VALIDATION AND VERIFICATION REPORT

American Carbon Registry

ACR 639: Anew – Northeast Kingdom Forestry Project

Reporting Period:
21 April 2021 to 20 April 2022

Prepared for:

Anew Climate, LLC

19 December 2023

Prepared by:
Erynn Maynard-Bean | **Auditor**
Greenhouse Gas Verification Program
erynn.maynard-bean@scsglobalservices.com

2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA
+1.510.452.8000 main | +1.510.452.8001 fax
www.SCSglobalServices.com

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Prepared By	SCS Global Services
Date of Issue	19 December 2023
Contact	2000 Powell Street, Suite 600, Emeryville, CA 94608, USA http://www.scsglobalservices.com Email: CPollet-Young@scsglobalservices.com Telephone: +1 (510) 452-8000
Audit Team	Lead Auditor: Michael Hoe Auditors: Erynn Maynard-Bean, Carolin Judd, Samuel Calarco, Bryan Cummings Internal Reviewer: Alexander Pancoast

Executive Summary

This report describes the validation and initial verification services provided for the Anew – Northeast Kingdom Forestry Project ("the project"), an Improved Forest Management (IFM) project located in northeastern USA, that was conducted by SCS Global Services. The overall goal of the validation engagement was to review impartially and objectively the GHG plan against the requirements laid out in the ACR Standard and relevant methodology. The overall goal of the verification engagement was to review impartially objectively the claimed GHG emission reductions/removal enhancements for the reporting period from 21 April 2021 to 20 April 2022 against relevant ACR standards and the approved methodology. The validation and verification engagements were carried out through a combination of document review, interviews with relevant personnel and on-site inspections. As part of the validation and verification engagements 19 findings were raised: 1 Non-Conformity Reports, 16 New Information Requests and 2 Observations. These findings are described in Appendix A of this report. The project complies with the validation and verification criteria, and SCS holds no restrictions or uncertainties with respect to the compliance of the project with the validation and verification criteria.

Table of Contents

1 Introduction

1.1 About SCS Global Services

SCS Global Services (SCS) is a global leader in third-party certification, auditing, testing services, and standards. Established as an independent third-party certification firm in 1984, our goal is to recognize the highest levels of performance in environmental protection and social responsibility in the private and public sectors, and to stimulate continuous improvement in sustainable development. In 2012, Scientific Certification Systems, Inc. began doing business as SCS Global Services, communicating its global position with offices and representatives in over 20 countries.

SCS' Greenhouse Gas (GHG) Verification Program has been verifying carbon offsets since 2008 and to date has verified over 296 million tonnes of CO2e, providing GHG verification services to a wide array of industries including manufacturing, transportation, municipalities, and non-profit organizations. The GHG Verification Program draws upon SCS's established expertise to serve the global carbon market.

1.2 Objectives

1.2.1 Validation Objectives

The overall goal of third-party validation was to review impartially and objectively the GHG project plan against the requirements laid out in the ACR Standard and relevant methodology. SCS independently evaluated the project design and planning information, based on supporting documentation and GHG validation best practices.

The objectives of validation were to evaluate

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

SCS reviewed any relevant additional documentation provided by the project proponent to confirm the project's eligibility for registration on ACR.

1.2.2 Verification Objectives

The overall goal of third-party verification was to review impartially and objectively the claimed GHG emission reductions/removal enhancements against relevant ACR standards and the approved

methodology. SCS independently evaluated the GHG assertion, based on supporting evidence and GHG verification best practice. The objectives of verification were to evaluate

- Reported GHG baseline, project emissions and emission reductions/removal enhancements, leakage assessment, and impermanence risk assessment and mitigation (if applicable).
- Any significant changes to the project procedures or criteria since the last verification.
- Any significant changes in the GHG project's baseline emissions and emission reductions/removal enhancements since the last verification.

SCS reviewed the GHG project plan, GHG assertion, and any additional relevant documentation provided by the client to determine

- That the reported emissions reductions and/or removal enhancements are real.
- Degree of confidence in and completeness of the GHG assertion.
- That project implementation was consistent with the GHG project plan.
- Eligibility for registration on ACR.
- Sources and magnitude of potential errors, omissions, and misrepresentations, including the
    - Inherent risk of material misstatement.
    - Risk that the existing controls of the GHG project would not have prevented or detected a material misstatement.

1.3 Scope

1.3.1 Scope of Validation

The validation included examination of all of the following elements of the GHG project plan:

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

1.3.2 Scope of Verification

Verification included examination of some or all of the following elements of the GHG project plan:

- Physical infrastructure, activities, technologies, and processes of the GHG project
- GHG SSRs within the project boundary
- Temporal boundary
- Baseline scenarios
- Methods and calculations used to generate estimates of emissions and emission reductions/removal enhancements
- Original underlying data and documentation as relevant and required to evaluate the GHG assertion
- Process information, source identification/counts, and operational details
- Data management systems
- Roles and responsibilities of project participants or client staff
- QA/QC procedures and results
- Processes for and results from uncertainty assessments
- Project-specific conformance to ACR eligibility criteria

SCS examined the reported data, quantification methodologies, calculation spreadsheets or databases, source data, project data management systems, data quality controls in place, measurement and monitoring systems, and records pertaining to emissions quantification. Calculation and error checks, site inspections, interviews with project participants, an iterative risk assessment, sampling plan, and audit checklist were performed to the extent necessary for SCS to develop an understanding of how data are collected, handled, and stored for a specific project.

Finally, as a full verification, the verification services included a field visit to the project site and

- Such carbon stock measurements as SCS required to provide a reasonable level of assurance that the GHG assertion is without material discrepancy (per ACR's materiality threshold of ±5%).
- Updated assessment of the risk of reversal and an updated buffer contribution.

1.4 Validation and Verification Criteria

The validation and verification criteria were comprised of the following:

- ACR Standard, Version 7.0
- Improved Forest Management Methodology, Version 1.3 ("the methodology")
- Errata and Clarifications for ACR IFM Version 1.3
- ACR Tool for Risk Analysis and Buffer Determination, Version 1.1
- ACR Validation & Verification Standard Version 1.1

1.5 Level of Assurance

The level of assurance was reasonable.

1.6 Treatment of Materiality

For validation purposes, a material misstatement was declared if any of the following circumstances were detected:

- The physical or geographic boundary of the GHG project plan was not reasonably accurate.
- In respect of the project baseline,
    - The procedures for determining baseline emissions were not technically sound.
    - Data representative of the operations and activities had not been used, either from a single year or a multi-year average.
    - The baseline scenario chosen was not one for which verifiable data are available.
- In respect of the quantification methodology,
    - The quantification method for each data type was not clearly defined, and/or the degree of supporting documentation provided was inadequate to support a reasonable level of assurance.
    - Methods were not appropriate for accurately quantifying each data type:
        - Activity data had not been correctly applied from the original documentation.
        - The most accurate activity data readily available had not been used.
        - The quantification methodology did not account for all variations in activity data over the relevant crediting period.
        - Any emission factors used did not meet the requirements of the approved methodology and/or are not appropriate to the activity.
        - Any emission factors used had not been correctly applied from the original documentation to the relevant activity data.
        - The most appropriate factors readily available had not been selected.
        - Where there was a choice among equally defensible emission factors, the principle of conservativeness had not informed the choice of emission factors.
    - Methods were not applied consistently to develop estimates of emission reductions and removal enhancements.
    - The ISO principle of conservativeness was not applied, i.e., the choice of assumptions, calculation methods, parameters, data sources, and emission factors was not more likely to lead to an underestimation than overestimation of net GHG emission reductions and removal enhancements.

For verification purposes, it was required that discrepancies between the emission reductions/removal enhancements claimed by the project proponent and estimated by SCS be immaterial, i.e. be less than ACR's materiality threshold of ±5%, as calculated according to the equation in the ACR Standard.

1.7 Summary Description of the Project

The project is aimed at enhancing carbon sequestration and includes multiple forested tracts through northern Vermont and New Hampshire, spanning Essex, Orleans, and Caledonia Counties in Vermont and Coos County in New Hampshire. The project activity represents improved forest management practices compared to typical, more aggressive management in the region and results in greater carbon storage, as well as conservation and recreational value of the forests in the project area.

2 Assessment Process

2.1 Method and Criteria

The validation and verification services were provided through a combination of document review, interviews with relevant personnel and on-site inspections, as discussed in Sections 2.2 through 2.4 of this report. At all times, an assessment was made for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.5 of this report, findings were issued to ensure conformance to all requirements.

The audit team created a sampling plan following a proprietary sampling plan template developed by SCS. The audit team identified areas of "residual risk" – those areas where there existed risk of a material misstatement (see Section 1.6 above) that was not prevented or detected by the controls of the project. Sampling and data testing activities were planned to address areas of residual risk. The audit team then created a validation and verification plan that took the sampling plan into account.

2.2 Document Review

The GHG project plan (dated 19 December 2023; "GHG Plan") and monitoring report (signed 12 December 2023; "MR") were carefully reviewed for conformance to the validation and verification criteria. The following provides a list of documentation – provided by project personnel including and in support of the GHG Plan and MR – that was reviewed by the audit team.

