a recognized validation/verification body under ANAB for projects within the following scopes:

- Sector 1: GHG emission reductions from fuel combustion
- Sector 2: GHG emission reductions from industrial processes (non-combustion, chemical reaction, fugitive and other)
- Sector 3: Land Use and Forestry
- Sector 4: Carbon Capture and Storage
- Sector 5: Livestock
- Sector 6: Waste handling and disposal

This Project falls under ANAB project-level Sector 2: GHG emission reductions from industrial processes.

2. Validation/Verification Objectives

The objectives of the validation/verification were to provide Tradewater and the ACR with opinions on whether the GHG Project Plan and Monitoring Report met the validation and verification criteria identified in the ACR Standard, V/V Standard, ODS Methodology, other applicable validation and verification criteria and whether they contained any material discrepancies.

The scope of services was to have an independent third-party validate and verify the Project. The validation included an assessment of the Greenhouse Gas Project Plan (GHG Project Plan) to ensure the Project conforms to the project boundaries, project baselines, additionality, quantification methods and other project criteria as defined in the ACR Validation and Verification Standard. The verification included a review of the Monitoring Report and emission reductions that the Project claimed during the reporting period to ensure they were calculated in accordance with the ACR Standard and the Methodology. The Project was reviewed for compliance with the ACR criteria and relevant guidance provided by the ACR.

GHD reviewed the GHG Project Plan, Monitoring Report and related information and prepared a Validation/Verification Report and Validation/Verification Statement for the monitoring period. GHD submitted the Validation/Verification Report and Validation/Verification Statement to the ACR project database.

3. Level of Assurance

The validation/verification was conducted to a reasonable level of assurance as per the requirements of the ACR standard.

Based on this level of assurance, GHD determined whether:

- The GHG Project Plan and Monitoring Report were prepared in accordance with the requirements of the ACR Standard and in accordance with the applicable GHG quantification, monitoring and reporting, standards or practices.
- The Project assertions were materially correct, free of misstatements and an accurate representation of the GHG data and information.

If validation/verification statements could be provided, they were worded in a manner to meet the requirements set forth in the ACR standard.

4. Validation/Verification Standards

The ACR standard currently lists 14064-3:2006 as the applicable standard. GHD followed the newer ISO 14064-3:2019 validation/verification standard, which also met the requirements of the older standard.

5. Validation/Verification Criteria

For this validation/verification, GHD applied the following validation/verification criteria:

- ISO 14064 Greenhouse Gases - *Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*, ISO, April 2019 (ISO 14064-2-2019)
- ISO 14064 Greenhouse gases – *Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*, ISO, April 2019 (ISO 14064-3-2019)
- *The American Carbon Registry Standard, Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project Based GHG Emissions Reductions and Removals*, Version 7.0, December 2020 (ACR Standard)
- *The American Carbon Registry Validation and Verification Standard*, Version 1.1, May 2018 (ACR V/V Standard)
- *Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources*, Version 1.0, dated April 2021 (ACR Methodology)

Note:

* Denotes change from Proposal

6. Validation/Verification Team and Peer Reviewer

The Validation/Verification Team consists of the following members:

Lead Validator/Verifier	
Name	Gordon Reusing, M.Sc., P. Eng.
Role	The lead validator/verifier co-lead the validation/verification and was responsible for development of the validation/verification plan. The lead validator/verifier reviewed the risk assessment, recalculation of raw data, data management and draft findings. The lead validator/verifier prepared and signed the validation/verification statement and validation/verification report.
Qualifications	Mr. Reusing is a greenhouse gas (GHG) Lead Verifier, Lead Validator, and Peer Reviewer with extensive experience including GHG programmes in Alberta, British Columbia, Ontario, Quebec, Nova Scotia, California, and programmes operated by the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM), The Gold Standard, The Climate Registry (TCR), the Carbon Disclosure Project (CDP), and Verra: Verified Carbon Standard (VCS). Mr. Reusing has completed numerous GHG quantification studies for the oil and gas sector, including upstream, midstream, and downstream facilities. Mr. Reusing has conducted GHG verifications as a Lead Verifier, Technical Expert and Peer Reviewer in many jurisdictions, including, but not limited to, the Alberta Carbon Competitiveness Incentive Regulation (CCIR), Ontario Regulations, British Columbia Greenhouse Gas Reduction (Cap and Trade) Act, (B.C. Reg. 272/2009), and Quebec Regulation R.Q.c.Q 2, r.15 (Quebec Regulation).

Co-Lead Validator/Verifier	
Name	Anothai Setameteekul, P. Eng.
Role	The lead validator/verifier co-lead the validation/verification and was responsible for development of the validation/verification plan. The lead validator/verifier reviewed the risk assessment, recalculation of raw data, data management and draft findings. The lead validator/verifier prepared and signed the validation/verification statement and validation/verification report. The co-lead validator/verifier conducted a remote Site assessment of the Project Site.
Qualifications	<p>Ms. Setameteekul is a GHG and Air Emissions Engineer based in GHD's Calgary office and is a licensed Professional Engineer in the provinces of Alberta and Saskatchewan. She has extensive knowledge and experience in GHG quantification and verification in particular industrial facilities – Oil Sands (In Situ, Mining, Upgrader operations), Hydrogen Production, Petrochemical, Cement, Refinery, Natural Gas Processing, Natural Gas Power Generation with Cogeneration, and Steel Manufacturing. She is familiar with the GHG Regulation in Canadian jurisdictions including British Columbia, Alberta, and Ontario. Ms. Setameteekul is also accredited by the California Air Resource Board as a lead verifier of greenhouse gas emissions for Oil and Gas system, process emissions sectors, fuel pathways, alternative fuel transactions and petroleum-based fuel report. Ms. Setameteekul is also accredited by the Washington State as a verifier. Ms. Setameteekul also has experience working in the accreditation audit process for GHD by ANAB and has training and knowledge of the ISO 14064 and ISO 14065 standards.</p> <p>Ms. Setameteekul graduated with a Masters degree in Industrial System Engineering from the University of Regina. Ms. Setameteekul worked as a research assistant in International Testing Center for CO2 Capture (ITC). Her work was related to CO2 capture using chemical absorption process. Ms. Setameteekul also worked as a process engineer to evaluate process performance such as process efficiency, air emissions, liquid effluent, waste, and utility consumption at a carbon capture test facility.</p>

