



Verification Report for

EOS Climate, Inc.
San Francisco, CA USA
EOS-JA-09-01, Third Reporting Period

Climate Action Reserve

U.S. Ozone Depleting Substances
Project Protocol, Version 1.0

6 August 2010

Report Prepared for

EOS Climate, Inc.
71 Stevenson St., Suite 400
San Francisco, CA 94105
USA

Report Prepared by

NSF-ISR
789 N. Dixboro Road
Ann Arbor, MI 48105
USA

Project Verification Report

Summary

EOS Climate engaged NSF to verify its destruction of ozone depleting substances from a project defined in accordance with the requirements of the Climate Action Reserve U.S. Ozone Depleting Substances Project Protocol, Version 1.0. The project was comprised of the collection of R-12 refrigerant at appliance demanufacturing sites in the United States that was shipped for destruction to the Clean Harbors Environmental Services facility in El Dorado, AR, from an aggregation point in Champaign, IL. The destruction facility is a permitted U.S. EPA hazardous waste combustor described by the NAICS code 562211.

The project consisted of one destruction event conducted that began on 2010-05-20 and was completed on 2010-05-25. It destroyed 25,800 pounds of mostly refrigerant R-12 that was entirely sourced within the United States of America. The project reduced future emissions into the atmosphere of 105,730 metric tons of CO₂-e.

1. Introduction

1.1 Objective

The objective of this verification audit was to determine, with reasonable assurance, that EOS Climate had quantified, monitored, and fairly reported to the Climate Action Reserve its emission reductions from the destruction of U.S.-sourced refrigerant R-12, in accordance with all applicable requirements of the Climate Action Reserve US Ozone Depleting Substances Project Protocol, version 1.0.

1.2 Scope

The scope of the engagement included verification of the quantification, monitoring and reporting of greenhouse gas emission reductions from the project. It also included verification of the calculated project emissions associated with substitute emissions from replacement refrigerants over a ten-year period, and transportation and destruction-related emissions incurred by the project.

1.3 Criteria

NSF verified the reported project emission reductions against criteria in the Climate Action Reserve U.S. Ozone Depleting Project Protocol, Version 1.0, including the Errata and Clarifications issued by the Climate Action Reserve on 2010-05-07. The project also was verified against applicable requirements of the Climate Action Reserve's Program Manual (March 16, 2010). The verification methodology conformed to requirements in Climate Action Reserve Project Verification Manual (June 17, 2009), and ISO 14064:2006 Part 3, *Greenhouse gases – Specification with guidance for the validation and verification of greenhouse gas assertions*.

Project Verification Report

1.4 Materiality

In accordance with the Climate Action Reserve Project Verification Manual, emission reduction reports were considered fairly stated if they varied by no more than 5% from a complete statement of the project's emission reductions. Thresholds of materiality defined by the Project Verification Manual allowed verifiers of emission reduction reports to consider as immaterial discrepancies of 5% or less.

1.5 Level of Assurance

This engagement was performed at the reasonable level of assurance.

2. Verification Approach

2.1 Team Appointment and COI Review

This verification was performed by John Shideler, NSF Lead Verifier, and Simone Robson, NSF Team Verifier, and reviewed by Janette Lutz, NSF Senior Internal Reviewer. Conflict of Interest inquiries were completed for NSF and for the verification team and a finding of low COI risk was confirmed by the Climate Action Reserve.

2.2 Document Review

The verification team conducted a document review to inform the planning process in advance of performing on-site verification activities. Documents reviewed included EOS Climate's project documentation submitted to the Climate Action Reserve, the basis for emission reduction calculations, chain of custody information, shipping documentation and weigh tickets, laboratory analytical information, and destruction records.

2.3 Planning

NSF's verification approach is risk-based. It draws upon our understanding of risks to fair statement of reported emissions and the operation of controls to reduce such risks. As a result of the document review and preliminary conversations with project management personnel at EOS Climate and a representative of the Clean Harbors destruction facility, a verification plan and a sampling plan were developed for this engagement.