Documentation Reviewed During the Course of Validation and Verification Activities		
Document	**File Name**	**Ref.**
Greenhouse Gas Plan	NortheastKingdom_GHG_Plan_12_19_23.pdf	1
Monitoring Report	NortheastKingdom_MonitoringReport_signed.pdf	2
100-Year Calculation Workbook	NortheastKingdom_100Yr_calcs_05_02_2023.xlsx	3
Regeneration Workbook	NortheastKingdom_Regeneration_Calcs.xlsx	4

ERT Calculation Workbook	NortheastKingdom_RP_ERT_HWP_05_02_2023.xlsx	5
Site Index Calculation Workbook	NortheastKingdom_SiteIndex_Calcs_02_08_2023.xlsx	6
Start CO2 Calculation Workbook	NortheastKingdom_Start_RP_CO2_04_14_2023.xlsx	7
Site Visit CO2 Calc Workbook	NortheastKingdom_SV_RP_CO2_02_09_2023.xlsx	8
FVS Modeling input, keyword files, and output	[151 files in the 'ClientSubmissions\FVS' folder]	9
Inventory Methodology	NortheastKingdom_Voluntary_CarbonPlot_Methodology_12_08_23.pdf	10
Certification	RE_ F&W Forestry - Red Dam project.pdf	11
Annual Report	Red Dam Annual Report – 2021.pdf	12
Easement	Easement – Westmore.pdf	13
Forest Management Plans	[18 files in 'Property Document\Forest Management Plans' folder]	14
Tax Bills	[25 files in 'Property Document\TaxBills' folder]	15
Regional Forestry Docs	BMPs_NewHampshire.pdf	16
Regional Forestry Docs	BMPs_Vermont.pdf	17
Supporting Docs for Baseline Scenario	NHTimberClearingReport.pdf	18
Supporting Docs for Baseline Scenario	Silviculture Guide Northern Hardwoods.pdf	19
Supporting Docs for Baseline Scenario	A Silvicultural Guide for Spruce-Fir in the Northeast.pdf	20
PDA	NortheastKingdom_ACR_PDA_PDD_2_21_23.docx	21
Maps of Selected Plots	[42 files in 'SiteVisitMaps' folder]	22
Spatial Files	[40 files in 'Spatial' folder]	23
Walkthrough Method Supporting Document	Kershaw_Walkthrough_Memo_08_03_22.pdf	24
Stumpage Values Calculations	Calcs_NortheastKingdom_TimberPrices_5_02_23.xlsx	25
Stumpage Value Source	NH_2021_Q2Q3_Report.pdf	26
Stumpage Value Source	VT_2021_Q2_Report.pdf	27
Carbon Development & Marketing Agreement	Blue Source and Red Dam CDMA_Final Terms_04.21.21_fully executed_Redacted.pdf	28
Certification	ATFS_RedDam_Certification.pdf	29
KMZ boundary	NortheastKingdom_ProjectBoundary.kmz	30

2.3 Interviews

2.3.1 Interviews of Project Personnel

The process used in interviewing project personnel was a process wherein the audit team elicited information from project personnel regarding (1) the work products provided to the audit team in support of the GHG Plan and MR; (2) actions undertaken to ensure conformance with various requirements and (3) implementation status of the project activities. The following provides a list of personnel associated with the project proponent who were interviewed.

Interview Log: Individuals Associated with Project Proponent			
Individual	**Affiliation**	**Role**	**Date(s) Interviewed**
Megan Finlay	Anew Climate, LLC	Associate, Natural Climate Solutions	Throughout the audit
Jason Heffner	Anew Climate, LLC	Forest Carbon Analyst	Throughout the site visit
Ian Hash	Anew Climate, LLC	Director, Natural Climate Solutions	Throughout the site visit
M. McKinley	Anew Climate, LLC	Director, Natural Climate Solutions	22 March 2023
Jeff Langmaid	F&W Forestry	Regional Manager	Throughout the site visit

2.3.2 Interviews of Other Individuals

The process used in interviewing individuals other than project personnel was a process wherein the audit team made inquiries to confirm the validity of the information provided to the audit team. The following personnel not associated with the project proponent. The following provides a list of individuals not associated with the project proponent who were interviewed.

Interview Log: Individuals Not Associated with Project Proponent			
Individual	**Affiliation**	**Role**	**Date(s) Interviewed**
Scott Rolfe	NH Department of Natural & Cultural Resources	South Regional Forester	06 September 2022 13 November 2022
Jennifer Little	NH Department of Natural & Cultural Resources	Program Assistant, Forest Protection	13 December 2022
Jared Nunery	VT Agency of Natural Resources, Dept of Forests – Parks and Recreation	Orleans County Forester/Northern Regional Lead	30 November 2022
Matt Langlais	VT Agency of Natural Resources, Dept of	Caledonia and Essex County Forester	30 November 2022 07 June 2023

	Forests – Parks and Recreation		
Dr. Steven Bick	Northeast Forests LLC	Independent Forester	04 October 2022

2.4 Site Inspections

The objectives of the on-site inspections were as follows:

- Confirm the validity of the statements made in the GHG Plan and associated project documentation;
- Confirm the baseline conditions and project conditions.
- Interview project personnel to determine if the GHG Plan correctly identifies project activity and assess project personnel competencies;
- Select samples of data from on-the-ground measurements for verification in order to meet a reasonable level of assurance and to meet the materiality requirements of the Project; and
- Perform a risk-based review of the project area to ensure that the Project is in conformance with the eligibility requirements of the validation/verification criteria.

In support of the above objectives, the audit team performed an on-site inspection of the project area on the dates 27 June 2022 through 29 June 2022. The main activities undertaken by the audit team were as follows:

- Performed an in-depth assessment of the conformance of the Project to the assessment criteria
- Interviewed project personnel (see Section 2.3.1 of this report) to gather information regarding the inventory and monitoring procedures and project implementation
- Carried out on-site inspections of the project's measurement and/or monitoring methodologies through the following activities:
    - Toured the project areas, visually observing and taking coordinates at posted boundary signs, old fence lines, and other boundary references.
    - Selected samples of inventory data using simple random selection methods.
    - At each selected sample location, took on the ground measurements
    - Verified the sample by running a paired sample t-test on the independently calculated Mt CO2e/acre on each plot
- Review of management's commitment to the carbon project.
    - Assessment of project during the reporting period to confirm that the project scenario consists of maintaining above baseline carbon stocks through carbon sequestration.

2.5 Resolution of Findings

Any potential or actual discrepancies identified during the audit process were resolved through the issuance of findings. The types of findings typically issued by SCS during this type of validation and verification engagement are characterized as follows:

- Non-Conformity Report (NCR): An NCR signified a discrepancy with respect to a specific requirement. This type of finding could only be closed upon receipt by SCS of evidence indicating that the identified discrepancy had been corrected. Resolution of all open NCRs was a prerequisite for issuance of a validation and/or verification statement.
- New Information Request (NIR): An NIR signified a need for supplementary information in order to determine whether a material discrepancy existed with respect to a specific requirement. Receipt of an NIR did not necessarily indicate that the project was not in compliance with a specific requirement. However, resolution of all open NIRs was a prerequisite for issuance of a validation and/or verification statement.
- Observation (OBS): An OBS indicates an area where immaterial discrepancies exist between the observations, data testing results or professional judgment of the audit team and the information reported or utilized (or the methods used to acquire such information) within the GHG assertion. A root cause analysis and corrective action plan are not required, but highly recommended. Observations are considered by the audit team to be closed upon issuance, and a response to this type of finding is not necessary.

As part of the audit process, 1 NCRs, 17 NIRs and 2 OBS were issued. All findings issued by the audit team during the audit process have been closed. All findings issued during the audit process, and the impetus for the closure of each such finding, are described in Appendix A of this report.

2.6 Techniques and Processes Used to Test the GHG Information and GHG Assertion

- Review of project documentation including the GHG Plan (Ref. 1), MR (Ref. 2), calculation workbooks (Refs. 3-8, 25), spatial information (Ref. 23), modeling files (Ref. 9), inventory methodologies and documentation (Refs. 8, 10, 24), management plans (Ref. 14), ownership and easement documentation (Refs. 13, 15), certifications (Ref. 11), and to check for project-specific conformance to ACR standard and methodology (Refs. 12, 16-22, 25-28), appropriateness of methodologies and tools applied, and accuracy of GHG information and assertion.
- Assessment of any disturbances or forest management activities that took place in the project area during the reporting period.
- Review of project scenario.
- Review of the sources, sinks, and reservoirs of GHG emissions within the project boundary (Refs. 1-6, 9, 23-29).