Verifier	
Name	Angela Kuttemperoor, E.I.T.
Role	The verifier was responsible for providing support with development of the validation/verification plan, risk assessment, recalculation of raw data, data management and draft findings.
Qualifications	<p>Ms. Kuttemperoor is an Air Engineer-In-Training with GHD's Greenhouse Gas Assurances Services Team and has retained 1.5 years of experience in greenhouse gas verification work. Ms. Kuttemperoor is a Bachelors of Environmental Engineering graduate (co-op) from the University of Guelph, located in Guelph, Ontario. Ms. Kuttemperoor has involved in numerous verifications for the Ontario greenhouse gas reporting program under Ontario regulation 390/18, and the Federal OBPS program, for a wide variety of sectors. Ms. Kuttemperoor has involved in carbon offset project verifications for sites located within the United States and regulated under various voluntary offset credit programs including the Climate Action Reserve (CAR), Verra: Verified Carbon Standard (VCS) and The Climate Registry (TCR). Ms. Kuttemperoor has experience with verifications for ODS offset projects regulated by the California Air Resources Board (ARB).</p>

Peer Reviewer	
Name	Deacon Liddy, P. Eng.
Role	The peer reviewer conducted a peer review of the validation/verification plan, risk assessment, validation/verification report and findings.
Qualifications	Mr. Liddy is a Principal with GHD and an experienced GHG validator and verifier, having completed over 100 GHG validation/verifications with 17 years of experience. Mr. Liddy works with large industrial facilities, Provincial governments, and offset project developers to complete risk-based verifications. Mr. Liddy has been the lead verifier for completion of greenhouse gas verifications conducted on behalf of Alberta Environment for emission offset projects for landfill gas, biomass, tillage, composting and fuel switching for lumber kilns. Mr. Liddy has completed verifications of greenhouse gas emission intensity baseline applications and annual compliance reports under the Alberta Specified Gas Emitters Regulation and British Columbia Mandatory Reporting Regulation. Mr. Liddy is a professional engineer in BC, Alberta, and Saskatchewan.

GHD informed Tradewater if the project team needed to change due to resourcing issues.

7. Project Description

The Project involves the destruction of eligible ODS refrigerant which was obtained from a government stockpile of ODS stockpiled on or before 2007 at the Thailand's Customs Department on or before 2007. The ODS material was aggregated at the WMS Warehouse, prior to transport to the WMS destruction facility in Samutprakarn, Thailand.

8. Validation/Verification Scope

The following sections describe the scope of the validation/verification.

8.1 Client Contact

Ms. Adriana Vargas Corrales and Mr. Tip Stama were GHD's contacts at Tradewater for this validation/verification.

8.2 Emission Sources and Sinks

The Projects' reportable GHG emissions sources and sinks included:

Baseline

- Emissions of ODS from use, leaks and servicing through continued operation of equipment (ODS)

Project

- Emission of substitute refrigerant production (CO₂e)
- Fossil fuel emissions from the vehicular transport of ODS from aggregation point to final destruction facility (CO₂)
- Emissions of substitute from use, leaks and servicing through continued operation of equipment (CO₂e)
- Emissions of ODS from incomplete destruction at destruction facility (ODS)
- Emissions from oxidation of carbon contained in destroyed ODS (CO₂)
- Fossil fuel emissions from the destruction of ODS at destruction facility (CO₂)
- Indirect emissions from the use of grid-delivered electricity (CO₂)

8.3 Sources, Sinks, and Reservoirs

The following table presents the sources, sinks, and reservoirs (SSRs) for the Project, their relevance to the baseline and Project operations. Each GHG SSR was confirmed during the Site Visit and through a review of calculations.

SSR		Source Description	Gas	Included (I) or Excluded (E)
1.	ODS Collection	Fossil fuel from the collection and transport of ODS sources	CO ₂ CH ₄ N ₂ O	E
		Emissions from the production of the BA	HFC or Low GWP BA	E
2.	ODS Recovery and Collection	Emissions of ODS from the recovery of ODS at end-of-life or servicing	ODS	E
		Fossil fuel emissions from the recovery and collection of refrigerant at end-of-life or serving	CO ₂ CH ₄ N ₂ O	E
3.	ODS Use	Emissions of ODS from equipment use, leaks and servicing	ODS	E
		Fossil Fuel emissions from the operation of refrigerant and A/C equipment	CO ₂ CH ₄ N ₂ O	E
4.	Substitute Refrigerant Production	Emissions of substitute refrigerant production	CO ₂ e	E
		Fossil Fuel emissions from the production of substitute refrigerant	CO ₂ e CH ₄ N ₂ O	E
5.	Transport to Destruction Facility	Fossil fuel emissions from the vehicular transport of ODS from aggregation point to final destruction facility	CO ₂ CH ₄ N ₂ O	I E E
6.	ODS Use	Emissions of ODS from use, leaks and servicing through continued operation of equipment	ODS	I
		Emissions of substitute from use, leaks and servicing through continued operation of equipment	CO ₂ e	I
		Indirect emissions from grid-delivered electricity	CO ₂ CH ₄ N ₂ O	E

SSR		Source Description	Gas	Included (I) or Excluded (E)
7.	Destruction	Emissions of ODS from incomplete destruction at destruction facility	ODS	I
		Emissions from oxidation of carbon contained in destroyed ODS	CO ₂	I
		Fossil fuel emissions from the destruction of ODS at destruction facility	CO ₂	I
			CH ₄	E
Indirect emissions from the use of grid-delivered electricity	N ₂ O	E		
	CO ₂	I		
	CH ₄	E		
		N ₂ O	E	

8.4 Project Geographical and Operational Boundaries

This validation/verification covers the aggregation of the ODS material at the WMS warehouse and destruction at the destruction facility located at the following address:

Waste Management Siam Company Ltd Destruction Facility
 965 Moo 2 Soi 3B Bangpoo Industrial Estate
 Sukhumvut Rd Bangpoo Mai
 Muang Samutprakarn
 Samutprakarn 10280
 Thailand

8.5 Reporting and Compliance Period

The reporting period is February 7, 2023 – March 26, 2023.

8.6 Project Deviations

The Project involved one deviation which consisted of a deviation from the ACR Methodology for the calculation of the weight of ODS destroyed. The deviation was approved by the ACR on April 10, 2023.

8.7 Use of this Report

The validation/verification report was prepared for the use of Tradewater and the ACR.

Statements from GHD's Validation/Verification Report must use the language in which the statement was issued, reference the date of issuance of GHD's report, the applicable validation/verification period and the associated program for which the validation/verification was conducted. The GHD mark shall not be used by Tradewater in any way that might mislead the reader about the validation/verification status of the organization. The GHD mark can only be used with the expressed consent of GHD and, then, only in relation to the specific time period verified by GHD.

8.8 Use of Information and Communication Technology

As part of the verification process, GHD utilized information and communication technology (ICT) in accordance with IAF Mandatory Document for the use of Information and Communication Technology for Auditing/Assessment Purposes (IAF MD 4:2018) for various aspects of the verification, including conducting video/tele-conferencing with various personnel and a remote site assessment.

