



RUBY CANYON ENVIRONMENTAL

## Validation and Verification Report

### ACR875 Tradewater US - ODS - #3

July 28, 2023

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# 1 INTRODUCTION

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Tradewater contracted with Ruby Canyon Environmental, Inc. (RCE) to perform the validation and verification of the ACR875 Tradewater US - ODS - #3 Project (Project) for the crediting and reporting period of April 19, 2023 through May 16, 2023 under the American Carbon Registry (ACR) program. This report is documentation of validation and verification activities that RCE performed for the Project located in Bowling Green, OH, USA. For the validation, RCE reviewed the project information as described in the Project Plan “Tradewater US - ODS - #3” dated July 2023. For the verification, RCE ensured that the GHG assertion was materially correct, that the data provided to RCE was well documented, and that if Tradewater made any material errors, that these errors were corrected.

## 1.1 OBJECTIVES

The objectives of the validation are to evaluate:

- Conformance to the ACR standard and the approved ACR Methodology for The Destruction of Ozone Depleting Substances and High-GWP Foam, Version 2.0, February 2023 (Methodology);
- 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 emissions reductions/removal enhancements, leakage assessment, and impermanence risk assessment and mitigation (if applicable).

The objectives of the verification are to evaluate:

- The emissions reductions and to ensure that the assertion is materially correct;
- The data provided to RCE can be documented and if errors or omissions are detected, they be corrected.

RCE retains all data and documents for seven years after the end of the project reporting period or for the duration required by the GHG program, whichever is longer.

## 1.2 PROJECT BACKGROUND

The Project destroyed R-11, R-12, R-113, R-114, R-115, and R-22 that was recovered from HVAC, refrigeration units, or purchased from refrigerant stockpiles. The destroyed ODS ensures that it will no longer be used or stockpiled and ensures that the ODS cannot leak into the atmosphere. Tradewater utilized A-Gas as the destruction facility. A-Gas operates a plasma arc [Plascon] destruction unit that destroys hazardous waste including refrigerants at temperatures above 1,800 degrees Fahrenheit. This process ensures a 99.99% destruction efficiency.

## 1.3 RESPONSIBLE PARTY

### Project Proponent

Tradewater

650 Morse Ave

Elk Grove Village, IL 60007

Timothy Brown, Chief Executive Officer

312-273-5122 x 1000

### Destruction Facility

A-Gas

1100 Haskins Road

Bowling Green, OH 43402

Zach Babb, Environmental Projects Developer

zach.babb@agas.com

### Laboratory

National Refrigerants, Inc.

661 Kenyon Avenue

Bridgeton, NJ 08302

## 1.4 VALIDATION AND VERIFICATION TEAM

Lead Validator and Verifier: Garrett Heidrick

Team Member: Jessica Stavole

Internal Reviewer: Michael Coté

## 1.5 VALIDATION AND VERIFICATION CRITERIA

### 1.5.1 Validation and Verification Standards, Guidelines, and Tools

- Tradewater US – ODS - #3 Project Plan (July 2023)
- Tradewater US – ODS - #3 Monitoring Report
- ACR Standard, Version 7.0 (December 2020)
- ACR Validation and Verification Standard Version 1.1 (May 2018)
- The Destruction of Ozone Depleting Substances and High-GWP Foam, Version 2.0 (February 2023) (Methodology)
- ISO 14064-3:2019 “Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions”

### 1.5.2 Level of Assurance

The verification was conducted to a reasonable level of assurance.

### 1.5.3 Materiality

The verification was conducted to ACR's required materiality threshold of  $\pm 5\%$  of the GHG project's emissions reductions or removal enhancements.