- Assessment of eligibility, additionality, GHG emission reduction assertion and underlying monitoring data to determine if either contained material or immaterial misstatements.
- Assessment of the emission reduction calculation inputs and procedures was performed to review the quantitative analyses undertaken by Anew Climate to convert the raw inventory data into emission reduction estimates during the reporting period. This included a re-calculation of project emissions, ERTs, and uncertainty using inventory data as described below in section 3.1 and 3.2 (Refs. 3-7, 9, 25-27).
- Communicate with project personnel and project proponent via interviews, emails, and meetings to gain a better understanding of the project team's methodologies.
- Examine the data management and quality control processes and its controls for sources of potential errors and omissions.
- Review of project documentation including risk assessment and regulatory compliance.

3 Validation Findings

This section follows the requirements for the validation report as set out in Chapter 7 of the ACR Validation and Verification Standard.

3.1 Project Boundary and Activities

3.1.1 Project Boundary and Procedures for Establishment

The GHG Plan contains a description of the physical boundary of the project, which is located on approximately 10,210 acres of forested land dominated by a mix of hardwood and softwood forest types typical of the region. The project area comprises many forested parcels in two states (NH, VT) all owned and managed by Red Dam Conservancy, LLC. This is the physical and geographic site where project activities occur. The audit team confirmed that the boundaries were well documented throughout both the document review and site visit activities. During the site visit the audit team independently checked the accuracy of spatial information on ownership, as used in delineation of the project area, by visiting a sample of corners or other ownership monuments and comparing actual locations to mapped locations. Likewise, during document review the audit team inspected project shapefiles (Ref. 23) to confirm project boundaries are accurately represented as compared to boundaries mapped during the site visit, maps provided in the GHG Plan, and available satellite imagery.

3.1.2 Physical Infrastructure, Activities, Technologies and Processes

The audit team reviewed the GHG Plan and project documentation (Refs. 1, 11-14) which indicate potential infrastructure, activities, and technologies used within the project area. The project activity consists of allowing the forest to progress naturally with limited harvesting. The audit team concluded that project activities, infrastructure and technologies will be minimal within the project area.

Description	Included / Excluded	Gas	Justification
Above-ground live biomass	Included	CO_2	Major carbon pool subjected to the project activity.
Below-ground live biomass	Included	CO_2	Major carbon pool subjected to the project activity.
Standing dead wood	Included	CO_2	Major carbon pool in unmanaged stands subjected to the project activity.
Harvested wood product	Included	CO_2	Major carbon pool subjected to the project activity.
Burning of biomass	Included	CH_4	Non-CO2 gas emitted from biomass burning.

3.1.3 GHGs, Sources, and Sinks within the Project Boundary

The GHG sources, sinks and/or reservoirs that are applicable to the Project were confirmed. The sources, sinks, and reservoirs of GHG emissions within the project boundary are listed in the table below. This applies to both the baseline and project scenarios.

3.1.4 Temporal Boundary

The ACR Standard in Chapter 3 states that "ACR defines the Start Date for all projects other than AFOLU as the date on which the project began to reduce GHG emissions against its baseline." SCS was able to review the GHG Plan, MR, and relevant contractual documents (Ref. 1, 2, 28) for authenticity and concluded that the documents provided indicate the project start date is eligible.

For ACR the minimum project term is 40 years and the eligible crediting period for this type of project is listed as 20 years. SCS confirmed that the GHG Plan included a timeline with a first crediting period of 20 years and a minimum project term of 40 years.

3.2 Description of and Justification for the Baseline Scenario

The methodology defines an IFM baseline scenario as "the legally permissible harvest scenario that would maximize NPV of perpetual wood products harvests." The GHG Plan indicates that the baseline scenario is typical of practices in the project region. The silvicultural prescriptions used to model and maximize NPV include clear cut, shelterwood, and single-tree selection harvests as well as grow-only scenarios.

During the site visit and through interviews with local foresters the audit team verified that relatively aggressive industrial timber harvesting is a common practice in the region. The audit team also conducted a financial feasibility assessment of the baseline scenario using regional stumpage rates to

independently verify NPV. SCS determined that the harvesting rate indicated in the baseline scenario would be feasible.

3.3 Project-Specific Conformance to ACR Eligibility Criteria

The audit team reviewed the demonstration of conformance, as set out in the GHG Plan, to each of the relevant eligibility criteria listed in the ACR Standard. The audit team confirmed the full conformance of the project with the relevant eligibility criteria. A more detailed assessment of the audit team's findings is provided below.

Actions Undertaken to Confirm Conformance to Eligibility Criteria		
Criterion	**ACR Requirement**	**Validation Activities**
Start Date, All Projects	Non-AFOLU Projects must be validated within 2 years of the project Start Date. AFOLU Projects must be validated within 3 years of the project Start Date.	Confirmation that this report was issued less than 3 years after 21 April 2021, the start date of the project according to the GHG Plan.
Start Date Definition, Non-AFOLU Projects	ACR defines the Start Date for all projects other than AFOLU as the date on which the project began to reduce GHG emissions against its baseline.	Not applicable; this project is an AFOLU project.
Start Date Definition, AR or Wetland Projects	For AR or Wetland restoration/revegetation projects, the Start Date is when the Project Proponent began planting or site preparation.	Not applicable; the project is not an AR or wetland project.
Start Date Definition, IFM Projects	For IFM, the Start Date may be denoted by one of the following: 1. The date that the Project Proponent began to apply the land management regime to increase carbon stocks and/or reduce emissions relative to the baseline. 2. The date that the Project Proponent initiated a forest carbon inventory. 3. The date that the Project Proponent entered into a contractual relationship to implement a carbon project. 4. The date the project was submitted to ACR for listing review. Other dates may be approved by ACR on a case by case basis.	SCS was able to review the GHG Plan, MR, and the Carbon Development & Marketing Agreement (Refs. 1, 2, 28) for authenticity and to confirm start date based on option 3, to the left.
Start Date Definition, Avoided Conversion Projects	For Avoided Conversion of non-forest, the Start Date is when the Project Proponent implemented the project action physically and/or legally, such as securing a concession or placing a land conservation agreement on the project land.	Not applicable; the project is not an avoided conversion project.

Start Date Definition, Other Agricultural Land-based Projects	For other Agricultural Land-based projects, the Start Date is the date by which the Project Proponent began the Project Activity on project lands, or the start of the cultivation year during which the Project Activity began.	Not applicable; the project is not an 'other agriculture land-based project'.
Minimum Project Term (AFOLU Projects Only)	Project Proponents of AFOLU projects with a risk of reversal shall commit to a Minimum Project Term of 40 years. The minimum term begins on the Start Date, not the first or last year of crediting. This requirement applies only to AFOLU projects that have had ERTs issued that are associated with GHG removals (sequestration). AFOLU projects that have claimed only avoided emissions are not subject to this requirement.	Review of the GHG Plan to confirm that the minimum term is 40 years, as required.
Crediting Period	The Crediting Period for non-AFOLU projects shall be 10 years. All AR projects shall have a Crediting Period of 40 years. All IFM projects shall have a Crediting Period of 20 years. Avoided Conversion projects on both forest and non-forest land with land conservation agreements in place shall have a Crediting Period of 40 years, unless otherwise specified in chosen methodologies. Wetland Restoration/Revegetation projects shall have a Crediting Period of 40 years. The Crediting Periods for agriculture projects that avoid emissions by changing to lower GHG practices and those that include a soil sequestration component will be specified in the applicable methodology.	Review of the GHG Plan to confirm that the crediting period is 20 years, as required given the project type.
Real	GHG reductions and/or removals shall result from an emission mitigation activity that has been conducted in accordance with an approved ACR Methodology and is verifiable. ACR will not credit a projected stream of offsets on an ex-ante basis.	Review of the emission mitigation activity, as described in the GHG Plan, to confirm that it conforms to the requirements of the methodology and will be verifiable if implemented as described.
Emission or Removal Origin (Direct Emissions)	The Project Proponent shall own, have control over, or document effective control over the GHG sources/sinks from which the emissions reductions or removals originate. If the Project Proponent does not own or control the GHG sources or sinks, it shall document that effective control exists over the GHG sources and/or sinks from which the reductions/ removals originate.	Review of the GHG Plan, and the ownership documentation provided (Refs. 1, 15) to confirm that Project Proponent has control over the GHG sources/sinks from which the emissions reductions or removals originate on the properties.

