

METHODOLOGY ASSESSMENT REPORT

ACTIVITY METHOD FOR THE DETERMINATION OF ADDITIONALITY FOR RECOVERED AND STOCKPILED ODS REFRIGERANT ODS PROJECTS AND REVISIONS TO VM0016 V1.1



RUBY CANYON ENGINEERING

Document Prepared By: Ruby Canyon Engineering, Inc.

Methodology Title	Recovery and Destruction of Ozone-Depleting Substances (ODS) – VM0016 v1.1	
Version	Version 1.1	
	Methodology	
Methodology Category	Methodology Revision	X
	Module	X
	Tool	
Sectoral Scope(s)	Sectoral Scope 11. Fugitive emissions from industrial gases	

Report Title	Methodology Assessment Report for the Activity Method for the Determination of Additionality for Recovered and Stockpiled ODS Refrigerant ODS Projects and Revisions to VM0016 v1.1	
Report Version	Version 1.0	
Client	Tradewater, LLC	
Pages	33 pages in this report	
Date of Issue	16-November-2017	

Prepared By	Ruby Canyon Engineering, Inc.
Contact	743 Horizon Court, Suite 385, Grand Junction, CO, 81506 Tel: +1-970-241-9298 Email: mcote@rubycanyoneng.com www.rubycanyoneng.com
Approved By	Bonny Crews – Independent Technical Reviewer
Work Carried Out By	Michael Coté – Lead Validator Zach Eyler – Assessment Team Member Jessica Wade-Murphy – VCS Approved Standardized Methods Expert

Summary:

Ruby Canyon Engineering, Inc. (RCE) was retained by Tradewater, LLC (Tradewater) to perform the methodology assessment of the *Activity Method for the Determination of Additionality for Recovered and Stockpiled ODS Refrigerant Projects* as well as minor revisions to VCS Methodology VM0016 v1.1 – Recovery and Destruction of Ozone-Depleting Substances (ODS) from Products (VM0016). The *Activity Method for the Determination of Additionality for ODS Projects* provides a standardized method as a separate module for determining additionality for chlorofluorocarbon (CFC) destruction projects using VM0016.

The purpose and scope of the methodology assessment was to evaluate whether the activity method module and associated revisions to VM0016 were prepared in accordance to VCS program requirements. RCE’s assessment included a detailed review of the eligibility criteria, baseline scenarios and emissions, project boundaries and definitions, standardized methods applied, and data and parameters not monitored. In addition, RCE conducted a detailed analysis of the minor revisions made to VM0016 based on the activity method’s impacts, and a technical literature review of the state of ODS banks, emissions and destruction.

The assessment was conducted in accordance with the VCS Methodology Approval Process, VCS Standard, VCS Program Guide, VCS Guidance for Standardized Methods, and VCS ODS Requirements.

RCE’s assessment included a total of 22 findings. Tradewater provided satisfactory responses to all of RCE’s corrective action requests, clarifications, and requests for additional documentation.

RCE confirms that any uncertainties associated with the methodology assessment were addressed by Tradewater as part of the assessment process.

RCE confirms all methodology assessment activities, including objectives, scope and criteria, level of assurance, and the activity method and methodology revisions conform to the VCS Program Version 3.6 and VCS Standard Version 3.6. RCE concludes without any qualifications that the *Activity Method for the Determination of Additionality for ODS Projects* as well as minor revisions applied to VCS Methodology VM0016 meet the requirements of the VCSA, and recommends that VCSA approve the activity method module and revisions to the methodology.

Table of Contents

1 Introduction 5

 1.1 Objective 5

 1.2 Summary Description of the Methodology 5

 1.3 Method and Criteria 5

 1.4 Document Review 6

 1.5 Interviews 6

 1.6 Assessment Team 7

 1.7 Resolution of Findings 8

2 ASSESSMENT FINDINGS 9

 2.1 Relationship to Approved or Pending Methodologies 10

 2.2 Stakeholder Comments 10

 2.3 Structure and Clarity of Methodology 10

 2.4 Definitions 11

 2.5 Applicability Conditions 12

 2.6 Project Boundary 14

 2.7 Baseline Scenario 14

 2.8 Additionality 14

 2.9 Quantification of GHG Emission Reductions and Removals 15

 2.9.1 Baseline Emissions 15

 2.9.2 Project Emissions 16

 2.9.3 Leakage 16

 2.9.4 Net GHG Emission Reductions and Removals 16

 2.10 Monitoring 16

3 Assessment Conclusion 18

4 Report Reconciliation 19

5 Evidence of Fulfilment of VVB Eligibility Requirements 19

6 Signature..... 19

7 Appendix A – Documents Reviewed 20

8 Appendix B – Summary of Findings 23

1 INTRODUCTION

1.1 Objective

The purpose of the methodology assessment was to evaluate whether the *Activity Method for the Determination of Additionality for Recovered and Stockpiled ODS Refrigerant Projects* (Activity Method Module) and associated revisions to *VM0016 Recovery and Destruction of Ozone-Depleting Substances (ODS) v1.1* (VM0016) were prepared in accordance to VCS program requirements. RCE confirmed that the revisions met the conditions for minor methodology revisions under VCS Methodology Approval Process, therefore, VCS only requires the approval of a first methodology assessment. The findings of the assessment are described in this report.

1.2 Summary Description of the Methodology

The *Activity Method for the Determination of Additionality for Recovered and Stockpiled ODS Refrigerant Projects* provides a standardized method as a separate module/tool for determining additionality for certain ODS destruction projects. The activity method module, developed as a standardized method for additionality, uses the revenue streams option identified in VCS Standard v3.6 to define the positive list of activities.

The activity method module is intended to be used in conjunction with VM0016 for the recovery and destruction of ODS. The incorporation of the activity method module required minor methodology revisions to the VM0016. The applicability conditions of the activity method module and the revised VM0016 expand the eligible ODS sources to ODS stockpiles, but are limited to a subset of ODS – only CFCs: those collected in consumer quantities (≤ 250 -pound capacity containers) or recovered CFCs in any quantity are eligible. As a result, the activity method module covers project activities that recover and/or collect and then destroy CFC refrigerant that otherwise would remain on the market or be stored in stockpiles.

1.3 Method and Criteria

RCE conducted the assessment methods in accordance with the VCS Methodology Approval Process and standard GHG accounting and auditing procedures. Because the minor revisions did not expand the applicability of VM0016 to new types of project activities or materially impact the quantification of emission reductions, RCE completed a streamlined methodology approval process. RCE's assessment focused on the minor methodology revision description, activity method module, and the revised sections of VM0016. RCE conducted a detailed review of the eligibility criteria, baseline scenarios and emissions, project boundaries and definitions, standardized methods applied, and data and parameters not monitored. In addition, RCE assessed the documents' structure and clarity, including the clear definition of key terms.