## 2 VALIDATION AND VERIFICATION PROCESS

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As the first step in validation/verification activities, the Lead Validator/Verifier developed a Validation/Verification Evidence Gathering Plan to be followed throughout the validation and verification. The plan included the following activities:

- RCE completed a COI form on May 18, 2023 to identify any potential conflict of interest with the Project or Project Developer. The COI form was approved by ACR on May 22, 2023.
- RCE and Tradewater held a validation/verification kick-off meeting on May 24, 2023. During the kick-off meeting RCE reviewed the validation/verification objectives and process, reviewed the schedule, and submitted an initial document request.
- RCE performed a strategic review and risk assessment of the received data and support documents to understand the scope and areas of potential risk in the GHG emissions reductions.
- RCE developed a risk-based sampling plan based upon the strategic review and risk assessment. The validation/verification evidence gathering plan and sampling plan were used throughout the process and were revised as needed based upon additional risk assessments.
- RCE conducted a site visit to A-Gas' facility in Bowling Green, OH on June 13, 2023. During the site visit RCE observed the weighing in, mixing, and destruction processes as well as onsite GHG management systems and data gathering, monitoring, and handling practices. RCE interviewed key personnel involved in the destruction process.

RCE met with the following personnel during the site visit:

- Tip Stama – Tradewater, Director, Verification & Logistics
- Bri Reinke – A-Gas, Environmental Projects Developer
- Zach Babb – A-Gas, Environmental Projects Developer
- Nickolas Alsip – A-Gas, Destruction Operator, Plascon
- RCE performed a risk-based desktop review of the submitted validation/verification documents. The desktop review included an assessment of the GHG calculation methods and inputs, source data completeness, GHG management and monitoring systems and eligibility documentation.
- RCE submitted requests for corrective actions, additional documentation, and clarifications as necessary to Tradewater throughout the validation/verification.
- RCE's internal reviewer conducted a review of the validation/verification sampling, report, and statement.
- RCE issued a final validation/verification report, verification statement, and List of Findings.
- RCE held an exit meeting with Tradewater.

## 3 VALIDATION AND VERIFICATION FINDINGS

### 3.1 PROJECT BOUNDARY AND ACTIVITIES

RCE reviewed the project boundary and activities and confirmed that both were appropriately identified and described in the Project Plan. For the Project, Tradewater receives recovered ODS from various contractors or completes the recoveries themselves. Tradewater also accepts small quantity customer drop-offs and purchases stockpiled ODS. Tradewater destroyed the R-11, R-12, R-113, R-114, R-115, and R-22 at A-Gas' facility in Bowling Green, OH. Tradewater is a U.S. EPA-certified reclaimer.

The ODS are collected and bulked into an ISO tank at Tradewater's Elk Grove Village, IL facility. Once the ODS are bulked into the ISO tank, the tank is shipped to A-Gas' facility where it is weighed and sampled. If the ISO tank contains mixed ODS (purity of less than 90%) the tank is circulated and sampled on site in accordance with Appendix C (G) of the Methodology.

The Project's temporal boundary is the crediting period from April 19, 2023 – May 16, 2023.

### 3.2 GHG SOURCES SINKS, AND RESERVOIRS

Table 1 shows the GHG emission sources included in the project boundary based on the Methodology. RCE confirmed that the Project Plan appropriately identifies the offset project boundary and includes all relevant SSRs.

**Table 1. GHG Emissions Sources**

| Source | GHG                     | Description  |
|--------|-------------------------|--|
| SSR 4  | CO <sub>2</sub>         | Fossil fuel emissions from the vehicular transport of ODS from aggregation point to final destruction facility   |
| SSR 6  | ODS and CO <sub>2</sub> | Emissions of ODS from incomplete destruction at destruction facility. Emissions from the oxidation of carbon contained in destroyed ODS. Fossil fuel emissions from the destruction of ODS at destruction facility. Indirect emissions from the use of grid-delivered electricity. |

### 3.3 ELIGIBILITY

#### 3.3.1 ACR Eligibility

RCE confirmed the following ACR eligibility criteria listed in the ACR Standard, Version 7.0 by reviewing the project proponent's Project Plan, Monitoring Report, and calculations as well as other supporting documentation described throughout this report (a full list of documents reviewed is in Appendix A).