Emission or Removal Origin (Indirect Emissions)	For projects reducing or removing non-energy indirect emissions, the following requirement applies: The Project Proponent shall document that no other entity may claim GHG emission reductions or removals from the Project Activity (i.e., that no other entity may make an ownership claim to the emission reductions or removals for which credits are sought).	Not applicable; the project is not reducing or removing non-energy indirect emissions.
Offset Title (All Projects)	The Project Proponent shall provide documentation and attestation of undisputed title to all offsets prior to registration. Title to offsets shall be clear, unique, and uncontested.	Review of the GHG Plan, MR attestations, and the ownership documentation provided (Refs. 1-2, 15) to confirm no offsets prior to registration of the Project and that the Project Proponent has ownership of the properties included in the Project.
Land Title (AFOLU Projects Only)	For U.S. projects with GHG emissions reductions resulting from terrestrial sequestration, Project Proponents shall provide documentation of clear, unique, and uncontested land title. For international projects, Project Proponents shall provide documentation and/or attestation of land title; ACR may require a legal review by an expert in local law. Land title may be held by a person or entity other than the Project Proponent, provided the Project Proponent can show clear, unique, and uncontested offsets title. AFOLU projects that result only in the crediting of avoided emissions with no risk of reversal may not require demonstration of land title.	
Additional	Every project shall use either an ACR-approved performance standard and pass a regulatory surplus test, or pass a three-pronged test of additionality in which the project must: 1. Exceed regulatory/legal requirements; 2. Go beyond common practice; and 3. Overcome at least one of three implementation barriers: institutional, financial, or technical.	Confirmation that the project meets all relevant additionality requirements (see Section 3.4 below for more details).
Regulatory Compliance	Projects must maintain material regulatory compliance. To do this, a regulatory body/bodies must deem that a project is not out of compliance at any point during a reporting period. Projects deemed to be out of compliance with regulatory requirements are not eligible to earn ERTs during the period of non-compliance. Regulatory compliance violations related to administrative processes (e.g., missed application or reporting deadlines) or for issues unrelated to integrity of the GHG emissions	After performing extensive regulatory compliance checks for the project during the reporting period (RP1), the audit team found no indication of any violations regarding regulatory compliance. EPA, ECHO, and OSHA were checked, and no violations were observed. There are few regulations that govern forest management in these states. We confirmed with local foresters for VT and NH that there have been no

	reductions shall be treated on a case-by-case basis and may not disqualify a project from ERT issuance. Project Proponents are required to provide a regulatory compliance attestation to a verification body at each verification. This attestation must disclose all violations or other instances of non-compliance with laws, regulations, or other legally binding mandates directly related to Project Activities.	violations pertaining to timber harvesting or other environmental policies on the properties over the last year. We have achieved a reasonable level of assurance on this regulatory check.
Permanence (All AFOLU Projects)	AFOLU Project Proponents shall assess reversal risk using ACR's Tool for Risk Analysis and Buffer Determination, and shall enter into a legally binding Reversal Risk Mitigation Agreement with ACR/Winrock that details the risk mitigation option selected and the requirements for reporting and compensating reversals.	Confirmed a total risk percentage of 18% using the ACR Tool for Risk Analysis and Buffer Determination as required by the ACR methodology.
Permanence (Terrestrial Sequestration, Avoided Conversion Projects)	Proponents of terrestrial sequestration or avoided conversion projects shall mitigate reversal risk by contributing ERTs to the ACR Buffer Pool or using another ACR-approved insurance or risk mitigation mechanism.	Confirmed a total risk percentage of 18% using the ACR Tool for Risk Analysis and Buffer Determination as required by the ACR methodology.
Permanence (Geologic Sequestration Projects)	Proponents of geologic sequestration projects shall mitigate reversal risk during the project term by contributing ERTs to the ACR Reserve Account and post-project term by filing a Risk Mitigation Covenant, which prohibits any intentional reversal unless there is advance compensation to ACR, or by using another ACR-approved insurance or risk mitigation mechanism.	Not applicable; the project is not a geologic sequestration project.
Permanence (All Projects)	All projects must adhere to ongoing monitoring, reversal reporting, and compensation requirements as detailed in relevant methodologies and legally binding agreements (e.g., the ACR Reversal Risk Mitigation Agreement).	Confirmed that section D of the GHG Plan includes a detailed Monitoring Plan relevant to the methodology.
Net of Leakage	ACR requires Project Proponents to address, account for, and mitigate certain types of leakage, according to the relevant sector requirements and methodology conditions. Project Proponents must deduct leakage that reduces the GHG emissions reduction and/or removal benefit of a project in excess of any applicable threshold specified in the methodology.	Confirmed that a 40% leakage deduction was applied which is consistent with market-leakage per the methodology. No activity shifting leakage was also confirmed through the clarification of the GHG Plan section E3: Entity-wide forest certification of sustainable practices on all landholdings.

Independently Validated	ACR requires third-party validation of the GHG Project Plan by an accredited, ACR-approved VVB once during each Crediting Period and prior to issuance of ERTs.	The GHG Plan has been independently validated by SCS, an accredited, ACR-approved validation/verification body.
Independently Verified	Verification must be conducted by an accredited, ACR-approved VVB prior to any issuance of ERTs and at minimum specified intervals.	The GHG Plan has been independently verified by SCS, an accredited, ACR-approved validation/verification body.
Environmental And Community Assessments	ACR requires that all projects develop and disclose an impact assessment to ensure compliance with environmental and community safeguards best practices. Environmental and community impacts should be net positive, and projects must "do no harm" in terms of violating local, national, or international laws or regulations. Project Proponents must identify in the GHG Project Plan community and environmental impacts of their project(s). Projects shall also disclose and describe positive contributions as aligned with applicable sustainable development goals. Projects must describe the safeguard measures in place to avoid, mitigate, or compensate for potential negative impacts, and how such measures will be monitored, managed, and enforced. Project Proponents shall disclose in their Annual Attestations any negative environmental or community impacts or claims thereof and the appropriate mitigation measure.	Confirmed by reviewing the GHG plan, MR, and management plans (Refs. 1-2, 15) which indicate that the project has no anticipated negative community or environmental impacts.

3.4 Demonstration of Additionality

The audit team reviewed the demonstration of additionality, as set out in the PP, and confirmed that the additionality requirements set out in the ACR Standard have been met. A more detailed assessment of the audit team's findings is provided below.

3.4.1 Regulatory Surplus Test

A regulatory review of the Project was conducted by the audit team. There are no laws, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions, or other legally binding mandates requiring the project activities.

3.4.2 Performance Standard Test

Not applicable.

3.4.3 Common Practice Test

The Project demonstrated that the predominant forest industry technologies and practices that exist within the project's geographic region are similar in comparison to forest type, ecological condition, and species or forest product type.

Through interviews with local managers and a detailed review of published data for the region, the audit team verified the timber harvesting practices involving the silvicultural prescriptions claimed in the baseline scenario are common practice in the region. Additionally, the audit team verified the feasibility of the local mill capacity to accept the different wood products created in the baseline scenario.

3.4.4 Implementation Barriers Test

The "financial barrier" option was chosen by the project proponent as an implementation barrier. SCS Global Services received guidance from ACR personnel, in an email dated 6 June 2019, stating the following:

The intent of the financial implementation barrier test encompasses the interpretation and wording in Table 2, in which "carbon funding is reasonably expected to incentivize the implementation of the project scenario", yielding increased carbon stocks compared to the baseline. A quantitative assessment demonstrating forgone profit as a result of employing the project scenario suffices for passing this test.

Given this guidance, a financial barrier was demonstrated through a quantitative assessment demonstrating foregone profit as a result of employing the project scenario (i.e., demonstrating that the net present value of the baseline scenario was higher than the project net present value of the project scenario). The audit team independently conducted a financial feasibility assessment by using local stumpage prices to verify that the baseline scenario could feasibly occur in the project area in the lifetime of the carbon project if the project were not implemented.

3.5 Processes for Emission Reductions/Removal Enhancements Quantification

3.5.1 Methods, Algorithms, and Calculations To Be Used to Generate Estimates of Emissions and Emission Reductions/Removal Enhancements

The audit team validated the methodologies applied to quantify GHG emissions and emission reductions in the baseline and project scenarios. The objective was to determine whether the methods are clearly defined with supporting documentation, appropriate for accurately quantifying each data parameter, applied consistently, and result in a conservative estimate of GHG emissions reductions and removal enhancements.

Section 4.2 provides further detail on the methods, algorithms, and calculations used to generate and validate emissions reductions estimates.

3.5.2 Process Information, Source Identification/Counts, and Operational Details

The forest inventory serves as the primary source of data and information used to quantify emissions reductions. The GHG Plan and inventory methodology (Refs. 1, 10) describe the process including sample size, determination of plot numbers, plot layout, data collected, and measurement techniques. Through site visit, data, and document review (Refs. 3, 5, 7-8, 10, 23-24), the audit team verified the forest inventory methodologies and application.

The inventory data was then run within the Forest Vegetation Simulator with baseline prescriptions to project the baseline condition and a grow-only scenario to estimate the project scenario. The audit team confirmed that the baseline prescriptions were feasible and representative of common practice conditions in the region (see section 3.4.2).

3.5.3 Data Management Systems

SCS verified through review of the GHG Plan and the datasets submitted that the data management systems are in place as described.

3.5.4 QA/QC Procedures

Section D of the GHG Plan identifies field and desk QA/QC procedures. The field QA/QC procedures include senior forester review of field collected data and remeasurement of any plots that cannot be reconciled. Further the GHG Plan states that "At least 10% of the plots are checked by a different forester than cruised the plot, specifically by someone senior to the field crew. This involves full plot measurement to identify any problems with determining in/out trees, species calls, defect measurements, DBH measurements, and height measurements… The purpose of the check cruise is to identify any consistent errors by either a specific cruiser, or the whole crew, and to verify that all plots are being measured with a high level of diligence." These field QA/QC procedures were confirmed on-site and during interviews.