The decision to use ICT was permissible if GHD and the client agreed on using ICT. The agreed ICT method was MS Teams. By accepting GHD's proposal, Tradewater agreed to the use of the afore mentioned ICT

method and its associated information security, data protection and confidentiality measures. Any other ICT method(s) were agreed to in writing (email) between GHD and Tradewater prior to use. The parties did not agree to the use of an ICT method for which either party did not have the necessary infrastructure to support. Throughout the entire verification process, including use of ICT, GHD abided by the confidentiality procedures

9. Site Visit Requirement

ACR requires an in-person site visit per calendar year. During the validation/verification of Tradewater International – Thailand 1.0, GHD conducted a site visit to the destruction facility in November 2022.

The ODS Methodology requires a site visit every calendar year for a project. Clarification was requested from ACR on the timing requirement for the next site visit for Tradewater ODS projects in Thailand. Mr. Megesh Tiwari from ACR stated in an email dated December 21, 2022, the following:

“One year refers to a calendar year (Jan 1 to Dec 31). However, if the VVB will be verifying multiple projects for TW in 2023 that involves ODS destruction at the Thailand facility, then the in person site visit can be conducted for any one of the projects verified in 2023. Especially, since the last in person site visit was conducted on Nov 2022, the next one can be timed for 3rd quarter of 2023 (if there are any projects planned for that time).”

The ACR subsequently prescribed the need for a remote Site Assessment for Project Tradewater – Thailand 2, which was conducted by GHD during the validation/verification.

10. Validation/Verification Schedule

GHD is committed to providing efficient and effective services to all of its clients. In order for GHD to maintain a strict schedule, it is the responsibility of Tradewater to maintain adherence to the proposed schedule.

Schedule Item	Date
Contract is signed by Tradewater	March 9, 2023
Tradewater provides GHG Project Plan and associated documents to GHD	March – May 2023
GHD sends Validation/Verification Plan to Tradewater	April 13, 2023
Remote Site visit	May 1, 2023
GHD Verification Team issues a summary of findings to Tradewater	April – May 2023
Tradewater submits documentation addressing all findings to GHD	April – May 2023
Independent review	May 10, 2023
Issued Draft Validation/Verification Report	Within 1 week following completion of the independent review
Closeout meeting (if necessary)	Within 1 week of provision of the Draft Offset Verification Report
Issue Final Validation/Verification Report and Statement	Within 1 week of the Closeout meeting

GHD notes that approval for commencement of the Project from ACR was received on March 21, 2023.

11. Strategic Analysis

GHD has performed a strategic analysis to understand the activities and complexity of the project to determine the nature and extent of the validation/verification activities. The information considered in the strategic analysis is documented in GHD's working papers and was used to inform the assessment of risks and the development of an Evidence-Gathering Plan (EGP).

12. Assessment of Risk and Magnitude of Potential Errors, Omissions or Misrepresentations

GHD conducted an assessment of the risk and magnitude of potential errors, omissions or misrepresentations associated with the facility or project assertions. The strategic analysis supported an understanding of the nature, scale and complexity of the facility or project. GHD then identified areas where qualitative or quantitative errors could occur and assigned risks to the areas. The inherent and control risks were evaluated and detection risks were established. The risks were identified as high, medium and low. The risk assessment was a key input to developing an effective evidence gathering plan.

13. Evidence Gathering Plan

GHD developed an Evidence -Gathering Plan (EGP) for internal use based on review of the objectives, criteria, scope, and level of assurance detailed above. The EGP was designed to lower the verification risk to an acceptable level and specify the type and extent of evidence gathering activities. The EGP was reviewed and approved by the Lead Validator/Verifier prior to issuing the verification plan. The EGP is dynamic and was revised, as required, throughout the course of the verification. Any modifications to the EGP were reviewed and approved by the Lead Validator/Verifier, with the final EGP completed prior to issuing the final validation/verification report and opinion.

14. Quantitative Testing

Quantitative data or raw data was made available to GHD. GHD assessed the completeness of the data and evaluated the GHG emission calculation methodologies to ensure they were consistent with ACR requirements. GHD recalculated the emission estimates based on the underlying activity data in order to determine whether material misstatements were present.

15. Materiality Level

As per the ACR Standard Section 9B, ACR requires that discrepancies between the emission reductions/removal enhancements claimed by the Project Proponent and estimated by the VVB be immaterial. The ACR's materiality threshold is $\pm 5\%$. Individual or aggregation of errors or omissions greater than the ACR materiality threshold require re-stating before a verification statement will be accepted.

16. Validation/Verification Procedures

16.1 Validation Process

The objectives of the validation are to evaluate:

- Conformance to the ACR Standard.
- GHG emissions reduction project planning information and documentation in accordance with the applicable ACR-approved methodology, including the project description, baseline, eligibility criteria, monitoring and reporting procedures, and quality assurance/quality control (QA/QC) procedures.
- Reported GHG baseline, ex ante estimated project emissions and emission reductions/removal enhancements, leakage assessment, and impermanence risk assessment and mitigation (if applicable).

The validation includes examination of all of the following elements of the GHG Project Plan:

- Project boundary and procedures for establishing the project boundary
- Physical infrastructure, activities, technologies, and processes of the project
- GHGs, sources, and sinks within the project boundary
- Temporal boundary
- Description of and justification for the baseline scenario
- Methodologies, algorithms, and calculations that will be used to generate estimates of emissions and emission reductions/removal enhancements
- Process information, source identification/counts, and operational details
- Data management systems
- QA/QC procedures
- Processes for uncertainty assessments
- Project-specific conformance to ACR eligibility criteria

GHD's validation process is in accordance with ACR's Validation and Verification Standard which includes the following:

Validating Project Boundaries

GHD validated the Project boundaries outlined in the GHG Project Plan which included the following:

- Physical or geographic boundaries
- GHG assessment boundary
- Temporal boundary

Validating Project Baselines

GHD confirmed that the type of baseline applied by the Project Proponent in the GHG Project Plan is appropriate per the Methodology. GHD ensured there is verifiable data for the baseline scenario, including selection rationale and justification, the guidance followed for baseline emissions estimation, and consistency across post-base year project emissions calculations.

Validation of the project baseline included:

- The explanation provided for how the baseline scenario was selected, including assessment of alternative baseline scenarios and their associated barriers and benefits.
- Data associated with the base year chosen, and consistency in implementation of emissions estimating guidance for the baseline and project emissions.