- Start Date: The project start date is April 19, 2023.
- Crediting Period: The crediting period is the reporting period as specified by the Methodology, April 19, 2023 – May 16, 2023.
- Minimum Project Term: Projects with no risk of reversal subsequent to crediting have no required minimum project term.

- **Offset Title:** RCE confirmed that the project proponent has undisputed title to all offsets. The project proponent purchases refrigerant from refrigerant recovery jobs, recovers the refrigerant themselves, or purchases refrigerant from stockpiles. The project proponent then destroys the refrigerant at an eligible facility. All refrigerant transactions are described by Tradewater's invoices. Tradewater retains all legal claims to the environmental attributes and GHG benefits of its processes and the avoidance of future leaks into the atmosphere.
- **Additional:** RCE confirmed that the project is additional as described in Section 3.4.
- **Permanent:** In the absence of the project, the ODS would be used in cooling equipment or stored in stockpiles. In either scenario, the ODS will eventually leak into the atmosphere from the equipment, servicing the equipment, or through the degradation of the storage vessel. By destroying the refrigerant, Tradewater ensures that there will be no future leaks into the atmosphere. The project will generate emission reductions that are permanent and have no risk of reversal.
- **Net of Leakage:** The Methodology specifies that leakage does not need to be considered as it is unlikely that any emissions would occur outside the project boundary.
- **Independently Validated and Verified:** RCE is a third-party validation and verification body that the project proponent has contracted to validate the project.
- **Community & Environmental Impacts:** RCE reviewed project impacts as described in section 3.6 of this report.

### 3.3.2 Methodology Eligibility

RCE reviewed the Project against the ACR Methodology eligibility requirements and confirmed the following:

- The Project occurs in the United States. The destruction facility is located at 1100 Haskins Road, Bowling Green, OH 43402 with GPS coordinates 41.39176885512956, -83.671276989498.
- The Project occurs at a destruction facility that is a TEAP certified facility with an ODS destruction efficiency of 99.99%.
- The refrigerant meets the definition of eligible refrigerant sources, which must originate from equipment, systems, or other supplies in the United States.
- The destroyed ODS are eligible species; CFC-11, CFC-12, CFC-13, CFC-113, CFC-114, CFC-115, HCFC-22, or HCFC-123.

## 3.4 ADDITIONALITY

The Project meets the requirements for the demonstration of additionality specified by the ACR Standard by exceeding the approved performance standard defined in the Methodology and demonstrating surplus to regulations.

### 3.4.1 Regulatory Additionality Test

No existing laws or regulations mandate the Project activity. During 2023, there were no requirements to destroy refrigerants in the United States, Illinois, or Ohio. Tradewater is an EPA-certified reclaimer of refrigerants. The EPA does not require certified reclaimers to destroy refrigerants. Additionally, RCE

reviewed federal and state requirements for facilities who manage refrigerants and found no evidence that refrigerants are required to be destroyed. The project passes the regulatory additionality test.

### **3.4.2 Practiced-Based Performance Standard Test**

Per the Methodology, in the Business as Usual (BAU) scenario, the ODS would be used to recharge equipment and be released to the atmosphere due to equipment leaks or the refrigerant would be stored in containers for possible use. Either way, the refrigerant would eventually leak into the atmosphere. By destroying the gas, Tradewater is going beyond the BAU scenario. The project passes the performance standard test.

## **3.5 PERMANENCE**

The emissions reductions from the destruction of ODS can be deemed as permanent because they are destroyed to a 99.99% efficiency.

## **3.6 ENVIRONMENTAL AND COMMUNITY IMPACTS**

The project plan includes a comprehensive summary of the project activity's net positive environmental impacts. Destroying ODS avoids the future leakage of the ODS into the atmosphere. There are no negative community or environmental impacts for this project. Tradewater holds all required environmental permits to operate their facility and A-Gas holds all required environmental permits to operate their destruction facility. The Project Plan also identifies contributions as aligned with relevant sustainable development goals (SDGs) including #9 Industry, Innovation, and Infrastructure; #12 Responsible Consumption and Production; and #13 Climate Action.