The GHG Plan identifies four stages of desk QA/QC procedures including an implementation forester review, a technical forester review, a technical review, and a senior management review. These include independent checks on the inventory data, model runs, carbon calculations, and document text and formatting.

The QA/QC procedures and the quantification approach employed by the project team conform to the parameters and quantification methods required by the Methodology. SCS determined that the Project Proponent sufficiently documented and quantified each parameter.

3.5.5 Processes for Uncertainty Assessments

The GHG Plan describes how baseline and project uncertainty were calculated. The GHG Plan states that uncertainty in the combined carbon stocks in the baseline is quantified using equation 10 of the

methodology (Refs. 3, 5). The percentage uncertainty in the combined carbon stocks in the project during the reporting period is calculated using equation 18 of the methodology (Refs. 3, 5). The total project uncertainty (percentage) during the reporting period is quantified using equation 19 of the methodology (Refs. 3, 5). SCS confirmed that the approaches for assessing uncertainty that are identified in the GHG Plan are in conformance with the quantification methods required by the Methodology. Further detail on uncertainty quantification is in sections 4.1.

4 Verification Findings

This section follows the requirements for the verification report as set out in Chapter 12 of the ACR Validation and Verification Standard.

4.1 Results of Quantitative Uncertainty Assessment

SCS devoted a portion of the verification assessment to the review of the manner and propriety by which the project proponent quantified uncertainty associated with the individual GHGs in the project, in addition to the uncertainty of the calculation of GHG emission reductions and removals. The audit team also calculated the total materiality of the GHG reduction and removal assertion.

4.1.1 Project Uncertainty

The reported total Project Uncertainty (UNC_t) value of 3.96% value reported by the client for 2022 was independently re-quantified by SCS using equation 19 in the methodology. The audit team found this difference reasonable and immaterial.

Year	UNCt Client Values	UNCt SCS Values	Difference
2022	3.98%	3.98%	0%

Note: final numbers are rounded for simplicity.

4.1.2 Materiality

The total materiality of the GHG reduction and removal assertion was also calculated for the reporting period.

$$\%\ Error = \frac{(Project\ Emission\ Reduction\ Assertion - Verifier\ Emission\ Reduction\ Recalculation)}{Verifier\ Emission\ Reduction\ Recalculation} * 100$$

$$\%\ Error = \frac{(41{,}595 - 41{,}599)}{41{,}599} * 100 = \frac{-4}{41{,}599} * 100 = -.0085\%$$

4.2 Analysis of the Quantification Methodologies and Applicable Data Sets and Sources

The audit team re-quantified baseline and project emissions, emissions reductions, and baseline and project uncertainty from the raw inventory data provided by the client. This process entailed verifying that the methods detailed in the GHG Plan and MR were applied as indicated. The team confirmed the emissions reduction by conducting the following analysis:

- Recalculate the live aboveground, live belowground, and standing dead carbon pools using Jenkins et al. (2003) equations and decay class information using the inventory data provided by the client (Ref. 7)
- Recalculate tree and plot-level live aboveground and standing dead tree defect (Ref. 7)
- Recalculate site index for a random selection of plots (Refs. 6, 23)
- Use the Forest Vegetation Simulator (FVS) to degrow the raw inventory to the project start date (Ref. 7)
- Randomly select a sample of plots and prescriptions from the baseline scenario. Run the selected sample in FVS and follow methodologies specified in the GHG Plan to calculate carbon stocks. Compare to the client's calculations for the selected plots to derive a correction factor to apply the population baseline for the reporting period and ex-ante (Refs. 3, 5, 9).
- Randomly select a sample of plots and the grow prescription from the project scenario. Run the selected sample in FVS and follow methodologies specified in the GHG Plan to calculate carbon stocks. Compare to the client's calculations for the selected plot to derive a correction factor to apply the population project for the reporting period and ex-ante (Refs. 3, 5, 9)
- Calculate the change in the baseline carbon stock stored in live trees and standing dead trees using equations 1 and 2 of the methodology. Calculate the 20-year average value of carbon remaining stored in wood products 100 years after harvest using equation 3 and compare to the client's values (Refs. 3, 5).
- With the outputs from equations 1, 2 and 3, calculate the long-term average baseline stocking level for the crediting period using equation 5 of the methodology. Use equation 6 to calculate the annual change in the baseline carbon stock (Refs. 3, 5).
- Calculate the baseline uncertainty in the combined carbon stocks in the baseline using equation 10 (Refs. 3, 5).
- Calculate the change in project carbon stock stored in live trees using equations 11 and 12 (Refs. 3, 5).
- Calculate the change in the project carbon stock and GHG emissions during the reporting period using equation 14 (Refs. 3, 5).
- Calculate the percentage uncertainty in the combined carbon stocks in the project during the reporting period using equation 18 (Refs. 3, 5).
- Calculate the total project uncertainty (percentage) during the reporting period using equation 19 (Refs. 3, 5).

- Calculate the net greenhouse gas emission reductions (in metric tons CO2e) during the reporting period and during each annual vintage using equation 20 in the methodology and compare to the client's values (Refs. 3, 5).

4.3 Basis of Data and Information Supporting the GHG Assertion

The data and information supporting the GHG assertion were based on industry defaults, future projections, and actual historical records. The future projections are a result of a combination of tree inventory data, site index data, and other data modelled over time. Industry defaults are used in the harvested wood products as well as growth rates for the region. Actual historical records are used to assess stumpage prices, common practice, and boundary assessment.

4.4 Leakage Assessment

A finding was issued regarding the leakage assessment of the project. The audit team confirmed that the client is in compliance with the IFM Methodology regarding activity shifting leakage.

4.5 Risk Assessment

The reported value of the total risk score, as determined based on the risk analysis documented in the GHG Plan and MR, was 18%. The audit team performed a complete review of the risk assessment against the requirements of the ACR Tool for Risk Analysis and Buffer Determination. The audit team concludes that the assignment of risk scores is appropriate and in conformance to the ACR Tool for Risk Analysis and Buffer Determination. A more detailed review of the audit team's conclusions may be found below.

Actions Undertaken to Evaluate Whether the Risk Assessment Has Been Conducted Correctly		
Risk Category	**Value Selected**	**Verification Activities**
A	4%	Confirmation, through site inspections and independent review of documentation, that project is not located on public or tribal lands
B	4%	Confirmation, through site inspections and independent review of documentation, that project is not located on public or tribal lands
C	2%	Confirmation, through site inspections, that the project is not located outside the United States
D	0%	Confirmation, through independent review of documentation, that conservation easement does not cover entire project area
E	2%	Confirmation, through independent review of documentation, that project is located in a low-risk fire region
F	4%	Confirmation, through independent review of documentation, that epidemic disease or infestation is not present within project area, or within 30 mile radius of project area

G	0%	Confirmation, through site inspections, that project is not a wetland project or a forest project where more than 60% of the project area is not a forested wetland
H	2%	Confirmation that default value has been applied in the risk assessment calculation
	18%	TOTAL

5 Conclusion

The audit team asserts, with no qualifications or limitations, that

- The PP conforms, in full, to the validation criteria.
- The quantification of GHG emission reductions and/or removal enhancements, as reported in the MR, conforms to the verification criteria and is without material discrepancy.

The following provides a summary of the Net Removals and Reductions separately for the current Reporting Period:

Annual Emission Reductions and Removals in Metric Tons (tCO_2e) during Reporting Period 3				
Vintage	**Start Date**	**End Date**	**Total Emission Removals (tCO_2e)**	**Total Emission Reductions (tCO_2e)**
2021	21 April 2021	31 December 2021	14,652	21,844
2022	1 January 2022	20 April 2022	6,320	9,423
Total for Reporting Period			20,972	31,267

Note: final numbers are rounded for simplicity.

The following provides a summary of the ERT issuance for the current Reporting Period with the Leakage and the Buffer deduction included (Buffer credits shown separately):

Annual Emission Reduction in Metric Tons (tCO_2e)						
Reporting Period	**Vintage**	**Start Date**	**End Date**	**Total Emission Removals and Reductions (tCO_2e)**	**Buffer Credits (tCO_2e)**	**Net Emission Removals and Reductions (tCO_2e)**
1	2021	21 April 2021	31 December 2021	36,496	6,570	29,926
1	2022	1 January 2022	20 April 2022	15,743	2,834	12,909
Total for Reporting Period				52,239	9,404	42,835

Note: final numbers are rounded for simplicity.

Lead Auditor Approval	 Michael Hoe, 19 December 2023
Internal Reviewer Approval	 Alexander Pancoast, 19 December 2023

Appendix A: List of Findings

Please see Section 2.5 above for a description of the findings issuance process and the categories of findings issued. It should be noted that all language under "Project Personnel Response" is a verbatim transcription of responses provided to the findings by project personnel.