RCE followed the following VCS criteria:

- VCS Standard v3.6, October 2016
- VCS Program Guide v3.6, October 2016
- VCS Guidance for Standardized Methods v3.3, October, 2013
- VCS Methodology Approval Process v3.6, March 2015

- VCS ODS Requirements v3.1, October 2011

1.4 Document Review

RCE conducted a detailed review of the activity method module and methodology revision documentation to ensure that sufficient evidence was provided to support the positive list of activities option for additionality. In addition, RCE team members all reviewed supporting documentation for the methodology revisions to VM0016. RCE’s lead assessor and team member focused on the technical aspects of the activity method module, and its relationship to VM0016 and other references to external ODS methodologies. RCE’s VCS Standardized Methods Expert reviewed the activity method module and the revised methodology’s adherence to VCS Guidance for Standardized Methods and Methodology Approval Process. All team members reviewed the documents for conformance to VCS Program Guide, the VCS Standard, VCS Guidance for Standardized Methods, and other guidance documents.

The final list of documents received and reviewed by the RCE assessment team is provided in Appendix A.

1.5 Interviews

RCE assessment team conducted interviews with the methodology proponent and their technical consultant throughout the assessment process. The interviews were used to discuss methodology assumptions, conservativeness, demonstration of additionality, VCS requirements, as well as to resolve corrective action requests, clarifications, and other methodology issues. Several rounds of teleconferences were needed to resolve all outstanding issues. The following table identifies the team members and stakeholders involved in the interviews.

Dates	Attendees	Topics
3/2/2017	Iris Caldwell, Michael Coté, Zach Eyler, Jessica Wade-Murphy, John Holler	Kick-off Meeting – Group discussed the scope of methodology assessment and specific areas of focus.
4/6/2017	Iris Caldwell, Tim Brown, Gabe Plotkin, Michael Coté, Zach Eyler, Jessica Wade-Murphy	Round One of Findings – Group discussed most of the items contained in Findings 1.0, focusing on the main concerns with eligibility and additionality.
6/11/2017	Iris Caldwell, Gabe Plotkin, Michael Coté, Zach Eyler, Jessica Wade-Murphy	Round Two of Findings – Group discussed Tradewater’s corrective actions and clarifications to Findings 2.0.
6/27/2017	Iris Caldwell, Tim Brown, Gabe Plotkin, Michael Coté, Zach Eyler, Jessica Wade-Murphy	Round Three of Findings – Group discussed Tradewater’s corrective actions and clarifications to Findings 3.0. All items are closed out.
7/19/2017	Tim Brown, Gabe Plotkin, Michael Coté	Exit Meeting – Group agreed on final documents to submit to VCS, the Activity Method Module, Revisions to VM0016 v1.1, and Methodology Assessment Report

1.6 Assessment Team

Michael Coté – Lead Assessor

Michael Coté is an experienced environmental engineer in the climate change industry with skills in inventory analysis, baseline methodology development, project evaluation and feasibility, emission reductions calculations, and validation/verification of greenhouse gas (GHG) offset projects and corporate inventories. He has worked in various aspects of the environmental and green energy industry for the past 26 years, from project identification, feasibility and development, to verification and registration in various GHG programs. For the past 12 years, Mr. Coté has specialized in voluntary and compliance carbon markets including the development and qualification of greenhouse gas (GHG) emission reduction projects and corporate GHG inventories.

Beginning in 2005, Mr. Coté and partner Ronald Collings founded Ruby Canyon Engineering Inc. (RCE), an organization dedicated to facilitating and qualifying GHG emission reduction projects (primarily targeting methane-to-energy projects from vented and fugitive methane emission sources) as well as providing corporate GHG inventory services. In addition, Mr. Coté led RCE's effort to receive its ANSI-accreditation as an ISO 14065 verification body in October 2009, and has since managed RCE's GHG validation and verification activities. Since receiving its accreditation, RCE has completed over 600 GHG validation/verifications. Mr. Coté has authored numerous GHG emissions baseline methodologies and project documents that have been submitted to U.S. EPA, the United Nations Framework Convention on Climate Change (UNFCCC), California Air Resources Board, Voluntary Carbon Standard, and the American Carbon Registry. He earned his Bachelor of Science degree (magna cum laude) in Environmental Science and Waste Management from Mesa State College in 1997.

Zach Eyler – Assessment Team Member

Zach serves as a Vice President for Ruby Canyon, utilizing his broad experience with greenhouse gas (GHG) programs and renewable energy to assist on a variety of work including GHG verifications, technical research and other client projects. In addition, he assists the company in understanding GHG regulations and policies across North America and internationally, using this knowledge to analyze potential new areas of growth. Specifically, Zach is helping lead Ruby Canyon's expansion into California's AB 32 cap-and-trade program as well as new Canadian province GHG programs in Quebec and Ontario. Zach also serves as Ruby Canyon's representative on a variety of GHG registry stakeholder groups that assist in the development of high level protocol and verification standards for new GHG programs. Zach has completed a wide range of verification work for projects across registries (PCT, CAR, TCR, ACR) including landfills, livestock, oil/gas, fuel switching, ODS, nitric acid production, and GHG entity inventories. Zach is currently an accredited Lead Verifier for the CAR, PCT and ACR programs. Zach is also an ARB accredited Lead Verifier and Project Specialist for livestock and ODS projects.

Prior to joining Ruby Canyon, Zach worked at Element Markets since 2008 where he managed over 15 carbon offset projects, and conducted all GHG policy and regulatory analysis to support the company's trading activities and client relationships in the U.S. and Canada. He also served as a company representative on carbon offset working groups including the Coalition for Emission Reduction Policy (CERP) and the Canadian Industry Provincial Offsets Group (IPOG). He holds a

Bachelor's degree in Environmental Technology from NC State University and a Master's of Environmental Management from Duke University's Nicholas School of the Environment.

Jessica Wade-Murphy de Jiménez – VCS Standardized Methods Expert

Jessica Wade-Murphy de Jiménez is an adviser on climate change mitigation, based in Colombia and fluent in English and Spanish. She has dedicated more than ten years to public and private sector initiatives to reduce greenhouse gas (GHG) emissions, especially in the application of financial incentives to achieve mitigation of GHGs. She offers a wealth of experience with the development, review and application of greenhouse gas accounting methodologies and is currently one of the ten members of the Methodologies Panel of the UNFCCC's Clean Development Mechanism. Jessica has developed and reviewed standardized methods for defining central elements of GHG mitigation projects, like baseline and additionality, for clients including CAF – Development Bank of Latin America, UNFCCC, EPRI, Volkswagen AG, and Solvay, for a variety of sectors and project types. Under the Verified Carbon Standard, she contributed to VM0022 Quantifying N₂O Emissions Reductions in Agricultural Crops through Nitrogen Fertilizer Rate Reduction, and VM0028 Methodology for Carpooling. Jessica holds a Bachelor's degree in Biological Sciences from the University of Chicago and a Master's of Science from Utrecht University (Netherlands).