The validation team confirmed that the project activity is not expected to promote significant negative environmental impacts.

## **3.7 LOCAL STAKEHOLDER CONSULTATION**

Not applicable for this Project. The Methodology does not require public consultation from stakeholders.

## **3.8 POINT OF ORIGIN DETERMINATION**

RCE verified the points of origin for all ODS included in this Project through receiving reports, delivery receipts, and collection documentation. Points of origin included Lawrence Livermore National Lab, Tradewater customers, and Tradewater's facility where the remainder of the ODS was aggregated from small quantities shipped or transported directly to Tradewater. RCE reviewed documentation to ensure that Tradewater met all point of origin requirements, including:

- Facility name and physical address
- Point of origin zip code
- Serial or ID number of containers used for storage and transport

## **3.9 CHAIN OF CUSTODY AND OWNERSHIP DOCUMENTATION**

RCE verified the COC for ODS from points of origin for the Project to Tradewater's facility. RCE also verified the COC for the shipments from Tradewater's facility to A-Gas. Tradewater shipped the ODS to A-Gas in two shipments, and RCE reviewed the bill of lading (BOL). The shipments' details are described below:



- Tradewater Shipment – R-12 shipped on 4/6/2023 using Triple M Logistics, BOL gross weight: 44,209 pounds.
- Tradewater Shipment – R-113 shipped on 4/26/2023 using Triple M Logistics, BOL gross weight: 33,862 pounds.

Lastly, RCE verified the COC documentation for the ODS samples taken for the Project and shipped (via FedEx) from A-Gas to the National Refrigerants, Inc. laboratory. All COC documentation met Methodology requirements and matched all relevant dates found in corresponding documentation.

### 3.10 ODS COMPOSITION AND QUANTITY ANALYSIS

#### 3.10.1 Scales

RCE confirmed that A-Gas used calibrated scales to measure the pre- and post-destruction weights for the destruction events. The ISO tanks at A-Gas have their own load scales. Scales used were for tank 5001 and 5005. RCE viewed the scales during the site visit. RCE verified that:

- The refrigerant container was not permanently affixed to a detachable trailer
- Each container was weighed by placing it individually on the scale associated with the tank number
- The refrigerant container had a capacity greater than 1,000 pounds and was placed motionless on the scale to allow the ODS to stabilize for both the pre- and post-destruction weight tickets.

RCE verified that the scales were calibrated quarterly, and the accuracy was within 5% of reading for the quarter that includes the reporting period.

RCE confirmed that the ISO tanks were weighed no more than 48 hours prior to destruction and no more than 48 hours after destruction.

#### 3.10.2 Composition Sampling

RCE verified that the procedures for the sampling of the mixed ODS for the destruction events met the requirements of the Methodology by reviewing the ODS Sampling Certificates, the NRI Request for Refrigerant Analysis forms, the Chain of Custody Analysis Records, sample tracking forms, and the shipping confirmation documentation from FedEx. RCE also discussed the training completed by A-Gas during the site visit to ensure that employees conducting sampling activities are knowledgeable of the proper procedures.

The Lead Verifier confirmed that the following requirements were met:

- The samples must be taken while ODS is in the possession of the company that will destroy the ODS
  - RCE confirmed through the ODS Sampling Certificates and Chain-of-Custody Records completed by A-Gas technicians Mark Dulaney and Nick Alsip.
- Samples must be taken by a technician unaffiliated with the Offset Project Operator or Authorized Project Designee
  - RCE confirmed through the ODS Sampling Certificates and Chain-of-Custody Records completed by A-Gas technicians Mark Dulaney and Nick Alsip
- Samples must be taken with a clean, fully evacuated sample bottle that meets applicable U.S. Department of Transportation requirements with a minimum capacity of one pound