NIR 1 Dated 5 Jul 2022
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: NortheastKingdom_Voluntary_CarbonPlot_Methodology_05_10_22
Finding: Section 9.B of the ACR Validation and Verification Standard states "The VVB should assess the effectiveness of methods for data collection and processing, identify likely areas for data corruption or potential errors, and characterize GHG data collection and management system integration weaknesses." Please provide documentation which asserts that Example 2, as shown on page 31 of the Inventory Methodology, is appropriate and accurate to use when the physical project boundary never intersects the limiting distance of the 1/15th acre fixed radius plot (radius = 30.4 feet).
Project Personnel Response: Supporting documentation has been provided. A forest mensuration professor and co-author of a forest mensuration manual confirms that Example 2, as shown on page 31 of the inventory methodology, is appropriate. Please see Kershaw_Walkthrough_Memo_08_03_22.pdf in the SupportingDocs folder.
Auditor Response: Thank you for the additional information. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NIR 2 Dated 5 Jul 2022
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: NortheastKingdom_Voluntary_CarbonPlot_Methodology_05_10_22
Finding: Section 9.B of the ACR Validation and Verification Standard states "The VVB should assess the effectiveness of methods for data collection and processing, identify likely areas for data corruption or potential errors, and characterize GHG data collection and management system integration weaknesses." Please provide a list of all plots that that were identified as "located less than 60.8' (2x the plot radius) from a project boundary, as depicted on the shapefile" as stated on page 30 of the Inventory Methodology.
Project Personnel Response: The plots that were identified as "located less than 60.8' (2x the plot radius) from a project boundary, as depicted on the shapefile" as stated on page 30 of the Inventory Methodology are Plot ID #s 2, 15, 27, 41, 62, 66, 78, 83, 84, 103, 115, 121, 126, 175. Please see NEK_WkThru_12_15_22.shp in the Spatial folder.
Auditor Response: Thank you for the additional information. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NIR 3 Dated 15 Dec 2022
Standard Reference: ACR IFM Methodology Version 1.3 Errata & Clarifications
Document Reference: Draft_NortheastKingdom_GHG_Plan_08_11_22.docx, RE_ F&W Forestry - Red Dam project.pdf
Finding: Pertaining to monitoring activity-shifting leakage, the IFM Errata & Clarifications states "If the project decreases wood product production by >5% relative to the baseline then the Project Proponent and all associated land owners must demonstrate that there is no leakage within their operations – i.e., on other lands they manage/operate outside the bounds of the ACR carbon project. This demonstration is not applicable if Project Proponent and associated landowners enroll all of their forested landholdings, owned and under management control, within the ACR carbon project." The GHG Plan states, "Quantification of leakage is limited to market leakage, as no activity-shifting leakage is allowed by the methodology beyond de minimis levels." Please demonstrate compliance with monitoring activity-shifting leaking as per the methodology.
Project Personnel Response: The project demonstrates compliance with monitoring activity-shifting leakage by the ownership being enrolled in the American Tree Farm Group Certification with F&W Forestry for all with active timber managemetn programs. The certificate has been provided in the Property Document folder. Section E3 of the GHG plan has been updated to reflect the statement regarding leakage in Section VI.3 of the MR.
Auditor Response: The GHG plan has been updated to indicate '...the project proponent having entity-wide forest certification that requires sustainable practices on all of their landholdings.' However, there is no indication of the acreage covered by the certification in the email provided in the Property Document/Certification folder confirming that 'Red Dam Conservatory is a member in good standing of F&W's Tree Farm Certification group'. While this email serves as a proxy to certification document, the acreage covered and the forested acreage owned by the project proponent is needed to ensure the requirement is being fulfilled (IFM: 'Management certification must cover all entity owned lands with active timber management programs').
Project Personnel Response 2: The internal tracking system outputs of the American Tree Farm System have been added to the verification folder. These files describe the acreage that is under certification which is the entire ownership.
Auditor Response 2: Thank you for the additional information. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NIR 4 Dated 15 Dec 2022
Standard Reference: GHG Plan Template
Document Reference: Draft_NortheastKingdom_GHG_Plan_08_11_22.docx
Finding: In table A3.1 of the GHG Plan, the contents of the next to last row are titled 'Independently Validated and Verified'. Please address the VVB for this project.
Project Personnel Response: VVB has been added to table A3.1 Project Eligibility Requirements.
Auditor Response: The GHG Plan has been updated. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 5 Dated 15 Dec 2022
Standard Reference: GHG Plan Template
Document Reference: Draft_NortheastKingdom_GHG_Plan_08_11_22.docx
Finding: In section H2 of the GHG Plan, the 'Length of First Crediting period' has a date of, 'Through April 20, 2011' which is prior to the project start date. Please provide a correction or justification for this date.
Project Personnel Response: The date has been corrected to April 20, 2022.
Auditor Response: The GHG Plan has been updated. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 6 Dated 15 Dec 2022
Standard Reference: ACR Standard v7.0
Document Reference: Draft_NortheastKingdom_GHG_Plan_08_11_22.docx; Draft_NortheastKingdom_MonitoringReport_08_11_22.docx
Finding: The Standard states, "The ACR Standard v7.0 supersedes the ACR Standard v6.0 (July 2019). Any project listed subsequent to January 1, 2021, must follow all requirements of and be validated against the ACR
Standard v7.0. New projects listed prior to January 1, 2019, may be validated according to a previous version of the ACR Standard, as applicable at the time of listing." Section A3 of the GHG Plan states, "Eligibility for this Improved Forest Management project has been determined with reference to the ACR Standard Version 6.0…" Section II of the MR states that the version applied at validation is "ACR Standard 7.0". Please provide a correction or justification for the different Standard versions.
Project Personnel Response: The ACR standard has been corrected to ACR Standard 7.0 in the GHG plan.
Auditor Response: The GHG Plan has been updated. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

OBS 7 Dated 15 Dec 2022
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: NortheastKingdom_SiteIndex_Calcs_05_26_2022.xlsx, NortheastKingdom_SiteVisit_RP_CO2_06_15_2022.xlsx sheet 'SiteIndex', NortheastKingdom_Start_RP_CO2_06_15_2022.xlsx sheet 'SiteIndex', NortheastKingdom_INVENTORYne.db
Finding: Section 9.B of the ACR Validation and Verification Standard states "The VVB should assess the effectiveness of methods for data collection and processing, identify likely areas for data corruption or potential errors, and characterize GHG data collection and management system integration weaknesses." For plot 22 - as calculated in the SiteIndex_Calcs workbook - the site species is WS and site index is 55.8. However, in the remainder of the project calculation workbooks (SiteVisit_RP, Start_RP) and in the FVS input database (NortheastKingdom_INVENTORYne.db) the site species is listed as BF and site index is 53.5 for plot 22. This is extremely unlikely to result in a material difference, and so issued as an observation.
Project Personnel Response: The new SiteIndex_Calcs workbook has the correct site index value for plot 22. The value is determined from soil database because the core data of plot 22 was incomplete.
Auditor Response: The site index has been updated for plot 22. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 8 Dated 15 Dec 2022
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: NortheastKingdom_Start_RP_CO2_06_15_2022.xlsx, NortheastKingdom_Voluntary_CarbonPlot_Methodology_05_10_22.pdf, NortheastKingdom_INVENTORYne.db
Finding: The inventory methodology states that "No height measurement is needed" for tree saplings 1" to 4.9" DBH. In the calculation workbook 'NortheastKingdom_Start_RP_CO2_06_15_2022.xlsx' according to the 'ReadMe' tab, the sheet, 'TreeData' contains "…the original (cleaned and checked) tree-level inventory collected on the inventory date." However, there are 216 saplings with height measurements, 214 of which have trailing decimals that would seem to indicate that these are not original measurements from the field inventory. The other 2 height measurements are 1, which does not make sense since DBH is collected above 1ft. These height measurements are absent from the input data for the initial FVS run used to degrow trees to the start date (NortheastKingdom_INVENTORYne.db). Please provide information pertaining to the source of the sapling measurements with trailing decimals.
Project Personnel Response: The height of these 216 saplings are extrapolated and automatically generated by FVS while running the model. However, the height of saplings have no affect on the carbon calcuations. The biomass and carbon calcuations in the Jenkin's model do not account for height measurements of trees and/or saplings.
Auditor Response: The new information is sufficient to close this finding.
Bearing on Material Misstatement or Conformance (M/C/NA): M/C

NIR 9 Dated 15 Dec 2022
Standard Reference: ACR IFM Methodology v1.3
Document Reference: NortheastKingdom_100Yr_calcs_06_15_2022.xlsx, Draft_NortheastKingdom_GHG_Plan_08_11_22.docx
Finding: The Methodology section C1. IDENTIFICATION OF BASELINE states that “Required inputs for the project NPV calculation include the results of a recent timber inventory of the project lands, prices for wood products of grades that the project would produce…” On page 40 of the GHG, refering to the baseline scenario: "We then projected the revenues from sawlogs and pulp using the average stumpage price for each species, as provided separately. Stumpage prices were sourced from the Vermont Stumpage Price Report." In the paragraph below that statement: "To estimate net revenue from timber harvest, stumpage by species was used by taking an average from the New Hampshire and Vermont Stumpage Price Report." The values for stumpage price in the NortheastKingdom_100Yr_calcs_06_15_2022 workbook in the ‘Stumpage Prices’ worksheet have a single value for each species. We require more information (including source documents with year/season version) to understand how these values were calculated.
Project Personnel Response: A weighted avereage between stumpage reports from New Hampshire and Vermont were utlized to determine the stumpage values. The stumpage reports utilized incldue the NH Average Stumpage Values Report from April 1 2022 - September 30, 2022 and the Vermont Stumpage Report from the 4th Quarter of 2021. Both reports along with the working excel document used to average the state values have been provided in the verification folder. Please see the TimberPrice folder in the verification folder.
The GHG plan was updated so that it references the New Hampshire and Vermont Stupage Price report in both locations referenced in the finding.