2.4 Verification Activities

As a result of its planning process, NSF conducted a site visit at the Clean Harbors destruction facility in El Dorado, AR. The site visit was conducted on 2010-06-10. Verification activities included:

- Confirmation of the project start date, eligibility, ownership of ODS, and quantification of project emission reductions at the offices of the EOS Climate;

Project Verification Report

- Verification of the controls on the sourcing and traceability of ODS at the destruction facility.
- Review, on a sampling basis, of compliance to relevant environmental regulatory requirements at the Clean Harbors destruction facility. The primary focus of inquiry at the destruction facility was compliance with Resource Conservation and Recovery Act (RCRA) regulations for Hazardous Waste Combustors and compliance with Clean Air Act requirements. Verification of compliance of Department of Transportation requirements associated with the shipment of hazardous material was also performed.
- Review of one Certificate of Destruction issued by the Clean Harbors destruction facility in El Dorado, AR;
- Review of recent scale calibration records;
- Verification that Clean Harbors' monitoring program and data management system addressed and recorded Protocol and Title V Operating Permit required monitoring parameters continuously during the period of destruction; and
- Verification that operating conditions during the entire destruction event at the Clean Harbors facility complied with performance standards established in the facility's Title V Operating Permit.

We relied on work conducted by NSF-ISR during earlier reporting periods of the same EOS project for evidence to demonstrate the adequacy of the following:

- The control environment, information management systems and monitoring plans of EOS Climate, Hudson Technologies, Jaco Environmental, and Clean Harbors Environmental Services;
- The controls on the sourcing and traceability of ODS at the Jaco Environmental collection point and the aggregation facility operated by Hudson Technologies;
- The controls to assure compliance with relevant environmental regulatory requirements at the appliance collection point operated by Jaco Environmental, at the Hudson Technologies aggregation point; and
- The records management system implemented at EOS Climate for acquisition and retention of all Protocol required information.

3. Verification Findings

3.1 Project Description

EOS Climate planned this ODS destruction project to include multiple reporting periods. This verification report covers the third reporting period of the project which EOS Climate has listed in the Climate Action Reserve database as Project 604 "EOS-JA-09-01." EOS Climate acquired R-12 from appliance demanufacturing facilities which was then shipped to a reclaiming facility operated by Hudson Technologies in Champaign, IL. The refrigerant sourced from Jaco Environmental was treated to remove impurities. Additional refrigerant from Hudson Technologies stockpile was combined with the Jaco refrigerant in one ISO container and

Project Verification Report

shipped from Champaign to the Clean Harbors Environmental Services destruction facility in El Dorado, AR. At El Dorado the refrigerant was incinerated at high temperatures to achieve the required minimum destruction and removal efficiency of 99.99 percent.

3.2 Eligibility and Title

Project Definition. EOS Climate planned its ODS destruction project to include multiple destruction events of eligible ODS at a single destruction facility spanning a period of time not to exceed 12 months. The third reporting period of this project included one destruction event in which eligible ODS (CFC-11, CFC-12, CFC-114, and CFC-115) were destroyed at a single qualifying destruction facility. Destruction of the ODS occurred over six days from May 20, 2010 through May 25, 2010. One Certificate of Destruction was issued by Clean Harbors Environmental Services (Certificate ID: 1221588-5-25-10).

Project Developer and Ownership. EOS Climate, Inc., of San Francisco, CA, is the project developer. For this reporting period EOS Climate attested to their ownership of the emission reductions through a signed Attestation of Title which NSF reviewed. The Attestation of Title appeared free from defect. NSF also relied on its earlier verification during this project (April 2010) of a contract to purchase ODS executed between EOS Climate and Jaco Environmental. We also relied on our earlier verification (April 2010) of an executed agreement between EOS Climate and Hudson Technologies, the reclaiming facility, to confirm that title to the ODS remained with EOS Climate during the reclaiming process and subsequent shipment to Clean Harbors.