- RCE confirmed through the ODS Sampling Certificates completed by A-Gas technicians Mark Dulaney and Nick Alsip, the Request for Refrigerant Analyses, and a review of A-Gas' Standard Operating Procedure during the site visit
- Each sample must be taken in liquid state
  - RCE confirmed through the ODS Sampling Certificates completed by A-Gas technicians Mark Dulaney and Nick Alsip and a review of A-Gas' Standard Operating Procedure during the site visit
- A minimum sample size of one pound must be drawn for each sample
  - RCE confirmed through the ODS Sampling Certificates completed by A-Gas technicians Mark Dulaney and Nick Alsip
- Each sample must be individually labeled and tracked according to the container from which it was taken, and the following information recorded: time and date of sample, name of Offset Project Operator or Authorized Project Designee, name of technician taking sample, employer of technician taking sample, volume of container from which sample was extracted, and the ambient air temperature at time of sampling
  - RCE confirmed through the ODS Sampling Certificates and Chain-of-Custody records completed by A-Gas technicians Mark Dulaney and Nick Alsip and Requests for Refrigerant Analyses completed by Mark Dulaney and Nick Alsip
- Chain of custody for each sample from the point of sampling to the AHRI lab must be documented by paper bills of lading or electronic, third-party tracking that includes proof of delivery (e.g., FedEx, UPS)
  - RCE confirmed through Request for Refrigerant Analyses forms completed by A-Gas as well as FedEx tracking documentation

### Refrigerant Analysis Reports

RCE reviewed the Refrigerant Analysis Reports provided by NRI for the destruction events. RCE confirmed that the analyses demonstrate that the ODS met all the requirements as outlined in Appendix C, apart from moisture content, of the Methodology. The analyses provided:

- Identification of the refrigerant
- Purity of the ODS mixture by weight
- Moisture level in parts per million demonstrating a moisture content of less than 75 percent of the saturation point of the ODS species with the lowest saturation point that is at least 10 percent of the mixture by mass
- Analysis of high boiling residue (HBR) indicating less than 10 percent by mass
- Analysis of other ODS

Tradewater applied for a deviation on 7/14/2023 for destruction 1209's moisture content being greater than 75 percent of the saturation point of the ODS species analyzed by NRI. ACR accepted the deviation on 7/14/2023.

## **3.11 DESTRUCTION FACILITY REQUIREMENTS**

RCE confirmed that the A-Gas destruction facility located in Bowling Green, OH is a TEAP-certified destruction facility. Specifically, RCE reviewed A-Gas' Good Housekeeping Report that demonstrates A-Gas' TEAP testing and certification process. The report states that A-Gas destroys ODS at a 99.99% removal efficiency.

### 3.11.1 Monitoring Parameters

A-Gas provided an excel file download of the real-time monitoring parameters data for the reporting period as defined in Section 6.1 of the Methodology. The lead verifier also reviewed the data with A-Gas personnel during the site visit. The CEMS parameters are monitored continuously and recorded every minute and data are downloaded to excel on an as-needed basis. The following information was tracked during the destruction events:

- Date and time
- ODS feed rate (lbs/hr)
- Temperature (°F)
- Pressure (in of H<sub>2</sub>O)
- Total hydrocarbons in stack (ppm)
- CO flow rate (ppm)
- Effluent flow rate (m<sup>3</sup>/h)
- Effluent pH level

RCE confirmed that the Plascon unit operated within the parameters recorded during TEAP testing. There were instances where A-Gas needed to follow its Startups, Shutdowns, or Malfunctions Plan (SSMP), however, there were no leaks or venting of ODS during these interruptions.

### 3.11.2 Certificate of Destruction

RCE confirmed that the Certificates of Destruction contained Methodology required parameters.