Bonny Crews – Independent Technical Reviewer

Bonny Crews is a microbiologist with broad experience in soil, water, and environmental applications; she has a strong scientific and technical background with excellent communication skills. Bonny has a B.S. in Biology from St. Edward's University and an M.S. in Microbiology from Colorado State University where she studied the effects of oil shale retort on soil microorganism function. Bonny has a strong commitment to sustainable development. Specific interests in the greenhouse gas sector include landfill gas to energy projects, biogas production from agricultural wastes, composting and co-digestion of agro-industrial wastes, and alternative energy projects. Bonny is an accredited lead verifier for the livestock, organic waste digestion, and landfill sectors for the Climate Action Reserve (CAR). Additionally, Bonny is an accredited lead verifier for The Climate Registry (TCR), the American Carbon Registry (ACR) and the California Air Resources Board (ARB). Bonny is also an RCE-designated lead verifier and validator to the British Columbia (BC) Pacific Carbon Trust (PCT).

In various roles as Lead Verifier, Senior Reviewer, Team Member, and Project Lead at Ruby Canyon, Ms. Crews has participated in numerous projects that include GHG inventories, verifications, project and protocol validations, research, and consulting. Prior to joining Ruby Canyon, Bonny worked for seven years at Atlantic Richfield's research laboratory in Plano, TX. There she was a technical expert with the environmental support group, and served as the in-house expert on bioremediation and other biological environmental remediation methods. She has given presentations at national conferences, and written technical reports and journal articles. Bonny enjoys environmental problem-solving and working with multi-disciplinary teams.

1.7 Resolution of Findings

The methodology assessment included three rounds of evaluation by the assessment team, with the final assessment closing out all outstanding issues - concluding that the activity method

module and VM0016 revisions were in conformance to VCS rules. Findings related to corrective action requests, clarifications, and requests for additional documentation were resolved during each round of evaluation. The RCE assessment team submitted an updated Findings to Tradewater during each round of assessment, whereas Tradewater responded with corrective actions, edited documents, additional documents, as well as written responses in the Findings. For larger issues that required additional dialog, the RCE assessment team and Tradewater discussed the details via teleconferences throughout the assessment process.

During the methodology assessment process, RCE identified 22 items requiring a response including corrective action requests, clarifications, and additional documentation requests.

Several of the main findings of the assessment and points of discussion surrounded the inclusion of ODS stockpiles as an eligible source of ODS into a methodology that specifically prohibited stockpiled ODS. Another important aspect of the assessment included several rounds of changes to the definitions of Recovery Facility and Stockpile, as well as significant edits to the Additionality section of VM0016.

The RCE assessment team and Tradewater held several discussions regarding the possible effect of including ODS stockpiles on realistic and credible alternative baseline scenarios such as long-term storage of ODS. The RCE assessment team accepted Tradewater's revision to VM0016 baseline scenario R4 that now includes "continued storage in stockpiles". Accordingly, RCE accepted Tradewater's revisions to the leakage rate term $LR_{ref,y}$ for stockpiles. Furthermore, another important step to resolving several issues with the use of stockpiles within the activity method module was limiting the stockpile definition to only CFCs.

RCE requested additional support documentation to justify the proposed activity method applicability conditions, as well as additional background information as to the worldwide state of ODS banks and stockpiles. RCE requested additional information regarding the documentation to be provided to the verification body in order to demonstrate that the standardized method threshold was met. RCE agreed with the streamlined process – part of the reason for the activity data tool is to streamline the additionality demonstration for individual projects, particularly financial additionality analysis.

For a summary of all the findings and resolutions, see Appendix B Tables

2 ASSESSMENT FINDINGS

The RCE assessment team found the activity method module and revisions to VM0016 to be in full compliance with the VCS Standard and other VCS requirements. The activity method module provides an activity method that streamlines the additionality demonstration of project activities for destruction of CFC recovered from systems or from consumer quantity ODS containers.

RCE followed a methodological approach to the assessment, using applicable sections of the VCS Methodology Approval Process (Sections 4 & 7), and the VCS Validation and Verification Manual (Section 5.2). Key elements of the methodology assessment included the following areas:

- Minor Methodology Revisions Description

- Activity Method Module
- Applicable Conditions
- Project Boundaries
- Baseline Scenarios
- Additionality

The RCE assessment team concluded that the activity method module operates properly and applicably, when used together with the revised methodology VM0016.

2.1 Relationship to Approved or Pending Methodologies

The revisions to VM0016 incorporate references to default emission rates for ODS stockpiles in two Climate Action Reserve (Reserve) methodologies.

- Reserve Article 5 Ozone Depleting Substances Project Protocol v2.0 – Revisions to VM0016 refer to annual emissions (leakage) rates for ODS destroyed for the term $LR_{refr,i}$, to be used in baseline emissions calculations. The information is contained in Table 5.1 of the Reserve Protocol.
- Reserve U.S. Ozone Depleting Substances Project Protocol v2.0 – Revisions to VM0016 refer to annual emissions (leakage) rates for ODS destroyed for the term $LR_{refr,i}$, to be used in baseline emissions calculations. The information is contained in Table 5.2 of the Reserve Protocol.
- Reserve Article 5 Ozone Depleting Substances Project Protocol v2.0 – Revisions to VM0016 refer to type and leakage rates of substitute chemical for the term $LR_{substitute,i,y}$ to be used in leakage emissions calculations. The information is contained in Section 5.2.1 of the Reserve Protocol.
- Reserve U.S. Ozone Depleting Substances Project Protocol v2.0 - Revisions to VM0016 refer to type and leakage rates of substitute chemical for the term $LR_{substitute,i,y}$ to be used in leakage emissions calculations. The information is contained in Table 5.5 of the Reserve Protocol.

The Reserve ODS Protocols already include stockpiles of ODS in containers.

2.2 Stakeholder Comments

No stakeholder comments were received during the public comment period.

2.3 Structure and Clarity of Methodology

The RCE assessment team confirmed that the activity method module and revisions to VM0016 were written in a clear, logical, concise, and precise manner. In addition, RCE confirmed the documents closely followed the VCS templates and that the criteria and procedures are well documented in the appropriate sections of the documents. RCE confirmed that the terminology

used in the activity method module and revisions to VM0016 are consistent with the VCS Program and generally accepted GHG accounting practices.

The RCE assessment team confirmed that key words used in the activity method module and revisions to VM0016 were used appropriately and consistently to denote firm requirements or permissible or allowable options. The term “must” was used 10 times, “should” was used zero times, and “may” was used nine times in the activity method module.

The RCE assessment team confirmed that criteria and procedures in the activity method module and revisions to VM0016 were written in a transparent manner that can be understood and applied readily and consistently by project proponents, and allow projects to be unambiguously validated and verified against them.

Overall, the RCE assessment team concluded that the structure and clarity of the activity method module and revisions to VM0016 meet the requirements of the VCS Program.

2.4 Definitions

RCE confirmed that all new key term definitions included in the activity method module were appropriately and clearly defined, and consistent in their usage with VM0016. The new terms include the following:

- **CFC refrigerant** - A class of ODS that was phased out of production under the Montreal Protocol. Eligible CFC refrigerants are given in Annex A of Annex I to the VCS Methodology *VM0016 Recovery and Destruction of Ozone-Depleting Substances (ODS) v1.1*.
- **Collection** - The process by which CFC refrigerant is obtained by the project proponent from a third-party source.
- **Consumer quantity CFC** - Stockpiled CFC refrigerant in an external container with a capacity less than or equal to 250 pounds and not in the possession of the original manufacturer. Consumer quantity CFC may exist in stockpiles totaling more than 250 pounds, provided no single container capacity exceeds 250 pounds.
- **Recovered CFC refrigerant** - CFC refrigerant that has been recovered, as that term is used in *VM0016 Recovery and Destruction of Ozone-Depleting Substances (ODS) v1.1*, and for which the project proponent can document the system from which the CFC refrigerant was recovered.