Qualifying Destruction Facility. The ODS in this third reporting period was destroyed at a RCRA-permitted hazardous waste combustor, Clean Harbors Environmental Services, in El Dorado, AR.

Single Application of Certificates of Destruction. The Attestation of Title obligated EOS Climate to report emission reductions from the third reporting period that is the subject of this verification report to the Climate Action Reserve and to no other registry, and not to sell or transfer the project reductions other than by permitted transfers under the terms of its agreement with the Climate Action Reserve. During the first reporting period NSF interviewed the president and chief financial officer of EOS Climate and believes on the basis of their statements that EOS Climate will not seek to report their ODS emission reductions for this reporting period to any other registry.

3.3 Additionality

Legal Requirement Test. NSF reviewed the Attestation of Voluntary Implementation submitted by EOS Climate for this third reporting period. In addition, NSF reviewed internal records generated by EOS Climate as part of its project monitoring to determine, on a periodic basis, whether any of the states in which refrigerant is collected, had recently modified their regulations to require ODS destruction. EOS Climate found no such modified regulations. NSF confirmed that the websites EOS Climate visited corresponded with the states that provided the refrigerant

Project Verification Report

for destruction. NSF concluded that no changes had occurred in state law that would require ODS destruction.

Performance Standard Test. EOS Climate met the Performance Standard Test because it destroyed ODS that did not originate with U.S. federal government installations or stockpiles, and it utilized for destruction a RCRA-permitted Hazardous Waste Combustor (HWC), Clean Harbors Environmental Services of El Dorado, AR. NSF verified this by reviewing data that demonstrated that the source of R-12 refrigerant was Jaco Environmental appliance demanufacturing facilities reclaimed by Hudson Technologies and the stockpiled inventory of Hudson Technologies. NSF verified that the ODS was destroyed at Clean Harbors permitted facility in El Dorado, AR.

3.4 Regulatory Compliance

NSF reviewed the Attestation of Regulatory Compliance completed by EOS Climate. In addition, NSF conducted a review, on a sampling basis, of the regulatory compliance of the Clean Harbors destruction facility, examined operating parameters and reviewed performance during the destruction event against the permit performance requirements. NSF also reviewed documentation related to the transportation of ODS from Hudson Technologies to Clean Harbors, and found no deficiencies to the requirements of the U.S. Department of Transportation. At the HWC facility operated by Clean Harbors, NSF re-verified that its Title V, RCRA and NPDES permits were current, that monitoring required by the Title V permit and Section 6.7 of the Protocol was conducted for the entire period of the destruction event and within limits, that there were no outstanding NOV's from environmental regulatory agencies. In previous reporting periods in this project NSF verified that the facility has performed the required Combustion Performance Test (CPT) demonstrating a DRE in excess of 99.99% with a material less combustible than the destroyed ODS. With respect to Jaco Environmental facilities and the Hudson Technologies reclaiming facility, NSF has previously verified procedures that assure refrigerant handling according to the requirements of 40 CFR 82 Subpart F.

3.5 Project Boundaries and Emission Sources

Sources, Sinks and Reservoirs. NSF has verified that for this project reporting period, the relevant sources, sinks and reservoirs (SSRs) were SSR 1, SSR 2, SSR 4, SSR 5, SSR 6, and SSR 7, as these sources, sinks and reservoirs are defined in the US ODS Project Protocol.

3.6 Performance Against Project Protocol/Methodology

Monitoring and Operations Plan. In accordance with protocol requirements, EOS Climate had established a monitoring and operations plan entitled "EOS Climate ODS Destruction Monitoring and Operations Plan for Project EOS-JA-09-01." This document, which was reviewed at version 4/28/10, Revision 14, addressed monitoring, operations and reporting and described how relevant parameters required by the protocol in Table 6.2 were to be collected and reported.

Project Verification Report

Reserve ODS Tracking System. NSF verified that EOS Climate had made entries in the Reserve ODS Tracking System prior to verification. For the third reporting period, Clean Harbors Environmental Services issued one certificate of destruction dated 5-25-2010. The certificate of destruction included the information required by section 6.1 of the US ODS project protocol.