- Offset Project Operator or Authorized Project Designee
- Destruction facility
- Certificate of Destruction ID number
- Serial, tracking, or ID number of all containers for which ODS destruction occurred
- Weight and type of material destroyed from each container
- Destruction Start Date
- Destruction End Date

## 3.12 BASELINE SCENARIO

The baseline determines the emissions that would occur in the absence of the project. The project activity is the destruction of ODS to avoid future leakage into the atmosphere. GHG emissions are avoided because in the baseline scenario, the ODS would have been used to charge or recharge refrigeration or air conditioning equipment or stored in collection tanks causing CO<sub>2</sub>e emissions to be released. Instead, the ODS are being extracted from equipment or purchased from stockpiles, aggregated, and destroyed, thus avoiding those emissions. The Methodology establishes the baseline scenario as the continued use or storage for future use of ODS. RCE confirmed that the Project Plan appropriately identifies the baseline scenario.

### 3.13 DATA MANAGEMENT SYSTEM AND MONITORING PLAN

RCE reviewed Tradewater and A-Gas' processes for data collection and management and determined that they were sufficient to meet all ACR and Methodology requirements. The validation/verification team gained an understanding of the controls put in place to account for the ODS received, mixing and sampling, and destruction through interviews with key personnel, the site visit to A-Gas' destruction facility, and the review of all documentation provided by Tradewater. Tradewater monitors the amount of ODS that are recovered or purchased and bulked for destruction. A-Gas monitors the weight of ODS for destruction, the mixing and sampling, and the destruction process. A-Gas' scales are calibrated quarterly as required by the Methodology. This activity is completed by Antibus Scales & Systems. The ODS sent for destruction are analyzed by National Refrigerants, Inc.'s AHRI 700-certified laboratory to ensure it meets all requirements.

Tradewater's Project Plan includes a Monitoring Plan that identifies all monitored data and parameters. RCE confirmed that the monitoring parameters and approaches conform to the methods required by the Methodology. The plan includes all relevant data parameters and appropriately identifies units of measurements, data sources, methodologies, uncertainty, monitoring frequency and procedures, and QA/QC procedures. After discussions with Tradewater and reviews of project documents, RCE determined that the Monitoring Plan accurately reflects how Project data is monitored and recorded and that there is one deviation relevant to the Project activity against the requirements of the Methodology. Tradewater implemented the monitoring plan as stated in the Project Plan during Project activities.

### 3.14 PROJECT DATA AND GHG EMISSIONS REDUCTION ASSERTION

RCE reviewed the Project Plan, Project data, and calculations to ensure that appropriate equations were used in calculating baseline emissions, project emissions, and emissions reductions.

#### 3.14.1 Baseline Emissions

Baseline emissions include the emissions that would have occurred had the ODS been used in existing refrigeration or air conditioning equipment. RCE used the total amount of ODS destroyed as found on the CODs provided by A-Gas and then removed the amount of high boiling residue (HBR) and moisture determined by the NRI lab analyses. Once this weight was removed, the remaining weight was multiplied by the percent compositions of eligible refrigerants in the material destroyed as documented on the lab analyses provided by NRI. The weights of eligible materials were then converted from pounds to metric tons to calculate  $Q_{refr,i}$  for each eligible refrigerant.  $Q_{refr,i}$  was then multiplied by the appropriate GWPs for each refrigerant to determine  $BE_{refr,i}$ . Due to rounding, some values might not equate to the final values claimed by Tradewater.

#### 3.14.2 Project Emissions

RCE calculated project emissions for the destruction events. RCE calculated the project emissions from transportation and destruction by multiplying the total weight of all ODS destroyed in the COD by the appropriate default emission factor. Due to rounding, some values might not equate to the final values claimed by Tradewater.

### 3.14.3 Emissions Reductions

RCE verified that Tradewater calculated emissions reductions according to relevant Methodology equations and that the methods are included in the Project Plan.

RCE calculated emissions reductions for the reporting period according to the equations defined in the Methodology and the Project Plan and found the assertion to be free of material misstatement. RCE's calculated ERTs are shown in Table 2.