RCE confirmed that all definition revisions included in VM0016 were appropriately and clearly defined, and consistent in their usage with the activity method module. The revised definitions include the following:

- **Ozone-Depleting Substance (ODS)** means a family of man-made compounds that includes, but is not limited to, chlorofluorocarbons (CFCs), bromofluorocarbons (halons), methyl chloroform, carbon tetrachloride, methyl bromide, and hydrochlorofluorocarbons (HCFCs). These compounds have been shown to deplete stratospheric ozone, and

therefore are typically referred to as ODS. Many Ozone-Depleting Substances also have a Global Warming Potential (GWP) and are therefore Greenhouse Gases (GHG).

- CFC ODS: An ODS listed in Annex A, Group 1 or Annex B, Group 1 of Annex I of this methodology.
 - HCFC ODS: An ODS listed in Annex C, Group 1 of Annex I of this methodology.
- **ODS refrigerant**: means a chemical (being an ODS) used or intended for use in a cooling mechanism, such as an air conditioner or refrigerator, as the heat carrier which changes from gas to liquid and then back to gas in the refrigeration cycle.
 - **Recovery Facility**: is the facility where the project proponent recovers ODS refrigerants and blowing agents from appliances, or the facility where collected refrigerant is aggregated by the project proponent in preparation for destruction. The location where refrigerant is recovered from stationary equipment, such as a chiller, is not a recovery facility.
 - **Stockpile** means a CFC ODS stored in an external container(s) by a single person or entity (including but not limited to private companies, organizations, and/or government agencies), or by multiple people or entities at a single location. A stockpile may be composed of one or more containers of any size. Containers in a stockpile may consist of recovered, reclaimed, recycled, or unused (manufactured for use but never so used) CFC ODS.

2.5 Applicability Conditions

The RCE assessment team confirmed that the applicability conditions as a whole are sufficiently clear for determining which project activities are eligible under VM0016 and the use of the project activity module. The applicability conditions provided a limited expansion of the eligible ODS sources in VM0016 by including stockpiled CFCs found in consumer quantities. The previous version of VM0016 did not apply to the destruction of stockpiled ODS.

The applicability conditions defined for the activity method module represent a carefully targeted positive list. By limiting the ODS source to CFCs only, the applicability conditions limit potential free riders, directing project activities that destroy other ODS gases to undertake assessment using existing sections of VM0016, and maintain the environmental integrity of the VCS Program. The project proponent must submit appropriate documentation that the project activity meets all of the applicability conditions in order to comply with the positive list.

Tradewater provided sufficient information and documentation to show that the applicability conditions, while written based on countries where data was available to establish a benchmark (or positive list), can be applied to other geographic areas worldwide.

The activity method module contains the following applicability conditions:

- The project activity consists of the collection of recovered CFC refrigerant in any quantity; or
- The project activity consists of the collection of CFC refrigerant that meets the definition of consumer quantity CFC.

The activity method module is not applicable under the following conditions:

- The project activity consists of destruction of CFC refrigerant collected from, or as part of, a product stewardship scheme or other program that creates incentives or mechanisms that result in CFC destruction as an industry common practice (see Appendix A for additional detail). At validation, the project proponent must provide a summary description of the schemes or programs designed to incentivize ODS destruction in the countries in which the CFC refrigerant is collected. Schemes or programs that incentivize only the collection or reclamation of CFC refrigerants—and not its destruction—need not be discussed.

-

The RCE assessment team found that the above applicability conditions for the activity method module are written in a clear and precise manner such that it can be determined whether a project activity meets with the condition, and that conformance with the applicability condition can be demonstrated at the time of project validation phase.

The revised methodology VM0016 contains the following applicability conditions (*revisions in italics*):

- This methodology is applicable to project activities recovering and destroying ODS where the baseline scenario is the partial or total atmospheric release of ODS. *This methodology does not apply to ODS refrigerant that was manufactured for the sole purpose of its subsequent destruction.*
- Project activities can be implemented in Article 5 as well as in Non-Article 5 countries¹.
- Only ODS listed in Annex I of this methodology, and for which the VCS rules (as may be updated from time to time) apply, are eligible. *ODS in a stockpile must be CFC ODS in order to be eligible.*
- The methodology can be applied to either ODS refrigerants and/or ODS blowing agents. In the case of ODS blowing agents the methodology is only applicable to project activities recovering and destroying ODS blowing agents contained in insulation foam of end of life refrigerator appliances. The ODS blowing agent must be extracted from the foam to a concentrated form prior to destruction. This must be done under negative pressure to ensure that fugitive release of ODS cannot occur.
- All ODS must be collected, stored, and transported in cylinders or other hermetically sealed containers.

The revised VM0016 is not applicable under the following conditions:

- *None*

RCE assessment team found that the revised applicability conditions above are written in a clear and precise manner such that it can be determined whether a project activity meets with the condition, and that conformance with the applicability condition can be demonstrated at the time of project validation phase.

¹ For the avoidance of doubt: Recovery and destruction activities can take place in separate countries.

2.6 Project Boundary

The activity method module and revision to VM0016 did not alter the existing project boundary included in VM0016. However, the definition of “Recovery Facility” in the existing VM0016 project boundary was revised and expanded to include the aggregation of ODS in addition to recovered ODS. RCE confirms the revised definition is appropriate for the project activities included in the activity method module, and there was no need to expand the project boundaries in VM0016.

2.7 Baseline Scenario

The activity method module required the modification of one of the existing baseline scenarios in VM0016. The modification to R4 is shown in italics:

R4 Atmospheric release of the ODS refrigerant or partial capture and reuse in existing products *or continued storage in stockpile*

The RCE assessment team confirmed the baseline scenario for the activity method module was appropriate and justified for VM0016. Tradewater provided adequate and sufficient supporting documentation to justify the alternative baseline scenario - long-term storage of ODS in stockpiles resulted in emissions leaking to the atmosphere from containers. The RCE assessment team confirmed the baseline scenario was at least as conservative as the other baseline alternatives contained in VM0016.

2.8 Additionality

The activity method module uses an activity method approach as described in the VCS Standard for the demonstration of additionality. The activity method module uses Option C: Revenue Streams to meet the additionality requirements of a Positive List. The RCE assessment team confirmed that the Option C additionality requirements are appropriate for the project activities covered by the activity method module. The documentation and external references provided by Tradewater clearly demonstrate that, though capital costs are relatively low, the project activity has no significant sources of revenue other than revenue from the sale of GHG credits so the project activity meets the conditions of Option C.

The applicability conditions of the activity method module represent the positive list, therefore projects that meet the applicability conditions of the activity method module and apply the revised VM0016 are deemed additional.