Baseline validation may include the following activities, data, and evidence sources (as informed by the VVB's professional judgment); however not all of these are required:

- Interviews with the Project Proponent to determine how baseline emissions have been quantified.
- Review of sufficient documentation for any baseline emissions sources that contribute to total emissions by more than 3% to confirm that estimates have been addressed per stated measurement and monitoring plans, and that the estimations have been applied consistently and uniformly.
- Check consistency with the appropriate guidance, as well as consistency in applying the guidance across baseline and project activity reporting periods.

Validating Additionality

Additionality is a test intended to ensure that project offsets are in addition to reductions and/or removals that would have occurred in the absence of the project activity and without carbon market incentives. Project Proponents must demonstrate that the GHG emission reductions and removals associated with an offset project are above and beyond the “business as usual” scenario. To qualify as additional, ACR requires every project to pass either an approved performance standard and a regulatory additionality test, or a three-pronged test of additionality.

According to the ACR ODS Methodology applicable to this Project, the additionality is determined based on an approved performance standard and a regulatory additionality test:

- Regulatory Additionality Test

The regulatory surplus (additionality) test involves existing laws, regulations, statutes, legal rulings, or any other regulatory frameworks that directly or indirectly affect GHG emissions associated with a project action or its baseline candidates, and that require technical, performance, or management actions. Project Proponents must provide clear evidence in the GHG Project Plan that the GHG reduction/removal activity is not required by any applicable federal, Tribal, state, or local laws, regulations, ordinances, consent decrees, or other legal arrangements. Only mandatory regulations, not voluntary guidelines, are considered in the regulatory surplus test:

- Performance Standard Test

ACR recognizes the “performance standard” approach, in which additionality is demonstrated by showing that a proposed project activity is surplus to all applicable regulations, and either is characterized by very low adoption rates in the relevant industry and geographic region, or results in lower emissions (or higher sequestration) than a benchmark established for the relevant region, industry/sector, and practice.

For performance standards in which additionality is demonstrated by comparison to common practice adoption rates of a particular GHG-reducing practice or technology, the VVB need only check that an approved methodology was applied (ACR ODS Methodology).

Validating Quantification Methods

ACR requires every project submitted for registration to use an ACR-approved methodology or secure ACR approval of a new methodology or methodology modification prior to validation.

GHD validated the following:

- The quantification method for each data parameter is clearly defined, and supporting documentation provided is adequate to support the level of assurance required.
- The methods are appropriate for accurately quantifying each data parameter based on the required level of assurance.
- The methods are applied consistently to develop estimates of emission reductions and removal enhancements.
- The principle of conservativeness is applied.

GHD evaluated whether the emissions data, activity data and emission factors described in the GHG Project Plan, met the requirements of the ACR ODS Methodology.

Validating Other Project Criteria

In addition to the above, GHD reviewed the following components within the GHG Project Plan:

- Start date
- Crediting period
- Minimum project term
- Offset title
- Impermanence and risk mitigation
- Leakage
- Environmental and community impacts
- Double issuance, double selling, and double use of offsets
- Projects participating in other offset programs

16.2 Verification Process

The following sections outline GHD's verification process.

Information/Records Reviewed

Information/records reviewed by GHD included the following:

- GHG Project Plans
- GHG Assertions
- Operational and control procedures and records for ensuring GHG data quality
- Documentation of GHG Sources, Sinks and Reservoirs
- Documentation of quantification methodologies
- Documentation of monitoring and measurement systems

Data Assessment and Management Systems

GHD reviewed the data assessment and management system documentation that describes the process of data collection, entry, calculation, and management. GHD reviewed the following:

- Selection and management of GHG data and information
- Processes for collecting, processing, aggregating, and reporting
- Systems and processes to ensure accuracy
- Design and maintenance of the GHG data management system, including systems and processes that support it

GHD assessed the effectiveness of the data management system and determined areas of risk.

Collection of Evidence

GHD collected physical, documentary, and testimonial evidence to verify the Project.

Evidence Gathering Plans; Risk-Based Approach

GHD followed a risk-based validation/verification approach in developing the validation/verification plan and evidence gathering plan. As such, GHD identified the key reporting risks. Key issues in validation/verification include, but are not limited to, validation/verification of correct use of emission factors and conversion factors, and consistency in aggregation of emissions data. Wherever practical, direct reading instruments were used to ensure that any reporting risks are kept with equipment and instrumentation performance limits.

GHD used a risk-based approach for on-site investigation conducted during the validation/verification process. The Lead Validator/Verifier followed the audit trails and data sets on site for specific indicators, and cross-check with the Monitoring Report, GHG Project Plan, the Methodology, records, and latest versions of the ACR Standard. Direct reading instrumentation and redundancy in the data used to support the validation/verification was identified in the verification reporting.

GHD focused on the key areas identified as follows, during the remote Site Assessment:

- An assessment of the implementation and operation of the Project per the GHG Project Plan.
- A review of information flows for generating, aggregating, and reporting the monitoring parameters.
- Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the GHG Project Plan.
- A cross-check between information provided in the monitoring report and data from other sources such as plant log books, inventories, purchase records, or similar data sources.
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the GHG Project Plan and Methodology.
- A review of calculations and assumptions made in determining the GHG data.
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

Error Checking/Testing

GHD independently calculated the final emission reductions using Tradewater's raw data to ensure that the correct Methodology and raw data was used.

During the verification process, GHD considered both quantitative and qualitative information on emission reductions. Quantitative data is comprised of the Monitoring Report submitted to the Project Verification Team by the Project Proponent. Qualitative data is comprised of information on internal management controls, calculation and transfer procedures, frequency of emissions reports, and review and internal audit of calculations/data transfers.

Verification of Quantification Methods and Data Sources

GHD verified the quantification methods and data sources used are in accordance with the ACR ODS Methodology. This included but not be limited to the identification and quantification of errors, ensuring appropriate estimate methods, determining accuracy of quantification data and metering equipment and conducting desktop audits of data and calculations. GHD will at a minimum review applicable spreadsheets, source data and emission factors, how data are collected and aggregated, meter calibrations and original data records.

Verification of Leakage

Leakage is a decrease in sequestration or increase in emissions outside project boundaries as a result of project implementation. Leakage may be caused by shifting of the activities of people in the project area or by market effects whereby emission reductions are countered by emissions created by shifts in supply of and demand for the products and services affected by the project.

Some ACR-eligible project types require leakage to be assessed and, if deemed significant, deducted from the calculation of net emission reductions. Requirements to assess and deduct leakage will be included in the ACR-approved methodology. The ACR ODS Methodology does not require a leakage assessment.

Summary of Findings

If during the verification of the Projects, the Project Team identifies issues to be addressed to confirm that the Project meets the ACR requirements, the Lead Validator/Verifier issued findings to the Project Proponent. It is imperative that these issues were transparently identified, discussed, and concluded in the Validation/Verification Report.