Point of Origin Documentation. NSF verified, through records, that a portion of the refrigerant destroyed in the third reporting period had originated at Jaco Environmental appliance demanufacturing facilities at 15 locations throughout the United States. At these facilities refrigerant was first collected in cylinders of 500 pounds or more. It was then shipped to the Hudson Technologies refrigerant reclaim facility in Champaign, IL. A bill of lading from Hudson Technologies to Clean Harbors and shipment weigh records from both Hudson Technologies and Clean Harbors, were reviewed. Another portion of the refrigerant destroyed originated from the stockpiles maintained by Hudson Technologies in Champaign, IL. The point of origin for this refrigerant is defined in the US ODS Project Protocol as the “location of the stockpile” for refrigerant ODS “stockpiled prior to the adoption date of this protocol and destroyed within twelve months of the adoption date of this protocol.” To establish the location of the stockpiled ODS, NSF reviewed a certification letter issued by Hudson Technologies stating that it owned, prior to February 1, 2010, all of the ODS delivered to EOS Climate, and describing the holding tanks (numbers 8 and 28) in Champaign, IL, from which 10,032 pounds of the refrigerant was drawn. NSF reviewed Hudson Technologies’ annual report to the Securities and Exchange Commission (“Form 10-K”) and noted that the company reported “refrigerant and cylinders” in inventory as of December 31, 2009, valued at \$6,485,000. NSF has concluded from this information that the refrigerant shipped for destruction was stockpiled by Hudson Technologies prior to the adoption of the protocol and that it was destroyed within twelve months of the adoption of the protocol. For these reasons NSF concludes that the refrigerant destroyed was eligible and that documentation of its point of origin was adequate.

Custody and Ownership. The refrigerant that EOS Climate purchased from Jaco Environmental and had reclaimed by Hudson Technologies was entirely sourced within the United States of America. NSF previously (March 2010) verified a sampling of purchase records at the Lombard, IL, Jaco Environmental facility. EOS Climate acquired title to refrigerant which had already been collected and stored at Hudson Technologies facilities in sealed containers. EOS Climate retained title of the refrigerant from the date that it shipped from Jaco Environmental to Hudson Technologies and from Hudson Technologies until it was received by the Clean Harbors Environmental Services’ destruction facility in El Dorado, AR. With respect to the refrigerant originating at Hudson Technologies stockpiles in Champaign, IL, ownership transferred to EOS Climate at the date of shipment to the Clean Harbors destruction facility. At that point ownership of the refrigerant transferred to Clean Harbors for the purposes of destruction. Title to the emission reductions that resulted from destruction remained with EOS Climate. NSF verified the status of ODS ownership and the ownership of ODS destruction credits by reviewing the Refrigerant Lease Agreement between Hudson Technologies and EOS Climate, bills of lading from Hudson Technologies to Clean Harbors on behalf of EOS Climate, and an agreement between EOS Climate and Clean Harbors. NSF has concluded from these documents that EOS Climate is the owner of the greenhouse gas emission reduction credits associated with this ODS destruction project.

Project Verification Report

Concentrated ODS Composition and Quantity Analysis Requirements. Eligible ODS obtained from the Jaco Environmental locations was reclaimed in Champaign, IL, by Hudson Technologies to remove impurities (water and oil). The ODS was then placed in bulk storage until it was shipped in bulk ISO containers to the Clean Harbors facility in El Dorado, AR. Upon arrival at Clean Harbors the ISO container was weighed and weigh tickets retained to establish pre- and post-destruction weight. A single, 120,000 lb. Fairbanks scale was used at Clean Harbors for the weighings. Calibration records of the scales were re-reviewed for this reporting period and found to demonstrate the required accuracy, such calibrations being conducted monthly. Time limits for weighings pre- and post-destruction according to the protocol were respected. Samples were drawn from the containers by DOT trained Clean Harbors laboratory technicians and shipped off-site to an independent laboratory for analysis by gas chromatography. The laboratory performing the ODS testing was AHRI-700-2006 certified. All sampling requirements of the protocol were found by NSF to have been met and appropriate records retained. The analysis of the samples drawn from both containers demonstrated that the refrigerant in each container was more than 90% CFC-12 by weight.