Prior to revisions, VM0016 Additionality section only included a reference to the latest version of the CDM “Tool for the demonstration and assessment of additionality”. The revisions to the Additionality section of VM0016 now include a clear and concise description as to when to apply the conditions of the activity method module, as well as the two-step approach for demonstrating additionality when using the activity method module.

The RCE assessment team approved the following revisions to the Additionality section:

Projects that destroy CFC refrigerant and fulfill the applicability conditions of the VCS standardized method module “Activity method for the determination of additionality for ODS projects” should use the two-step activity method under the heading “Destruction of CFC refrigerant” for the demonstration of additionality. All other projects should use the methodology set forth below under the heading “Destruction of ODS refrigerant and/or ODS blowing agents.”

Destruction of CFC refrigerant

Step 1: Regulatory surplus

The project proponent must demonstrate regulatory surplus in accordance with the rules and requirements regarding regulatory surplus set out in the latest version of the *VCS Standard*.

Step 2: Positive list

The applicability conditions of VCS standardized method module “Activity method for the determination of additionality for ODS projects” represent the positive list. The positive list was established using the revenue streams option (Option C in the *VCS Standard*). Projects that meet all of the applicability conditions of this methodology and the VCS standardized method module “Activity method for the determination of additionality for ODS projects” are deemed additional.

Destruction of ODS refrigerant and/or ODS blowing agents

This methodology uses a project method for the demonstration of additionality of all project activities that are not applicable to the activity method described above. This includes the destruction of ODS blowing agents and the destruction of other ODS refrigerants where the activity method is not applicable or preferred. The project method demonstration of additionality shall apply the latest version of the CDM “Tool for the demonstration and assessment of additionality”.

The activity method module and revisions to VM0016 did not alter the existing regulatory surplus requirements set forth in the *VCS Standard*.

2.9 Quantification of GHG Emission Reductions and Removals

2.9.1 Baseline Emissions

The activity method module did not alter the baseline emissions calculations in VM0016.

Descriptions of two of the baseline emissions parameters ($RR_{refr,i}$ and $LR_{refr,i}$) used in the equations were revised to include stockpiled ODS.

Default emissions rate for $LR_{refr,i}$ for the case of stockpiled ODS that cannot be legally be sold into the commercial refrigerant market was established as a default emission rate of 10% by reference to a 2013 UNEP Report. Also, default emissions rates were established for ODS

refrigerant used or reused in existing equipment by reference to the Climate Action Reserve U.S. and Article 5 Countries ODS Project Protocols. The rates vary depending on whether the ODS is sourced from an Article 5 or non-Article 5 country, and by ODS type for non-Article 5 country.

2.9.2 Project Emissions

The activity method module did not alter the project emissions calculations in VM0016.

2.9.3 Leakage

The activity method module did not alter the leakage emissions calculations in VM0016.

Default emissions rates for $LR_{\text{substitute},i,y}$ for all ODS was established by reference in VM0016 to the Climate Action Reserve U.S. and Article 5 Countries ODS Project Protocols. The references were expanded to include: *official published data, research, and industry studies*, for both Article 5 and non-Article 5 countries.

The RCE assessment team concludes that these default emissions rates are appropriate and conservative.

2.9.4 Net GHG Emission Reductions and Removals

The activity method module did not alter the emissions reduction calculations in VM0016.

2.10 Monitoring

The RCE assessment team reviewed all revisions to the monitoring section of VM0016 which focused primarily on “Composition and Quantity Analysis Requirements”. In addition, several revisions were made to “Data and Parameters Not Monitored” for the terms $VR_{\text{ref},i}$, $DR_{\text{ref},i}$, $RR_{\text{ref},i}$, $LR_{\text{ref},i}$, $LR_{\text{substitute},i}$, and Substitute Chemical *i*. Most of the revisions brought the methodology in closer alignment with other ODS protocols, namely the Reserve ODS Project Protocols.

RCE assessment team approved the following revisions to the monitoring section text (noted in quotations):

On page 18:

Composition and Quantity Analysis Requirements

The following requirements must be met when weighing the containers of ODS:

“If a scale is found to be out of tolerance, it must be recalibrated.”

The laboratory performing the composition analysis must not be affiliated with the project proponents “or the project activities beyond performing these services”.

The following requirements must be met for each sample:

“4. The technician must ensure that the sample is representative of the contents of the container.”

On page 19:

In the case where no such standards exist, the US Air-Conditioning, Heating and Refrigeration Institute 700-2006 standard shall be applied. The analysis shall provide:

Moisture level in parts per million. The moisture content of each sample must be less than 75% of the saturation point for the ODS based on the temperature recorded at the time the sample was taken. “For containers that hold mixed ODS, the sample’s saturation point shall be assumed to be that of the ODS species in the mixture with the lowest saturation point that is at least 10 percent of the mixture by mass.”

If any of the requirements above are not met, no GHG reductions may be verified for ODS destruction associated with that container. “If a sample is tested and does not meet one of the requirements as defined above, the project proponents may elect to have the material re-sampled and re-analyzed. Project proponents may sample for moisture content and perform any necessary de-watering prior to the required sampling and laboratory analysis.”

Project developer was changed to project “proponent” in one place.

Composition and Quantity Analysis Requirements for Mixed ODS

Project developer was changed to project “proponent” in one place, and project monitoring plan was changed to “project description” one time.

On page 20:

Prior to sampling, the ODS mixture must be circulated in a container that meets all of the following criteria:

“4. The liquid port intake must be at the bottom of the container, and the vapor port intake must be at the top of the container. For horizontally-oriented mixing containers, the intakes must be located in the middle third of the container.”

The RCE assessment team approved the following revisions to the terms in Data and Parameters Monitored:

Data and Parameters Monitored

Data Parameter	Assessment Team Findings
FC _{i,j,y} – Mass or volume unit per year	Utility bills and invoices were appropriately added as alternative measurement procedures to the existing procedures for on-site measurements of fuel.
EC _{P,J,y} - Amount of electricity consumed by the project activity from the grid	Utility bills and invoices were appropriately added as alternative measurement procedures to the existing procedures for on-site measurements for purchased electricity.

The RCE assessment team approved the following revisions to the terms in Data and Parameters not Monitored (available at validation):

Data and Parameters not Monitored

Data Parameter	Assessment Team Findings
VR _{refr} – Rate of ODS refrigerants (destroyed) which would be vented in the baseline	Revisions to the source of data, values applied, and measurement procedures were appropriate and conservative.
DR _{refr} - Rate of ODS refrigerants (destroyed) which would be destroyed in the baseline	Revisions to the source of data and default value applied were appropriate and conservative.
RR _{refr,i} - Rate of ODS refrigerant i (destroyed) which would be used, reused or remain in storage in the baseline	Revisions to the source of description, data and values applied were appropriate and conservative. The revisions included adding used and stockpiled ODS to the description, and alternative data sources for default rates.
LR _{refr,i} - Leak rate of ODS refrigerant i (destroyed), which would be used as refrigerant for existing equipment or remain in storage in the baseline	Revisions to the source of description, data and values applied were appropriate and conservative. The revisions included adding stockpiled ODS to the description, and alternative data sources for ODS leak rates.
LR _{substitute,i} – Leak rate of the substitute chemical i.	Revisions to the source of data and values applied were appropriate and conservative. The revisions included alternative data sources for applying substitute chemical leak rates.
Substitute Chemical - Chemical i substituting ODS refrigerant i where in the baseline refrigerant ODS would have been re-used and in the project scenario must be substituted by other chemicals	Revisions to the source of data and values applied were appropriate and conservative. The revisions included alternative data sources for applying a substitute chemical.