**Table 2. RCE-calculated ERTs**

| Reporting Period              | RCE ERTs<br>(MTCO <sub>2</sub> e) | Tradewater ERTs<br>(MTCO <sub>2</sub> e) |
|-------------------------------|-----------------------------------|--|
| April 19, 2023 – May 16, 2023 | 67,967                            | 67,967                                   |

## 4 VALIDATION AND VERIFICATION RESULTS

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RCE developed one List of Findings for both the validation and verification notifying Tradewater of corrective action requests (CARs), additional documentation requests (ADRs), and clarification requests (CRs). Tradewater appropriately responded to all items in the List of Findings. The List of Findings is provided as Appendix B.

## 5 VALIDATION AND VERIFICATION CONCLUSION

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RCE conducted a risk-based validation and verification of the Tradewater US - ODS - #3 project that included a strategic review of the project data, documentation, and emission reduction calculations. The objective of the validation activities was to assess the project design, baseline scenario, and monitoring plan and to ensure compliance of the Project Plan to the assessment criteria defined in Section 1.5.1. The objective of the verification activities was to conduct an independent assessment of the project reporting period and ex-post GHG emission reductions resulting from the Project.

Based on the review and the historical evidence collected, RCE concludes to a reasonable level of assurance that the GHG assertion is free of material misstatement. The emissions reductions resulting from the ODS destruction for the reporting period April 19, 2023 to May 16, 2023 can be considered in conformance with the:

- ACR Standard, Version 7.0 (December 2020)
- ACR Validation and Verification Standard Version 1.1 (May 2018)
- The Destruction of Ozone Depleting Substances and High-GWP Foam, Version 2.0 (February 2023)
  - With exception to Appendix C. 1.D.iii.b
- ISO 14064-3:2019 “Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions”

Table 3 provides a summary of the emissions reductions.

**Table 3. Emissions Reductions**

| <b>Vintage</b> | <b>Baseline Emissions<br/>(MTCO<sub>2</sub>e)</b> | <b>Project Emissions<br/>(MTCO<sub>2</sub>e)</b> | <b>Emissions Reductions<br/>(MTCO<sub>2</sub>e)</b> |
|----------------|---|--|---|
| 2023           | 68,063  | 97   | 67,967  |

**Lead Validator and Verifier**



Garrett Heidrick

**Internal Reviewer**



Michael Coté

## 6 APPENDIX A—DOCUMENTS REVIEWED

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1. BOLs from Tradewater to A-Gas
2. Chain of Custody documentation for all shipments
3. CEMS data report
4. ECHO reports for all parties
5. IMIS reports for all parties
6. Emails from state agency representatives
7. GHG Assertion spreadsheet
8. All relevant permits for A-Gas
9. A-Gas weight tickets
10. NRI refrigerant analysis
11. Point of origin documentation
12. A-Gas SOP
13. Scale Calibrations
14. A-Gas' Good Housekeeping Report
15. Tradewater regulatory compliance attestation
16. Tradewater US - ODS - #3 Project Plan
17. Tradewater US - ODS - #3 Monitoring Report
18. Tradewater US - ODS - #3 Listing Form
19. Certificate of Destruction
20. AHRI 700 sampling
21. Destruction process overview
22. All applicable EPA 608 certifications
23. All applicable EPA hazmat certifications for transporters
24. Tradewater's listing on the EPA's website as a U.S. EPA-Certified Refrigerant Reclaimer
25. Deviation for moisture content