Auditor Response: The GHG Plan has been updated. However, there are some issues with the stumpage values:
(1) In the case of hardwood pulp, the low and high values from the report were averaged in your workbook. In the case of softwood pulp, only the high value was used. This is neither consistent nor conservative.
(2) For the VT pulpwood prices supplied in $/cuft, the conversion in your workbooks to $/ton was not done correctly. Notably, ‘1 ft3 = 31.5 tons’ is an incorrect conversion provided in the workbooks.
(3) The NH stumpage report provided is from after the RP (April – Sept 2022) and does not match the NH values used in your workbook. During review, the audit team noticed that the NH values align with the April – Sept 2021 report provided for CR.
Project Personnel Response 2: This has been updated. The new stumpage file has been provided in the verification fodler.
Auditor Response 2: The new stumpage file has a couple of remaining issues. First, the conversion factors used in the updated version are from an outside source (Penn State extension), as opposed to the conversion factors used in the original version of the stumpage file which are found in and required by the IFM (pages 23 to 24). Second, the conversion factors are applied as if the starting unit from the timber report is in cords, while the starting unit is actually in $/cord (noting that cord is in the denominator). Please provide corrected stumpage values and the relevant, updated downstream calculations.
Project Personnel Response 3: Apologies for the error. This has been updated using IFM conversion factors. The new stumpage file has been provided in the verification folder.

Auditor Response 3: The new, corrected stumpage price calculation file has been provided (Calcs_NortheastKingdom_TimberPrices_05_02_23.xlsx). This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M/C

NIR 10 Dated 15 Dec 2022
Standard Reference: ACR IFM Methodology v1.3
Document Reference: Draft_NortheastKingdom_GHG_Plan_08_11_22.docx
Finding: The Methodology section A4. states that "Published or written evidence that the baseline scenario (e.g., conversion of existing onsite timber) is common practice in the region (this can be a state or local forester, a consulting forester, an owner of a mill, etc.) must also be provided." Additionally, the Methodology section C1. states that "The baseline management scenario shall be based on silvicultural prescriptions recommended by published state or federal agencies to perpetuate existing onsite timber producing species while fully utilizing available growing space." Please provide the required documentation supporting of the baseline scenario.
Project Personnel Response: These common practice silvicultural prescriptions were provided by forest consultants who are familiar with the region, they are also outlined in "Silvicultural Principles for New Hampshire Forest Types","A Silvicultural Guide for Spruce-Fir in the Northeast" and "Silviculture Guide northern Hardwoods" that can be found in the SupportingDocs folder.

A forest consultant also confirmed that throughout the geographic region, private forestland is managed to maximize the net present value of the forest investment. An inventory report of moderate and intensive timber clearings detected via remote sensing in New Hampshire Between 2000 and 2019 can confirm this as clearcutting is the most economic silvicultural prescription for maximizing NPV. This report found that more than 80% of clearcuts occurred on private land, and that the amount of timber clearing has been increasing over time due to land being managed for silviculture, not land conversion. This report can be found in the SupportingDocs folder. The Economic Importance of New Hampshire's Forest-Based Economy can also be found in the SupportingDocs folder that further justifies forest management to maximize NPV.
Auditor Response: Thank you for the additional information. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M/C

NIR 11 Dated 15 Dec 2022
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Draft_NortheastKingdom_GHG_Plan_08_11_22.docx
Finding: Section 9.B of the ACR Validation and Verification Standard states "The VVB should assess the effectiveness of methods for data collection and processing, identify likely areas for data corruption or potential errors, and characterize GHG data collection and management system integration weaknesses." Pertaining to the Baseline scenario, the GHG Plan states: "We assigned the FVS prescription for each plot by forest type. For example, the plots with the highest basal area of hardwood forest type were assigned to only SHW, STS50 and STS70. Likewise, plots with the highest basal area of soft wood forest types were to CC, STS50 and STS70." Please provide information about the cutoff values for determining forest type.
Project Personnel Response: The FVS Groups were determined by the following rules:
Softwood (SW) - softwood basal area is greater than 70% of the plot basal area.
Hardwood (HW) - hardwood basal area is greater than 70% of the plot basal area.
Mixedwood (MW) - when the plot did not meet either of the above definitions.
The GHG plan has been updated to include the above details. The update can be found in Section E1 - Baseline Stratification.
Auditor Response: The GHG plan has been updated to reflect these details pertaining to the calculation of 'FVS Groups'. However, Table E1-7 refers to these 'FVS Groups' as 'Strata' in the description for the STS treatments. According to elsewhere in the GHG Plan and calculation workbooks, there is only one strata identified for this project.
Project Personnel Response 2: The reference to strata has been updated to 'FVS Groups' in table E1-7.
Auditor Response 2: The issue has been addressed and the finding is closed. Thank you.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NIR 12 Dated 15 Dec 2022
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Draft_NortheastKingdom_GHG_Plan_08_11_22.docx, contents of folder [FVS_Output]
Finding: Section 9.B of the ACR Validation and Verification Standard states "The VVB should assess the effectiveness of methods for data collection and processing, identify likely areas for data corruption or potential errors, and characterize GHG data collection and management system integration weaknesses." In reference to the shelterwood harvest treatment in the baseline scenario, the GHG Plan states ‘Overstory Removal occurs 5 years after shelterwood cut.’ However, according to the FVS output, there is a single harvest implemented for the shelterwood treatment with no 5-year follow up harvesting. This treatment scenario does not correspond to a shelterwood harvest. Please provide clarity on this descrepency.
Project Personnel Response: The overstory removal now occurs 10 years after the initial treatment of a shelterwood harvest. The FVS output and GHG plan have been updated accordingly.
Auditor Response: There have been updates to the modeling and project documentation. This finding is closed. However, it appears as though regeneration is not occuring as intended. Please see NIR 15. Inadequate regeneration prevents subsequent rotations from occurring.
Bearing on Material Misstatement or Conformance (M/C/NA): M/C