The RCE assessment team confirms that the default rates and default emission rates were justified and considered correct and conservative in each of the cases included in the methodology.

3 ASSESSMENT CONCLUSION

The RCE assessment team concludes that the *Activity Method for the Determination of Additionality of ODS Projects* and Revisions to VM0016 v1.1 adhere to the methodology assessment criteria established for this assessment. RCE concludes without qualifications or limitations that the *Activity Method for the Determination of Additionality of ODS Projects* and Revisions to VM0016 v1.1 meet the requirements of the VCS Program Guide, VCS Standard, VCS Guidance Standardized Methods, VCS Methodology Approval Process, and VCS ODS Requirements. As a result, RCE recommends that VCSA approve the activity method module and revisions to VM0016 as prepared by Tradewater.

4 REPORT RECONCILIATION

Only a single assessment was required by VCSA.

5 EVIDENCE OF FULFILMENT OF VVB ELIGIBILITY REQUIREMENTS

RCE met the eligibility requirements set out in the VCS Methodology Approval Process and VCS Standard based on its experience in Sectoral Scope 11 and ODS destruction projects, and used a standardized methods expert as part of the assessment team.

6 SIGNATURE

Signed for and on behalf of:

Name of entity: Ruby Canyon Engineering, Inc.

Signature: 

Name of signatory: Michael M. Coté

Date: November 16, 2017

7 APPENDIX A – DOCUMENTS REVIEWED

AFEAS. (2004). *Production, sales and atmospheric releases of fluorocarbons through 2001*. Alternative Fluorocarbons Environmental Acceptability Study, Arlington, VA, USA. Available at: [http:// www.afeas.org](http://www.afeas.org)

Climate Action Reserve. (2012). *Article 5 ODS Project Protocol*, Version 2.0.

Climate Action Reserve. (2012). *U.S. ODS Project Protocol*, Version 2.0.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmgH. (2016). *Development of a framework for the disposal of ODS and HFCs*. GIZ Proklima side event at 37 OEWG Geneva

Energy Investigation Agency. (2009). *Recovery and Destruction of ODS Banks: Urgent Action for Global Climate Protection*

Energy Investigation Agency. (2016). *National Producer Responsibility Schemes Under the EU F-Gas Regulation*. Briefing Note

Heubes, Jonathan, Irene Papst, and Johanna Gloël. (2015). *Management and destruction of existing ozone depleting substances banks*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

ICF International. (2008). *Study on the Collection and Treatment of Unwanted Ozone-Depleting Substances in Article 5 and Non-Article 5 Countries*, Final Report.

ICF International. (2009). *ODS Destruction in the United States of America and Abroad*.

ICF International. (2010). *Study on Financing the Destruction of Unwanted Ozone-Depleting Substances through the Voluntary Carbon Market*, Final Report. The World Bank.

Office of Fluorocarbons Control Policy. (2016). *Let's Protect the Ozone Layer*. Ministry of the Environment, Government of Japan, Tokyo. Available at: <https://www.env.go.jp/en/earth/ozone/leaf2016/Full.pdf>

Recovery. (2016). *2016 Report of the Corporate Trustees*. Trust Administrators, PricewaterhouseCoopers. Available at: <http://www.refrigerantrecovery.co.nz/assets/refrigerant-recovery--2016-report-of-the-corporate-trustee.pdf>

Refrigerant Reclaim Australia. *Potential Recovery*. Available at <https://refrigerantreclaim.com.au/program-performance/potential-recovery/>

Refrigerant Reclaim Canada. *Frequently Asked Questions*. Available at <http://www.refrigerantmanagement.ca/faq.php>

Tradewater, LLC. (July 2016) *Minor Methodology Revision Description_VM0016_July1*

Tradewater, LLC. (March 2017) Activity Method for the Determination of Additionality of ODS Projects, v1.0 public comment

Tradewater, LLC. (May 2017) Activity Method for the Determination of Additionality of ODS Projects, v1.0

Tradewater, LLC. (June 2017) Activity Method for the Determination of Additionality of ODS Projects, v1.0

Tradewater, LLC. (March 2017) Recovery and Destruction of Ozone Depleting Substances (ODS) from Products v1.1 public comment

Tradewater, LLC. (May 2017) Recovery and Destruction of Ozone Depleting Substances (ODS) from Products v1.1

Tradewater, LLC. (June 2017) Recovery and Destruction of Ozone Depleting Substances (ODS) from Products v1.1

Tradewater, LLC. (July 2017) Recovery and Destruction of Ozone Depleting Substances (ODS) v1.1

Tradewater, LLC. (October 2017) Revised Methodology 6 October 2017, Recovery and Destruction of Ozone Depleting Substances (ODS) v1.1

Tradewater, LLC. (July 2017) Standardized Method VM0016 6 October 2017, Activity Method for the Determination of Additionality of Recovered and Stockpiled ODS Refrigerant Projects, v1.0

United Nations Environment Programme. (2012). *Study on Disposal of ODS Collected from Refrigerators and Air Conditioners under the Mexican Efficient Lighting and Appliances Program*. Executive Committee of the Multilateral Fund. Document No. 66, Montreal. Available at: <http://www.multilateralfund.org/66/English/1/66%20Inf.2.pdf>

United Nations Environment Programme. (2013). *Report on Progress and Experiences gained in Demonstration Projects for the Disposal of Unwanted ODS*. Executive Committee of the Multilateral Fund. Document No. 7054, Bangkok. Available at: <http://www.multilateralfund.org/70/English/1/7054.pdf>

United Nations Environment Programme. (2015). *Desk Study on the Evaluation of the Pilot Demonstration Projects on ODS Disposal and Destruction*. Executive Committee of the Multilateral Fund. Document No. 7510, Bangkok. Available at: <http://www.multilateralfund.org/75/English/1/7510.pdf>

United Nations Environment Programme, Ozone Secretariat. *The Montreal Protocol on Substances that Deplete the Ozone Layer, Article 2A: CFCs*. Available at <http://ozone.unep.org/en/handbook-montreal-protocol-substances-deplete-ozone-layer/9>

United Nations Industrial Development Organization. (2013). *Factors influencing the international trade of carbon offsets from the destruction of ozone depleting substances*

United Nations Industrial Development Organization. (2010). *UNIDO Project Concept on ODS Destruction in Article Countries*