Iterations of these requests will be continued until such a time as the Lead Validator/Verifier could adequately resolve or “close out” the identified findings.

16.3 Peer Review, Validation/Verification Report and Statement

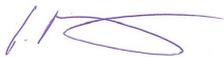
The validation and verification processes described above were documented in a draft validation/verification report (Report) and statement. The ACR allows a combined Report for the first project. The Report was prepared in accordance with the ACR Validation/Verification Standard. The draft Report was subject to a peer review. Any additional findings as a result of the peer review were presented to the Project Proponent. Upon receipt of the Project Proponent's response, the Project Team issued the draft Report to the Project Proponent. After review by the Project Proponent the final Report was submitted to the Project Proponent and ACR along with the completed Validation/Verification Statement.

17. Closure

The Validation/Verification Plan is considered to be a dynamic document that may require modification and adaptation to conditions as encountered during the completion of the Validation/Verification process. GHD communicated any changes, if applicable, to the validation/verification plan with Tradewater.

Regards

GHD Services, Inc.



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Copy to: Angela Kuttemperoor

Appendix B

Document Review Reference List

APPENDIX B - DOCUMENT REVIEW REFERENCE LIST

Tradewater, LLC

Tradewater - Thailand 2 Project Validation and Verification

No.	Document Title	Description
1	2023.03.09 GHG Project Plan TWI Thailand 2 2023.04.20 GHG Project Plan TWI Thailand 2 V2 2023.04.20 GHG Project Plan TWI Thailand 2 V3 2023.05.04 GHG Project Plan TWI Thailand 2 V3 2023.05.08 GHG Project Plan TWI Thailand 2 V4 (final version)	Project Plan
2	05.05.2023 Monitoring Report Thailand 2- Signed 05.08.2023 Monitoring report Thailand 2 V2 - signed 05.08.2023 Monitoring report Thailand 2 V2[1] (final version) 05.24.2023 Monitoring Report Thailand 2 V3 (revised, final signed)	Monitoring Report
3	Project Assertion Spreadsheet THA2_V1 Project Assertion Spreadsheet THA2_V1 (final version)	GHG Assertion
4	Certificate of Destruction 2023-04-05	Evidence of Destruction
5	TW ISO-02 ODS Sampling Certificate Sampling results Solubility Chart	Evidence of Sampling
6	Weight Ticket pre-destruction Weight Tickets post destruction Weight Ticket pre-destruction (signed weight forms) Weight Tickets post destruction (signed weight forms)	Weight Tickets
7	ContinuousData_TW-THA-2_v1.0	CEMS Data
8	Consolidation report (spreadsheet) 23.03.04 Consolidation report_Signed Consolidation report signed	ISO Filling Tank /Offset title
9	22.09.26 Transfer of ownership I 22.10.03 Transfer of ownership II 22.10.14 Transfer of ownership III 22.10.21 Transfer of ownership IV 22.10.27 Transfer of ownership V 22.11.14 Transfer of ownership VI	Transfer of Ownership Documentation WMS - Tradewater
10	Chain of custody Diagram Customs to WMS letter - English Customs to WMS letter - Thai Handling over the refrigerants seized under the Customs Department - English Handling over the refrigerants seized under the Customs Department - Thai Guidelines for the destruction of refrigerants under the supervision of Customs Department - Eng	Transfer of Ownership Documentation Customs to WMS
11	Guidelines for the destruction of refrigerants under the supervision of Customs Department - Thai Airway bills Annex 7 Proof of delivery	Sampling Chain of Custody
12	License Certified Services ISO IEC 17025	Bureau Veritas Compliance Documentation

APPENDIX B - DOCUMENT REVIEW REFERENCE LIST
Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

No.	Document Title	Description
13	BPEC latest permit BPEC Waste acceptance List Waste Receiving Capacity BPEC Residue Waste Stream Permit Big Scale Cer Detail Certificate of Calibration 2022 Calibration March CFC DRE 6th report R-12 result (Feb) air emission testing Hbr Freon 12_BPEC_8 Aug 65 (2) 2022.08.11 Destruction SOP's WMS- ACR 2022.09.08 Sampling procedure fo ISOs and B1000 2022.09.08 Transport and Storage procedure 2022.09.09 Maintenance Procedure 2022.09.14 Filling Procedure WMS Sampling Procedures Meeting attendee list Victor Molina Cert Ampol Ruttanasang Cert	WMS Compliance Documentation
14	2022.08.11 Destruction SOP's WMS- ACR -Eng BPEC_Feeding Area Connecting Port_ISO4_Sampling 1 Scale_BPEC 1 Scale_BPEC 2 Scale_BPEC 3 Scale_Plate Scale_SN1	BPEC Equipment images and SOP
15	ACR Methodology Deviation Request V2-0 THA2 Deviation Request ACR 839_Methodology Deviation Request_ODS Weighing Procedure_APPROVED	Deviation documenation
16	EXTRE EXTRE ODS Methodology Question	ACR TEAP information

APPENDIX B - DOCUMENT REVIEW REFERENCE LIST
Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

No.	Document Title	Description
13	BPEC latest permit BPEC Waste acceptance List Waste Receiving Capacity BPEC Residue Waste Stream Permit Big Scale Cer Detail Certificate of Calibration 2022 Calibration March CFC DRE 6th report R-12 result (Feb) air emission testing Hbr Freon 12_BPEC_8 Aug 65 (2) 2022.08.11 Destruction SOP's WMS- ACR 2022.09.08 Sampling procedure fo ISOs and B1000 2022.09.08 Transport and Storage procedure 2022.09.09 Maintenance Procedure 2022.09.14 Filling Procedure WMS Sampling Procedures Meeting attendee list Victor Molina Cert Ampol Ruttanasang Cert	WMS Compliance Documentation
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16	EXTRE EXTRE ODS Methodology Question	ACR TEAP information