NCR 13 Dated 15 Dec 2022
Standard Reference: ACR IFM Methodology v1.3
Document Reference: NortheastKingdom_RP_ERT_HWP_08_10_2022.xlsx, NortheastKingdom_Start_RP_CO2_06_15_2022.xlsx
Finding: For both baseline and project uncertainty the Methodology states, "For modeled results use the confidence interval of the input inventory data." It appears that despite being named 'Uncertainty Live Tree CO2, initial inventory', the value in cell D2 of sheet 'ACR_IFM_ERT_Calcs' in the ERT workbook comes from the start date uncertainty for live tree CO2 (NortheastKingdom_Start_RP_CO2_06_15_2022.xlsx, sheet 'Stats_StartDate', cell T7). While immaterial, the use of start date uncertainty is not in conformance with the methodology requirements.
Project Personnel Response: The uncertainty has been updated to that of the collected inventory data. Please see 4 new tabs in the NortheastKingdom_Start_RP_CO2.xlsx workbook (Stats_InvDate; InvDate_Tree_CO2; InvDate_TreeList; and InvDate_NoGrowth). The uncertainty has been updated in the NortheastKingdom_RP_ERT_HWP.xlsx workbook.
Auditor Response: The workbooks have been updated. The finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 14 Dated 15 Dec 2022
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Files in [FVS_Output] folder, Draft_NortheastKingdom_GHG_Plan_08_11_22.docx
Finding: Section 9.B of the ACR Validation and Verification Standard states "The VVB should assess the effectiveness of methods for data collection and processing, identify likely areas for data corruption or potential errors, and characterize GHG data collection and management system integration weaknesses." In reference to the baseline scenario, the GHG Plan states: "Volume yields were output for 100-year projection from FVS-NE, with annual yields interpolated between 10-year cycle outputs." However, according to the content of the project proponent's 'FVS_Output' folder, FVS was run with 5 year cycles ("TIMEINT 0 5" in .key files, "TIMEINT ALL CYCLES; PERIOD LENGTH= 5" in .out files). Please explain the descrepency.
Project Personnel Response: The GHG plan has been updated from "10-year cycle outputs" to "5-year cycle outputs".
Auditor Response: The GHG Plan has been updated. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 15 Dated 28 Mar 2023
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Contents of folder [FVS_Output], NortheastKingdom_Regeneration_Calcs.xlsx
Finding: Section 9.B of the ACR Validation and Verification Standard states "The VVB should assess the effectiveness of methods for data collection and processing, identify likely areas for data corruption or potential errors, and characterize GHG data collection and management system integration weaknesses." The FVS output files show that regeneration is occuring only via stump and root sprouts following a harvest. However, this is not realistic for the region. Additionally, the natural regeneration calculated in the regeneration calcs workbook has errors producing 'NA's instead of values. If the 'Natural' keyword in FVS is being applied as intended, please provide information justifying the regeneration values used in modeling.
Project Personnel Response: We have updated the model to address the regeneration issue.
Auditor Response: Regeneration has been added. It appears that only softwoods have been added to the regen, but hardwoods readily regenerate from stump sprouts in the model so any differences will likely be immaterial. It does not appear that the way the regeneration is coded into the model will result in the conversion of forest type, and indeed the FVS .out files do not appear to reveal forest conversion. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NIR 16 Dated 28 Mar 2023
Standard Reference: ACR IFM Methodology v1.3
Document Reference: Lancaster NH Tax Receipts 2021-22.pdf
Finding: Section B1. Project Eligibility of the IFM states requires 'clear land title'. In the client-provided tax bills (folder Property Document\TaxBills) there is a second owner listed as 'PUREPOINT ENERGY'. Please clarify the ownership of the property.
Project Personnel Response: [Via email exchange with the client on 1/4/2023 (see emails pdf in Notes&Calcs/Emails folder), it was clarified that this is strickly for mailing purposes and Red Dam Conservatory, LLC is the sole owner of the land.]
Auditor Response: The additional information supplied by the client is sufficient. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 17 Dated 1 May 2023
Standard Reference: ACR IFM Methodology v1.3
Document Reference: Contents of folder [FVS_Output], NortheastKingdom_GHG_Plan_04_18_23.docx
Finding: The IFM states that "Consideration shall be given to a reasonable range of feasible baseline assumptions and the selected assumptions should be plausible for the duration of the baseline application." The minimum harvest volume in the GHG Plan is 'total cubic feet per acre >= 600', but it is not specified whether that value applies to sawtimber as well as pulp. There are several, NPV-selected, baseline stands with harvests containing only pulpwood at or near 600cuft. (For example, see NortheastKingdom_CC_2021_2021.out, Stand ID NortheastKingdom_5. However, it is unclear whether these types of low-volume pulp harvest scenarios will be selected with revised stumpage values. See NIR 9 for details.) Please clarify whether the 600 cuft threshold is intended to apply to both sawtimber and pulpwood, and if it is, please provide the source of that threshold for a pulpwood harvest to ensure plausibility.
Project Personnel Response: The 600cuft threshold or trigger is intended to apply for both sawtimber and pulpwood for one FVS cycle i.e. for 5 years period. The BTCUFT keyword is used to implement the trigger in FVS. According to the 'Keyword Reference Guide for the Forest Vegetation Simulator', the BTCUFT keyword indicates before thinning total merchantable cubic foot volume (pulpwood + sawtimber) for eastern variants.

Yes, the threshold of 600cuft of pulp harvest is reasonable for the New England region. According to the certified forester Rick Denial of LandVest, the region has a strong pulp market. Pulp harvested in the project area goes to Canadian and Maine's pulp mills. Also, according to the state of Maine Department of Economic & Community Development's "Forestry & Forest Products: Industry Profile (March 2023)" report, the hardwood and softwood pulp were the largest types of timber harvested.

Auditor Response: Thank you for the additional information. Additional analysis was performed in the workbook ACR_Anew_NEK_RP1_BaselineRecalc_V1-2_060823.xlsx, sheet Harvest_Threshold_Check.This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M/C

NIR 18 Dated 6 Jun 2023
Standard Reference: ACR Validation and Verification Standard v1.1 and ACR IFM Methodology v1.3
Document Reference: NortheastKingdom_GHG_Plan_04_18_23.docx, FVS_Output files (NortheastKingdom_SHW_2021_2021.out, NortheastKingdom_SHW_2021_2021.db table FVS_Compute)
Finding: Section 9.G of the ACR Validation and Verification Standard states:
"- Ensure the appropriateness of the estimation methods applied to the GHG project-specific situation, based on size of the sources, data availability, and associated levels of uncertainties;
- Review calculations and quantification methods used in the GHG Project Plan and/or GHG assertion to determine if results reported reflect emission estimation approach and supporting data;
- Examine quantification method documentation at the facility/source level, reviewing key facility-specific results, calculations, emission factors, and assumptions to determine validity of the quantification method;
- Review methods, underlying data/assumptions, reference citations, and data management systems, from project roll-up to individual source root data, with field audits and use of external data and third-party records to confirm reported GHG emissions and reductions results;
- Review spreadsheets and aggregated data used to create estimates of GHG emission reductions and removal enhancements.
- Review raw or source data and emission factors to evaluate whether the data used are appropriate for the associated activities and sufficient to provide a reasonable estimate of the emissions from the source category."

The audit team found an apparent discrepancy between the language in the clients GHG plan describing the silvicultural prescriptions and the FVS outputs. This discrepancy was found while reviewing the 2021 shelterwood outfile (NortheastKingdom_SHW_2021_2021.out), looking at plot 36. It appears that the harvest triggers of 80 BA/ac and 600 cuft/ac are being missed. The audit team reviewed the file NorthweastKingdom_SHW_2021_2021.db, the FVS_Compute table. It shows for plot 36 that the basal area trigger is met in 2036 and the merchantable cubic foot trigger is being met in 2051. For this particular plot, though both triggers are met by 2051 the harvest doesn't occur until 2071. Please provide more information as to why it appeasrs that the triggers are being overlooked in the model.

Project Personnel Response: Finding was closed via email correspondence from the client on June 7, 2023.

[Hi Sam,

The minimum rotation for SHW Rx is 50 years. It is also mentioned in Table E1-7 of the GHGplan document.
I agree that the BA, Merch Cubic foot and min 5" DBH triggers are met for year 2061. But the minimum rotation trigger of 50 years will not occur until the year 2071.
Please let me know if that helps. Otherwise, we can setup a call today afternoon or tomorrow morning.

Thanks,
Anil]
Auditor Response: This finding was closed via email correspondence with the client on June 7, 2023.
Bearing on Material Misstatement or Conformance (M/C/NA): M/C

OBS 19 Dated 6 Jun 2023
Standard Reference: ACR IFM Methodology v1.3
Document Reference: NortheastKingdom_Voluntary_CarbonPlot_Methodology_05_10_22.pdf, NortheastKingdom_Start_RP_CO2_04_14_2023.xlsx
Finding: The ACR definition for a tree is as follows:

"A perennial woody plant with a diamter at breast height (4.5') greater than or equal to 1" and a height of greater than 4.5', with the capacity to attain a minimum diameter at breast height of 5" and a minimum height of 15' (shrub species are not eligible).",

Under the "Tree Measurements" section of the NortheastKingdom_Voluntary_CarbonPlot_Methodology_05_10_22.pdf, regarding "Trees 1" to 4.9", the methodology states:

"... - No height measurement is needed."

In the workbook NortheastKingdom_Start_RP_CO2_04_14_2023.xlsx, sheet TreeData, trees 240 and 597 are subplot trees (<5" DBH) however they have heights associated with them. Tree 240 is 1.10" DBH with a total height of 1'. This tree is also recorded as a broken top with a phantom height of 10'. Tree 597 is 4.00" DBH with a total height of 1'. This tree is also recorded as a broken top with a phantom height of 25'. A tree cannot have a DBH measurement if the total height is less than 4.5'. These trees also contradict the clients methodological procedures for recording data on trees 1" to 4.9" DBH.

This was issued as an obersvation because it has no material impact on the carbon calculations.
Project Personnel Response: This observation is acknowledged. No updates have been completed in response.
Auditor Response: This finding was issued closed.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 20 Dated 6 Jul 2023
Standard Reference: ACR Validation and Verification Standard v1.1 and ACR IFM Methodology v1.3
Document Reference: NortheastKingdom_GHG_Plan_05_18_23.docx, Draft_NortheastKingdom_MonitoringReport_05_18_23
Finding: The VV Standard states that "The GHG information and records the VVB shall review include, but are not limited to: GHG Plan..." In review of the Northeast Kingdom GHG Plan, we note:
- v6.0 of the ACR Standard is referenced throughout Table A3.1 (plus footnote) and page 4
- 10-year cycle lengths are noted in the Growth and Yeild section on page 39
- Similarly, the MR reference 10-yr growth cycle in Section VI:2
- "ARBOC calculations" is found in the Technical Review section
- The formula for basal area is stated as "05454 * DBH2" in Monitoring Plan Parameters section, Species Composition section (page 32)
- the header throughout the document states "Bluesource" instead of "Anew"

Please clarify whether these items are correct or require revision.
Project Personnel Response: The Standard Version has been updated to 7.0 on page 4, Table A3.1 and in the footnote on page 4.
The 10 year growth cycle reference is correct for FVS-NE.
The reference to ARBOC has been removed.
The formula for Basal Area has been corrected to 0.005454*DBH2
The header has been corrected to say "Anew" to reflect the updated project title.
Auditor Response: The noted items were edited. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): NA