8 APPENDIX B – SUMMARY OF FINDINGS

List of Findings for Assessment of Activity Method Module

Finding	Description	Project Proponent Response & Action	RCE Conclusions
CAR1	<p>Activity method module section 4. The applicability conditions require the project proponent to provide a sworn project revenue and capital expenditure statement identifying any revenue the project proponent will receive for the project; however, this is not considered objective evidence in the context of a verification. Objective evidence of the fulfilment of the revenue streams approach should be provided and the timing for demonstrating the evidence should be specified.</p>	<p>Initially, the activity method module was revised to include additional detail on the documentation to be provided by the Project Proponent, including a financial pro forma illustrating the expected revenue streams and capital expenditures for the project at the validation phase as well as additional documentation and financial statements at each verification. Templates for these documents were added in a proposed Appendix B.</p> <p>VCSA reviewed the proposed changes to activity method module, and determined that providing hypothetical or pro forma financials is an unnecessary step for the project proponent to demonstrate that the project activity meets the applicability conditions and complies with the positive list approach.</p> <p>Activity method module section 4 and Appendix A was edited to remove references to project proponent financial statements. Proposed Appendix B was deleted.</p>	<p>RCE assessment team agrees with VCSA that project activities using standardized methods and the positive list do not require evidence of demonstrating financial additionality during the validation phase.</p> <p>Revised corrective action accepted.</p>

CAR2	Activity method module section 4. The applicability conditions must state that this module applies only to CFCs (Montreal Protocol Annex A and B gases).	Module was updated to exclude ODS other than CFCs. References in VM0016 were also updated where appropriate.	Corrective actions in the activity method module and VM0016 accepted.
CAR3	Activity method module section 4. In demonstrating the negative applicability condition on application of incentives or other mechanisms for ODS destruction, the project proponent should provide a summary of any existing such schemes or mechanism in the nation(s) in which the ODS is collected for the project activity. Product stewardship is only one of several possible national and international financial incentives (i.e. producer responsibility programs, fees, taxes, levies, energy efficiency programs) that should be evaluated in the project nation(s). The summary should identify any ongoing ODS recovery, collection, & storage incentives in that country, and whether these incentives apply to ODS destruction.	This requirement was added to Section 4 of the activity method.	Corrective actions in the activity method module accepted.
ADR1	Activity method module Appendix A. In demonstrating the revenue streams option, please provide an examples of typical capital expenditures associated with the project activity, taking into account the VCS program definition of	Typical capital costs include purchase of (1) ODS refrigerant, (2) equipment to weigh and sample the ODS refrigerant, (3) consolidation tanks, and (4) potentially other expenses associated with handling and destruction facilities. Costs will vary	Additional documentation considered sufficient to close finding.

	capital expenditure.	wildly depending on the location, set-up, etc.	
ADR2	Activity method module Appendix A. In carrying out the common practice analysis, please make reference to a broader range of programs and incentives using more recent references to bolster the demonstration, for example pilot programs for ODS destruction in Mexico and Ghana.	Appendix A was revised to include information from additional references, including other programs and incentives.	Additional documentation and revisions to activity method module considered sufficient to close finding.
CL1	Activity method module section 3, definitions. In the definition of consumer ODS, clarify what is meant by "non-manufacturer" because different types of manufacturers could be contemplated here (manufacturer of ODS, manufacturer of cooling equipment).	The intent is that the ODS not be in the possession of the original ODS manufacturer. Definition was clarified in Section 3 of the activity method.	Clarification and edits are to activity method module accepted.
CL2	"Activity method module section 3. The section should more clearly define and distinguish "collection" from "recovery" of ODS. The term recovery is defined and used throughout VM0016 Version 1.1 and ODS Requirements Version 3.1, but collection is not defined. The introduction of unused ODS means another facility now is relevant – a collection facility, since unused ODS does not need to be “recovered” from products, rather, the cylinders need to be collected (and aggregated) before being	"The definitions for "collection" and "recovery facility" were revised. To be clear, we think there is an important distinction between collection and aggregation activities; therefore, the reference to aggregation has been removed from the definition of collection. We consider collection activities to be outside of the GHG boundary and aggregation to be within the boundary. Along with these changes in definitions, we added the option to determine project	Clarification and edits to activity method module and VM0016 accepted.

	<p>sent to the destruction facility. Thus, the methodology needs to either define a new facility for collection (and add to GHG boundaries), or needs to expand the existing definition of recovery facility to cover the collection facility activities. Furthermore, adding a new facility to the emissions sources of GHG to the project boundary may require additional updates throughout the methodology, particularly as it relates to project emissions equations. "</p>	<p>emissions from the recovery facility using utility bills. See Section 3 in VM0016 (pg 24 and 27)."</p>	
CL3	<p>Activity method module section 4, applicability conditions. There is lack of clarity in the applicability conditions because the terms "consumer ODS" and "Consumer quantities" are used interchangeably; however, "consumer quantities" is not defined in the module while "consumer ODS" is.</p>	<p>Clarification was added to Sections 3 and 4 of the activity method.</p>	<p>Clarification and edits to activity method module are accepted.</p>
CL4	<p>Please provide the rationale behind the use of 250 lbs for the Consumer ODS definition.</p>	<p>Based on Tradewater's industry experience, CFC refrigerants are bought and sold to individual consumers and small businesses in standard sizes. This principally includes 12-14 oz cans, and disposable cylinders of 15, 20, 30 and 50 lbs. But it also frequently includes 145 and 250 lb recovery cylinders.</p>	<p>Clarification adequate and sufficient to close finding.</p>
CL5	<p>Activity method module, section 4. Please clarify the date(s) in which the</p>	<p>The reference to the Montreal Protocol was removed from the activity method.</p>	<p>Clarification and edits to activity method module are accepted.</p>

	term "banned" is referring to.		
CL6	Activity method module, section 4. Please clarify why the second option of "manufactured by a company that ceased production of ODS refrigerant as required by the Montreal Protocol" is needed in addition to option 1.	This applicability condition was removed from the activity method.	Clarification and edits to activity method module are accepted.
CL7	Activity method module section 4 references Annex A CFCs of Annex 1 but not Annex B - explain the reason?	Our understanding is that the CFCs listed in Annex B, Group 1 are not refrigerants, and therefore these were not specifically included in the activity method.	Clarification adequate and accepted.

List of Findings for Assessment of Revisions to VM0016

Finding	Description	Project Proponent Response & Action	RCE Conclusions
CAR1	VM0016, Version 1.1 Title - Remove "from Products" from title and throughout of VM0016 where appropriate in Version 1.1 - no longer relevant if stockpiles are applicable	Title was updated as well as pg 9 in the introduction to the Baseline Emissions quantification section.	Corrective action and edits to VM0016 accepted.
CAR2	<p>VM0016, Version 1.1, pages 7-8 - Procedure for the selection of the most plausible baseline scenario: Per the VCS standard, methodologies shall be informed by a comparative assessment of the project and its alternatives in order to identify the baseline scenario. In the case of stockpiles of unused chemicals, there may be another alternative of "indefinite storage in hermetic containers" that could last the duration of the crediting period and taking into account the VCS rules on timing of crediting.</p> <p>Accepted that cylinders of unused gas routinely leak and are at risk of accidental venting, and additional baseline alternative not required. However, see CAR O-6."</p>	<p>"Indefinite storage in hermetic containers is neither realistic nor plausible for used CFC refrigerants or unused CFC refrigerants in consumer quantities.</p> <p>The UNEP reported in 2013 that leakage rates of cylinders can be 10 - 12% per year (http://www.multilateralfund.org/70/English/1/7054.pdf). Moreover, leaks from containers of unused ODS are not uncommon. Containers are improperly stored, can rust, can be inadvertently punctured or have seals broken, and are often illegally vented.</p> <p>ICF International reported in 2010 that Customs' storage facilities in particular present risks due to frequent movement of items and lack of design for long-term storage, which contribute to a high overall risk of unintentional venting (Final Report: Study on Financing the Destruction of Unwanted ODS). These risks are even more prevalent</p>	Corrective action response accepted and no further action required.