Appendix C

Findings List

APPENDIX C - FINDINGS LIST

Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

Issue No.	Issues / Questions	Explanation/Response	Status
1	Typos or formatting errors in the GHG Project Plan: Date on title page of GHG Project Plan has a typo.	Corrected	Closed
	Typo on page 6 of GHD Project Plan, Table 1 caption "form".	Corrected	Closed
	Formatting error on page 8 of GHG Project Plan, excessive space between "1.Exceed regulatory/legal requirements;"	Corrected	Closed
	Page 9 of GHG Project Plan, Section A4. Location, includes typo "Waste Management Sia" should be "Siam".	Corrected	Closed
	Typo on plan page 11, Background Information Section "before in 2007" should remove "in".	Corrected	Closed
	Typo found in section above, after "took place. I", remove "I".	Corrected	Closed
	Excessive space found after B3. Project Boundary section	Corrected	Closed
	Page 9 of GHG Project Plan, the WMS destruction facility address includes "Samutprakarn", however Section A4 Location indicates that the Facility is in "Samut Prakan" province. Please ensure that the destruction facility location city and province, are consistently referenced with the correct spelling throughout the Project Plan.	Corrected TW response: corrected	Closed
	GHD Response: Address is not consistent throughout GHG Project Plan, where some places list Samutprakarn, Prakan, Thailand and other places list Samutprakarn, Samutprakarn, Thailand.		
	Please note that in Table 4, formulas for ODS Use are missing the close bracket. Also in Section E1. Baseline formula.	Corrected	Closed
	Typo in Section C4. Performance Standard Test "do not] mandate"	Corrected	Closed
	Section E2. Project scenario, parameter SE I, makes reference to Table 3 of the ACR Methodology, which is not included in the GHG Project Plan in the format of Table 5, Section B5. Baseline.	Corrected TW response: corrected	Closed
GHD Response: Section E2. Project scenario, parameter SE I, makes reference to Table 3 of the ACR Methodology, however the <i>Substitute Emissions</i> portion of Table 3 from the ACR Methodology is not included in the GHG PProject Plan.			
2	Page 9 of GHG Project Plan, Community and Environmental Impacts Section does not include the United Nations SDGs, that were included for TW International - Thailand 1.0.	In Thailand 1 review, ACR requested to change SDG 1 for SGD 9. Change was carried over to Thailand 2	closed
3	Should the ownership statement be in the location section or the ownership section?	Clarification on ownership added to the ownership section	closed

APPENDIX C - FINDINGS LIST

Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

Issue No.	Issues / Questions	Explanation/Response	Status
4	<p>Please provide the facility's TEAP report "Report of the Task Force on Destruction Technologies."</p> <p>GHD reviewed the correspondence with ACR regarding the eligibility of the Project for meeting TEAP standards. Please provide additional information in the GHG Project Plan that describes how the Project destruction methodology meets the performance criteria listed in the <i>Report of the Task Force on Destruction Technologies</i>, for criteria including DRE test, emissions of dioxins and furans, emissions of other pollutants, and technical capabilities, as the technology is not a currently approved destruction technology under TEAP.</p> <p>GHD Response: Please provide the testing results for all contaminants for which emission levels are to be met as per TEAP requirements. Please note that for Table 2-1 Summary of Technical Performance Criteria, all concentrations of pollutants in stack gases and stack gas flow rates are expressed on the basis of dry gas at normal conditions of 0 degrees C and 101.3 kPa, and with the stack gas corrected to 11% O₂ (as referred to by normal cubic metre, Nm³). Please note that the test results for R-12 and HBr as provided, show results at 7% oxygen.</p> <p>GHD Response: We have only received the WMS stack test results for HBr, and R-12. Please provide the results for PCDDs/PCDFs, HCl/Cl₂, HF, HBr/Br₂, Particulates, CO as listed in the GHG Project Plan.</p>	<p>Results of the DRE test and emissions test show that the facility fulfills TEAP requirements. These can be found in the folder Compliance -> WMS Compliance Documentation -> Stack testing. Previous communication with ACR (email attached) indicates that the facility doesn't need to have a TEAP report as long as it fulfills the TEAP and local requirements.</p> <p>TW Response Additional information regarding how the project meets the performance criteria listed in the TEAP report has been added in section A3. Proof of Project Eligibility.</p> <p>TW response Test results for all contaminants can be found in documents in folder WMS Compliance Documentation/Stack testing. Regarding the percentage of oxygen, when adjusting to 11% O₂, the results are below <0.001 which are below the resolution of the equipment.</p>	closed
5	Page 12 of GHG Project Plan Section 6, Project Action, Description of Project Technologies, Products, Services, and Expected Level of Activity Section, states that the destruction activities took place at the WMS Warehouse, however it would have taken place at the WMS Destruction Facility. Please confirm and correct as needed.	Corrected	closed
6	Please confirm why Timothy H Brown is listed in place of Maria Gutierrez for Tradewater LLC, in Section A8 Parties pg 13. Please include contact info"(eg. Email or phone number for Timothy).	Contact information added. Contact person change for internal restructuring.	closed
7	<p>GHG Project Plan Section B3. Project Boundaries, SSR statement should be consistent with all SSRs listed in B4. Identification of GHG sources and sinks including ODS Use, Transport to Destruction Facility and Destruction.</p> <p>GHD Response: Section B4 includes SSRs, ODS Use, Transport to Destruction Facility and Destruction, while Section B3, does not include Destruction. Also note that, word "Additional" before SSRs in Section B3 is not required.</p>	Corrected TW response: corrected	closed
8	<p>Formulas listed in GHG Project Plan Table 4 for Transportation and Destruction are inconsistent with formulas listed in Section E2, project scenario.</p> <p>GHD Response: Formulas listed in GHG Project Plan Table 4 for SSR5 Transportation to Destruction Facility are inconsistent with formulas listed in Section E2, project scenario.</p>	Corrected TW response: corrected	closed

APPENDIX C - FINDINGS LIST

Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

Issue No.	Issues / Questions	Explanation/Response	Status
9	Section D1. Monitored data and parameters, parameter table for Q ODS should include the following description: "The total quantity of ODS refrigerant (including HBR , moisture, etc) transported to the destruction facility."	Corrected	closed
10	Please provide the Monitoring Report.	Monitoring report has been provided in the data room TW response Monitoring report was edited to include information of virtual site visit and will be provided once is signed.	closed
11	Please provide the technician names and certification types of all technicians that conducted the handling, recovery and disposal of ODS refrigerants. GHD Response: Please confirm how Tradewater intends to meet the ACR requirement relating to technician certifications listed in Section 2.2 X, and is described below: "The handling, recovery, and disposal of ODS refrigerants must be performed by qualified technicians. Qualified technicians may only service refrigeration or air conditioning equipment they are certified to service if a refrigerant handling, recovery, and disposal certification program exists in the ODS source country. Technician name and certification type(s) (if applicable) must be retained as part of the documentation retention requirements of this Methodology." GHD Response: Training certification for Victor Molina has been provided, however ODS Sampling Certificate indicates that employee physically taking sample is Mr. Ampol Ruttanasang of WMS. Please provide training certificates of all technicians involved in handling, recovery and disposal of the ODS.	Thailand doesn't require certifications for the handling, recovery and disposal of ODS refrigerants. TW response: technicians received training from a technician with EPA 608 certification, that can be found in the folder WMS Compliance Documentation/Training WMS is a waste management facility who employs technicians to routinely manage waste under Thailand standards. TW response: Mr Ampol Ruttanasang and other laboratory certification has been provided in folder WMS Compliance documentation/Training	closed
12	The Project Plan requires a thorough English language, grammar, and spelling check.	Corrected	closed
13	Please provide document "Delivery of ODS under the supervision of Thai Customs to destroy at BPEC", and evidence that the ODS was not required to be destroyed in the Custody of Thailand Government, as stated in GHG Project Plan. GHD Response: Document is not found in validation folder, please confirm where documents are found.	Documents added to the Validation folder TW response The quote referenced an older draft of the letter and indicate the language in section C1 has been adjusted to reference the final executed letter and another supporting meeting of regulatory agencies in Thailand. Documents can be found in Validation folder	closed
14	Please confirm whether the signed consolidation report, is the valid offset title that attests to Tradewater LLC's ownership of the credits generated by the Project.	Both the Transfer of ownership documentation and the signed consolidation report are the valid offset titles that attest to Tradewater LLC's ownership of the credits generated by the project	closed