## 7 APPENDIX B—LIST OF FINDINGS

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Includes Corrective Action Requests (CAR), Additional Documentation Requests (ADR), and Clarification Requests (CR)



| #   | Finding and Date   | Section of Methodology or Program Document | Project Developer Response and Date   | RCE response and Date  | Additional Project Developer Response and Date   | Additional RCE Response and Date | Open or Closed |
|---|--|--|---|--|--|----------------------------------|----------------|
| <b>Corrective Action Request, Non-Material Finding, Additional Documentation Request, Clarification Request</b> |  |  |   |  |  |                                  |                |
| CAR 1   | 6/8/2023: GWPs for R-113 and R-114 are incorrect. Causes a 12.45% difference in ERs.   | Methodology Appendix A Table 4             | This has been corrected.  | 6/28/2023: Corrected.  |  |                                  | Closed         |
| CAR 2   | 6/8/2023: The moisture content of Plas 1209 is 99 ppm. R-12 at 71.6 F is 80 ppm. This does not meet the less than 75% requirement. Please reach out to ACR to determine best practices on how to deal with this in your calculations since the protocol doesn't specify what to do if this requirement is missed | Methodology Appendix C (D)(iii)(b)         | Please see deviation documentation included in the folder.  | 6/28/2023: Waiting for ACR's approval.   |  | 7/17/2023: Provided. Closed.     | Closed         |
|   |  |  |   |  |  |                                  |                |
| ADR 1   | 6/8/2023: Please provide documentation that shows which consolidation IDs went in to each ISO.   | Methodology 6.1                            | This has been added to the folder.  | 6/28/2023: Provided.   |  |                                  | Closed         |
| ADR 2   | 6/8/2023: Please provide the maintenance log for Plas-1211.  | Methodology 6.4                            | This has been added to the folder.  | 6/28/2023: Provided.   |  |                                  | Closed         |
| ADR 3   | 6/8/2023: Please provide the destruction workbook for Plas 1209.   | Methodology 6.4                            | This was mistakenly provided for Plas-1211 and is an operations related document that informs the destruction packet and does not need to be included.  | 6/28/2023: Yes, I see that the excel destruction workbook is the same file as the PDF'd "Packets."   |  |                                  | Closed         |
| ADR 4   | 6/8/2023: Has A-Gas received any compliance inspections during 2023? If so, please provide.  | Methodology 3.7                            | A CEI inspection was conducted in March. Please see the included CEI letter.  | 6/28/2023: Provided.   |  |                                  | Closed         |
| ADR 5   | 6/28/2023: There is one tank found in the "Consolidated Batches" file that is not found in the "Collection References." Tank 2023IL6030.   | Methodology 6.4                            | This was mistakenly omitted and has been re-added to the Collection References under Version 3.   | 7/5/2023: Added, zero pounds. Does not effect ERs.   |  |                                  | Closed         |
|   |  |  |   |  |  |                                  |                |
| CR 1  | 6/8/2023: Can you explain what the RCRA violation was for during Q1 of 2023 on US EPA ECHO database? How could A-Gas have a RCRA violation when they are not RCRA permitted?   | Methodology 3.7                            | The violation was for a single mislabeled drum which was corrected on site during the inspection. A-Gas has a RCRA exemption to handle Hazardous waste onsite. They are required to have annual inspections by the Ohio EPA to ensure they are in compliance. | 6/28/2023: CEI inspection report shows that this was resolved on site.   |  |                                  | Closed         |
| CR 2  | 6/8/2023: Is Lawrence Livermore a governmental source? On the EPA ECHO database there are some facilities at this lab that are Department of Energy.   | Methodology 6.1                            | Yes, this is a governmental source, as allowed by version 2.0 of the Methodology.   | 6/28/2023: Can Tradewater provide a statement regarding the following, "For projects destroying refrigerant ODS sourced from government stockpiles or inventories, the project proponent must maintain documentation that the ODS is not required to be destroyed or converted." | Please see the included contract for sale which does not mandate destruction under the terms of the bid. | 7/5/2023: Provided.              | Closed         |
| CR 3  | 6/8/2023: Who transported the material from Lawrence Livermore Lab?  | Methodology 6.1                            | This was transported by FedEx Freight and IMG Trucking.   | 6/28/2023: Can you provide it's file D-62537+?   | Please see the included shipping documentation.  | 7/5/2023: Provided.              | Closed         |