		<p>for containers that are in commerce and possessed by people untrained in the safe and proper handling of CFC refrigerants.</p> <p>There are also risks with larger storage containers. The World Bank report prepared for the Mexican Efficient Lightning and Appliances Program (2012) indicated that while the leakage rate from ISO tanks is low, ""there is always the possibility that ODS gas might be lost to the atmosphere through accidental discharge, intentional discharge or discharge due to 'force majeure' conditions"" (pg 14).</p> <p>As a result of CAR O-1 and CAR O-6, the baseline alternative R4 was revised to include ""or continued storage in stockpile.""</p>	
CAR3	<p>VM0016, Version 1.1, Baseline Emissions - Equation 2 should include a term for the rate of ODS refrigerants destroyed by the project activity which would have been stored indefinitely in the baseline.</p>	<p>See response above. We assert that indefinite storage is not a realistic baseline scenario.</p>	<p>Corrective action response accepted and no further action required.</p>
CAR4	<p>"VM0016, Version 1.1, Additionality - The language of the additionality section should not be changed as currently proposed, since the Activity Method is developed as an external module. The additionality section may make reference to the availability of the Activity Module</p>	<p>Additional language was added at the start of the additionality section to more precisely guide project proponents on which method to use.</p>	<p>Corrective action and edits to VM0016 accepted.</p>

	<p>after stating the project method for additionality, which is integral to the methodology.</p> <p>The additionality section needs to be divided more precisely into the instructions for those projects that use the activity method, and the instructions for those projects that don't.</p> <p>The first subsection could direct projects "that fulfill the applicability conditions of the Activity method..." to follow the first set of instructions (...apply the activity method), while the second subsection applies to any project that cannot or chooses not to apply the Activity method."</p>		
<p>CAR5</p>	<p>"VM0016, Version 1.1, Applicability - Modify methodology throughout - where ever the inclusion of unused HCFCs as an eligible source impacts the methodology (equations, monitored data, etc.). Alternatively, revise eligibility section to not included unused HCFCs.</p> <p>The applicability of the existing provisions of the methodology should not be limited. However, the applicability of VM0016 to unused ODS (new addition in this revision) should be limited to CFCs (Annex I) and the applicability of the new activity method for additionality should be limited to CFCs (Annex A of Annex I). "</p>	<p>"Propose revising applicability section to exclude HCFCs (Annex C substances).</p> <p>The definition of stockpile in VM0016 was revised to specifically reference Annex A, Group 1 and Annex B, Group 1 from Annex I. A similar reference was added to the applicability section on page 6 that only limits the newly added stockpiled ODS to CFCs.</p> <p>"</p>	<p>Corrective action and edits to VM0016 accepted.</p>

<p>CAR6</p>	<p>"VM0016, Version 1.1, Baseline Emissions - In the current proposal, none of the parameters in Equation 2 applies to the newly eligible source of unused ODS collected from cylinders or similar storage containers. The term RRrefr for "Reuse" does not apply because unused ODS cannot be reused. The venting rate (VRrefr) parameter under the current definition is also not applicable to unused material. The destruction term (DRrefr) is 0% in all cases without government programs.</p> <p>RRrefr needs to be modified to include of unused ODS or Equation 2 and 3 need to be modified to include a new parameter for unused ODS (quantity of ODS, rate of ODS released, emission factor for rate). Accordingly, Section 3, Data and Parameters Not Monitored needs to accomodate unused ODS. "</p>	<p>"The parameter RRrefr was revised to include material that remains in storage in the baseline scenario. Consistent with the Article 5 ODS Project Protocol, we assume that ODS in stockpiles would be used to recharge existing equipment in the baseline. The exception to this would be government stockpiles of ODS that cannot be legally sold into the refrigerant market. In this case, the ODS is assumed to remain in storage in the baseline.</p> <p>The parameter LRrefr was similarly revised to include reference to the ""remain in storage"" option.</p> <p>The parameter boxes in Section 3 were also revised accordingly."</p>	<p>Corrective action and edits to VM0016 accepted.</p>
<p>CAR7</p>	<p>VM0016, Version 1.1, Project Emissions - The language change to MDESTrefr,i,y and MDESTfoam,i,y terms require further changes to the project emissions calculations. The same terms are defined in Data and Parameters Monitored for both baseline and project emissions, thus the definition cannot change for the project emissions case only. Include additional changes for the proposed</p>	<p>The proposed changes have been deleted from VM0016.</p>	<p>Corrective action and edits to VM0016 accepted.</p>

	MDEST, ODS term or delete the proposed changes.		
CL1	<p>"VM0016, Version 1.1, Applicability - If not part of the activity method, exclude unused Montreal Protocol Annex C gases (HCFCs) in or from Article 5 countries from methodology applicability, since these countries may continue to produce new HCFCs until 2040 leading to concerns about perverse incentives (gas produced to be destroyed).</p> <p>The applicability of the existing provisions of the methodology should not be limited. However, the applicability of VM0016 to unused ODS (new addition in this revision) should be limited to CFCs (Annex A of Annex I) and the applicability of the new activity method for additionality should be limited to CFCs (Annex A of Annex I). "</p>	<p>"Propose revising applicability section to exclude HCFCs (Annex C substances).</p> <p>The definition of ODS in VM0016 was further clarified to reference CFC ODS as an ODS listed in Annex A, Group 1 and Annex B, Group 1 from Annex I. A similar reference was added for HCFC ODS as an ODS listed in Annex C, Group 1 of Annex I."</p>	Clarification and edits to VM0016 are accepted.
CL2	<p>VM0016, Version 1.1, Section 3, Data and Parameters Not Monitored. For VRrefr and RRrefr, can you define point of origin documentation requirements? Any relationship to consumer quantities (250 pound threshold)?</p>	<p>There are no additional point of origin requirements beyond those given in the ODS Program Requirements document (Section 2.1.2). The existing requirements are sufficient for quantities of unused ODS (consumer or not) without having to establish additional thresholds or requirements.</p>	Clarification adequate and accepted, and no further action required.
CL3	<p>VM0016, Version 1.1, Section 3, Data and Parameters Not Monitored. For VRrefr Source of Data, please clarify for</p>	<p>"Yes, consistent with CAR Article 5 ODS Protocol, ODS refrigerant recovered from products at end-of-life can assume to be</p>	Clarification and edits to VM0016 are accepted.

	<p>Article 5 countries - if by "vented directly to the atmosphere" you mean "100% vented. If so, modify text.</p>	<p>vented. Equation 4 in VM0016 indicates that the appropriate emission factor for vented material is 100%.</p>	
--	---	---	--