APPENDIX C - FINDINGS LIST

Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

Issue No.	Issues / Questions	Explanation/Response	Status
15	Please note that the transfer of ODS ownership documents indicate transfer from WMS to Tradewater International instead of Tradewater LLC.	In section A.8 Parties, it's indicated that "Any mention of Tradewater International is self-same as Tradewater LLC"	closed
16	Please confirm whether Customs to WMS initial transfer of ODS during Tradewater Thailand Project 1, includes containers with ODS to be destroyed during Project 2, or whether there was a new transfer of ODS between Thailand Customs and WMS.	Transfer from Customs to WMS was done by stages, not all included in Thailand 1. Initial transfer between Customs and WMS is not applicable to the project, as we are considering WMS as the point of origin.	closed
17	Please provide an excel version of the Consolidation report.	Provided in Chain of custody/ Transfer of own	closed
18	Please note that per the ACR Methodology, for non-RCRA facilities, calibrations are required to be done quarterly to 5% or better accuracy. Please confirm the frequency of calibrations and whether a quarterly calibration was done for the big scale in 2023.	2023 calibration provide, though is not relevant for this project as it was performed after the destruction event. The calibration for the previous quarter was provided in the WMS Compliance Documentation	closed
19	Please note that the signed Consolidation Report is missing all containers and weights subsequent to container# TH01674 in the Consolidation Report. GHD response: Please provide the signed consolidation report.	Noted. This has been corrected.	closed
20	Please note that the quantity for "volume of customer container sampled" in the ODS Sampling certificate is in units of kg. Note that this is a mass, instead of a volume.	Noted. This will be corrected in future documentation	closed
21	Please note that Sampling analysis includes the lab analysis company name as "Bureau Veritas Commodities Antwerp N.V." Please confirm whether ODS destruction certificate includes full name of for laboratory.	The Certificate of Destruction complies with all methodology requirements, and inclusion of the lab company name is not a prescribed component. We note this and will revise future documentation as suggested.	closed
22	Please note that the ODS sampling certificate does not include units for the tare and net weight of the sample.	Kilograms are the units used throughout sampling process. We will advise the sampling technician and update future documents.	closed
23	Please note that the ACR-approved deviation methodology indicates that the methodology is used for when the trucks transporting the ODS pre-destruction and post-destruction are the same trucks, however the truck IDs listed on the weight tickets indicate that different trucks were used. GHD response: Please provide the signed weight forms or evidence that the trucks were the same.	Per the signed weight forms completed by the scale technician, the same truck was used. Please note that the license plate field on the raw tickets records the truck number, and not the license plate. The truck ID number corresponds to the license plate number in the signed forms.	closed
24	Please note that the lab analysis certificate indicates that moisture was at 18 ppm and 0.1 HBR which differs from the values used in the calculations.	Calculations have been corrected.	closed

APPENDIX C - FINDINGS LIST

Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

Issue No.	Issues / Questions	Explanation/Response	Status
25	Please provide the sample analysis request submitted to the Analysis lab.	The request is not a required document of the methodology. Tradewater has a standing agreement with Bureau Veritas to perform import and analysis. Please find included, for your reference, the email initiating the request in the Sampling folder.	closed
26	Please confirm the source of the sample bottle ID as listed on the Sampling Certificate. Note that the sample bottle ID is not found on the certificate of analysis. Please confirm the identifier that links the ODS sampling certificate to the certificate of analysis.	One sample was extracted and shipped with the following tracking number 176-5393-7214. We will advise to include ID reference number in future projects.	closed
27	Please confirm whether sample was taken in liquid state, as required by Appendix B of the ACR Methodology.	Yes. Refer to Sampling SOP procedure previously provided as affirmed by the sampling technician during the site visit.	closed
28	Please note that the Certificate ID for Tradewater Thailand 1 was BP001 on the COD and the Certificate ID for Thailand 2 is slightly different numbering with BP02.	Noted. The number is the same regardless how many zeros precedes it.	closed
29	Please confirm whether the times on the weight tickets are AM or PM.	Post destruction was taken in the AM. Pre destruction is as noted. Thailand operates on a 24 hours clock and we will advise moving forward to maintain for recording standard.	closed
30	Please note that the Consolidation report and transfer of ownership documents are signed by Maria Gutierrez, however she is not listed in the Project Plan as a contact for Tradewater. GHD Response: Can not find Maria's contact information in the GHG Project plan, Maria is also not listed in Monitoring Report.	Maria Gutierrez' contact information has been added to the GHG plan. TW response: corrected	closed
31	Please note that on page 13 of the update Project Plan, the emissions reductions is listed at 193,539 tCO ₂ e, which is inconsistent with the GHG assertion file and the values listed elsewhere in the Project Plan.	Corrected	closed
32	Note that in the Monitoring Report pg 2, the deviation calculation may include a typo with the plus sign "ODS destroyed + (Inbound weight) etc."	Corrected	closed
33	Note that in Section VIII: Verification of the Monitoring Report it states: " GHD is the verification body for this reporting period, and this is the first year that the verification body is verifying this project." Note that this is slightly misleading, as GHD also verified the Tradewater Thailand 1 project.	Corrected	closed
34	Please note that a formatting error has caused Timothy's signature to show up on pages 2 and 3 of the Monitoring Report.	Corrected	closed
35	Please note that Qref,l and QODS parameters as listed in the Monitoring Report, source of data and measurement sections state that "weight tickets taken pre and post destruction for each container and determined once for each container" however the weight tickets include weights for the trucks not "each container".	Corrected	closed
36	Please note that QODS parameter as listed in the Monitoring Report, description includes error word "only" in place of "total"	Corrected	closed
37	Please note that Monitoring Plan section in Monitoring Report is lacking detail and required information, that was demonstrated in the Tradewater Thailand 1 Monitoring Plan including Sampling procedures, description of ghg management system, etc.	Corrected	closed