Destruction Facility Requirements. The Clean Harbors destruction facility in El Dorado, AR, is a RCRA-permitted HWC. According to the protocol, RCRA-permitted HWCs are considered to meet the TEAP requirements by default, and no further testing for TEAP compliance is required. NSF re-verified both the regulatory compliance of the destruction facility and its conformity with the requirements of the Reserve's ODS protocol. NSF re-reviewed Clean Harbors' destruction equipment monitoring and control system, its current Title V permit and RCRA permit in detail, compared performance parameters recorded during the reporting period destruction events with permit limits, and confirmed required monitoring equipment was used and that calibration of monitoring equipment was current and within Protocol allowances. NSF also interviewed operating personnel on use of the monitoring data base and controls and reviewed printouts from the data monitoring system generated at NSF's request during the verification for the specific reporting period destruction for all parameters required by the Protocol and Title V permit.

Monitoring Parameters. NSF verified that EOS Climate had carried out the monitoring required by the ODS protocol. The requirements were summarized in EOS Climate's "EOS Climate ODS Destruction Monitoring and Operations Plan for Project EOS-JA-09-01," as described above in an earlier paragraph.

3.7 Project Management System

Management System. NSF had previously verified the EOS Climate management system and relied in part upon that evidence obtained at company headquarters in San Francisco for this third reporting period. Further evidence was obtained through NSF's document review conducted for this reporting period.

Project Documentation. NSF verified that the required documents for the project's third reporting period had been completed and submitted to the Reserve. These included the Project

Project Verification Report

Submittal form, the signed Attestation of Title form, the signed Attestation of Regulatory Compliance form, and the signed Attestation of Voluntary Implementation form.

3.8 Calculation of GHG Emission Reductions

NSF separately calculated project emission reductions from information on the independent laboratory analysis reports and the certificates of destruction, and found EOS Climate's claimed emission reductions varied from ours by approximately 0.06 percent.

3.9 Corrective Action Requests/Recommendations

NSF issued no corrective action requests during the third reporting period. NSF issued one recommendation for improvement, to Clean Harbors Environmental Services.

3.10 Approved Variances or Deviations

There were no applications by EOS Climate for variances from any protocol requirements for the third reporting period of this project.

Project Verification Report

4. Verification Results

4.1 Verification Team Recommendation

Based on the verification activities described above, the verification team has concluded that the EOS Climate ODS project, in its third reporting period, has achieved the following emission reductions:

Reductions/Removals from 20-25 May 2010		Metric tons CO ₂ -e
Project baseline		114,329
- Project emissions		8,516
- Project adjustments (explain)		N/A
= Net project emission reductions/removals		105,730

4.2 Verification Audit Summary

Project Developer	EOS Climate, Inc. 71 Stevenson St., Suite 400 San Francisco, CA 94105 USA
Project Location	Clean Harbors Environmental Services 309 American Circle El Dorado, AR 71730
Project Type	Destruction of Ozone Depleting Substances
Project Period	20-25 May 2010
Protocol/Methodology	Climate Action Reserve, US Ozone Depleting Substances Project Protocol, v. 1
Emissions/Removals Verified	Vintage 2010: 105,730 metric tons CO ₂ -e
Verification Conclusion	Based upon the verification activities described above, NSF has concluded that EOS Climate's reported 2010 vintage emission reductions of 252,970 metric tons CO ₂ -e reported to the Climate Action Reserve for the period 20-25 May 2010, are, in all material respects, fairly stated.
Lead Verifier	 John C. Shideler, 6 August 2010
Internal Reviewer	Janette Lutz,
<i>This verification statement is valid when signed and dated by an NSF internal reviewer.</i>	