APPENDIX C - FINDINGS LIST

Tradewater, LLC
Tradewater - Thailand 2 Project Validation and Verification

Issue No.	Issues / Questions	Explanation/Response	Status
38	Errors on the Monitoring Report: '-Need to include number of years GHD verified the Project for in Section VIII: Verification of the Monitoring Report	Corrected	closed
39	In reviewing the emissions test analysis reports we notice that the PCDDs/PCDFs are slightly above the TEAP limit at 0.25 ng-ITEQ/Nm3. This value is not the value at the same standard conditions for TEAP in determining the emissions limits, so can you please confirm whether this value under the standard conditions (11% O2 etc.) would be above or lower than the TEAP limit?	When adjusting the PCDDs/PCDFs to the standard measurements (Temperature of O Celsius, 11% O2), the results is 0.19 TEQ/Nm3, which is below the limit in the TEAP report.	closed
40	Please note that signed consolidation report has some 0s at the bottom	Noted	closed
41	Please clarify why transfer of ownership letters from WMS to Tradewater have dates that occurred in 2022, and near the time period during which Project Tradewater Thailand 1 was underway.	Transfer for all material corresponding to the Customs projects was done during 2022. Material has been distributed to the projects as needed.	closed
42	Project VVB on ACR Portal for TW Thailand 2 Project shows GHD Limited as the VVB, however GHD Services Inc. has been contracted for this Project.	GHD Limited is the only option in the dropdown menu, as observed in the screenshot below	closed
43	The HCl/Cl2 emission level reported is not matching the analysis report at 0.68 mg/m3.	Corrected in GHG Project Plan.	closed
44	Can you please provide the English translation for the report title below as listed	"The report of changes in the project in the report of Environmental Impact Assessment for projects, business, or operations which might possible to provide strongly impact natural resources, environment quality, health, sanitation, well-being of people in the community. Central Waste Treatment (1st extension) (2nd)".	closed

Appendix D

Validation/Verification Statement

Our ref: 12588069-LTR-2

25 May 2023

Ms. Adriana Vargas Corrales
Verification and Logistics Associate
Tradewater, LLC
San Jose, Costa Rica

Validation/Verification Statement – ACR839 Tradewater - Thailand 2
Samutprakarn, Thailand

Dear Ms. Corrales

GHD Services Inc. (GHD) was engaged by Tradewater, LLC (Tradewater) to conduct greenhouse gas (GHG) offset validation and verification services for the Tradewater – Thailand 2 (the Project). The Project is located in Samutprakarn, Thailand and is registered under the American Carbon Registry (ACR). The ACR Project ID for the Project is ACR 839. The Project involves the collection, aggregation and destruction of eligible ozone depleting substances (ODS) refrigerant that were stockpiled at the Thailand Government Customs Department on or before 2007.

Tradewater is the Project Proponent for the Project, and is responsible for the preparation and fair presentation of the GHG Project Plan, Monitoring Report and emissions reductions.

The Project utilizes the “Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources”, Version 1.0, dated April 2021 (ACR Methodology).

This validation/verification covers reported emission reductions claimed by Tradewater during the reporting period of February 7, 2023 to March 26, 2023. The crediting period is February 7, 2023 to February 6, 2033.

The verification was completed to a reasonable level of assurance.

GHD has prepared this Validation and Verification Statement in accordance with ISO Standard ISO 14064 Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions (ISO 14064-3:2019) and with the requirements of the ACR.

1. Validation/Verification Body

GHD Limited is accredited under ISO 14065 by ANAB as Validation/Verification Body (VVB) and is recognized by ACR. GHD Services Inc. is a GHD affiliated company permitted to conduct verifications through an inter-company agreement with GHD Limited. GHD Services Inc. is located at the following address:

2055 Niagara Falls Boulevard, Unit #3
Niagara Falls, NY 14304
United States

2. Validation/Verification Criteria

GHD adhered to the requirements outlined in the following documents as validation/verification criteria:

- *ISO 14064 Greenhouse Gases - Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*, ISO, April 2019 (ISO 14064-2-2019)
- *ISO 14064 3:2019 Specification with guidance for the validation and verification of greenhouse gas assertions*, ISO, April 2019 (ISO 14064-3-2019)
- *The American Carbon Registry Standard, Requirements and Specifications for the Quantification, Monitoring, Reporting, Verification, and Registration of Project Based GHG Emissions Reductions and Removals*, Version 7.0, December 2020 (ACR Standard)
- *The American Carbon Registry Validation and Verification Standard*, Version 1.1, May 2018 (ACR V/V Standard)
- *Methodology for the Quantification, Monitoring, Reporting and Verification of Greenhouse Gas Emissions Reductions and Removals from the Destruction of Ozone Depleting Substances from International Sources*, Version 1.0, dated April 2021 (ACR Methodology)

3. Validation/Verification Statements

GHD has prepared this Validation/Verification Statement for Tradewater. Tradewater was responsible for the preparation and fair presentation of the GHG Project Plan and GHG Monitoring Report in accordance with the criteria and engaging with a qualified third-party validator/verifier to verify the Project Documentation.

GHD's objective and responsibility was to provide an opinion regarding whether the Project's GHG Project Plan and GHG Monitoring Report was free of material misstatement and that the information reported is a fair and accurate representation of the operations for the reporting period and accurate and consistent with the requirements of the ACR and associated criteria. GHD completed the validation/verification of the Project documentation in accordance with ISO 14064-3:2019 and the ACR Standard and Methodology. GHD completed the validation/verification to a reasonable level of assurance.

3.1 Validation Statement

GHD reviewed the GHG Project Plan for Tradewater – Thailand 2 and determined that it conforms to the requirements outlined in the ACR Standard and Methodology. GHD determined that there are no qualifications regarding the validation opinion.

3.2 Verification Statement

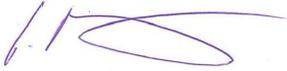
GHD's and Tradewater's calculated baseline emissions, project emissions and Emission Reduction Tonnes (ERTs) for the Project are provided below.

Emission Type	Project Proponent's Calculation (MT CO ₂ e)	GHD Calculation (MT CO ₂ e)
Total Baseline Emissions	207,219	207,219
Total Project Emissions	13,855	13,855
Total ERTs for reporting period in 2023	193,364	193,364

The emission reduction value from this project is 193,364 metric tonnes of CO₂e.

GHD determined with a reasonable level of assurance that the Project was free of an offset material misstatement. This resulted in a Positive Offset Verification Statement for the emissions reductions with no qualifications.

Regards



Gordon Reusing
Lead Validator/Verifier



Anothai Setameteekul
Co-Lead Validator/Verifier



Deacon Liddy
Internal Reviewer



ghd.com

→ **The Power of Commitment**