VALIDATION AND VERIFICATION REPORT

American Carbon Registry

ACR 683: Anew – McCoy Forestry Project

Reporting Period:
20 July 2021 to 19 July 2022

Prepared for:

Anew Climate, LLC

07/16/2024

AMERICAN CARBON REGISTRY

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Executive Summary

This report describes the validation and initial verification services provided for the Anew – McCoy Forestry Project ("the project"), an Improved Forest Management project located in the Appalachian foothills of southern Ohio, that was conducted by SCS Global Services. The overall goal of the validation engagement was to review impartially and objectively the GHG project 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 claimed by J. McCoy Lumber Co, the project proponent, for the reporting period from 20 July 2021 to 19 July 2022 against relevant ACR standards and the approved methodology. Validation and verification services commenced on 5 August 2022 with a verification call. 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 13 findings were raised: 1 Non-Conformity Report, 9 New Information Requests and 3 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.

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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 nearly 300 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 spread-sheets 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 for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands, Version 1.3 ("the methodology")

- Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands, version 1.3 Errata and Clarifications (January 1, 2024)
- ACR Validation and Verification Standard, Version 1.1
- ACR Tool for Risk Analysis and Buffer Determination, Version 1.0

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 located in Adams, Scioto, Pike, Highland, and Brown counties in the Appalachian foothills of southern Ohio, USA. The project proponent, J. McCoy Lumber Co., is implementing this project for the purpose of providing climate and environmental benefits through a management regime focused on natural, long-term forest growth, sustainable timber management, and preservation of forest health.

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 an Evidence Gathering Plan (EGP) following a proprietary EGP template developed by SCS which includes a strategic analysis and risk assessment. In accordance with the evidence gathering plan, the audit team identified the risk of a material misstatement or nonconformity with the criteria and considered the results of the materiality assessment (see Section 1.6 above). Sampling and data testing activities were planned to address areas of inherent, control, and detection risk. The audit team then created a verification plan that took the evidence gathering plan into account.

2.2 Document Review

The GHG project plan (dated 28 May 2024; "PP") and monitoring report (dated 07 June 2024, signed 03 July 2024; "MR") were carefully reviewed for conformance to the validation and verification criteria. The following provides a list of additional documentation, provided by project personnel in support of the aforementioned documents, that was reviewed by the audit team.

Documentation Reviewed During the Course of Validation and Verification Activities

Document	File Name	Ref.
GHG Project Plan (PP)	McCoy_GHGPlan_5_28_24.pdf	1
Monitoring Report	McCoy_RP1_MonitoringReport_06_07_24_Signed.pdf	2
CO2 Calcs	McCoy_Start_RP_CO2_05_20_2024.xlsx	3
ERT Workbook	McCoy_RP_ERT_HWP_06_07_2024.xlsx	4
100 year Calc Workbook	McCoy_100Yr_calcs_05_20_2024.xlsx	5
Regeneration Calculations	McCoy_Regeneration_Calcs_10_03_2023.xlsx	6
Site Index Calculations	McCoy_SiteIndex_Calcs_07_26_2022.xlsx	7
Project Boundary Shapefile	McCoy_Boundary_05_17_2024.shp	8
Plots Shapefile	McCoy_Plots_07_06_22.shp	9
SMZ Shapefile	McCoy_SMZ_05_17_2024.shp	10
Strata Shapefile	McCoy_Strata_05_17_24.shp	11
Inventory Methodology	McCoy_CarbonPlot_Methodology_08_10_23.pdf	12
Harvest information	Sunshine Ridge Timber Harvest Report Summary PDF.pdf	13
Harvest Shapefile	McCoy_RP1_Harvest_02_16_23.shp	14
Various FVS years for the following database files, out files, and key files	McCoy_GROW McCoy_START McCoy_IndTreeGrowne McCoy_CCWS_2021 McCoy_SHW50_2021 McCoy_STS75BA10_2021 McCoy_VT20BA_2021	15
Parcel and Ownership Information	Contents of folder [ClientSubmissions/PropertyDocs/Deeds] Contents of folder [ClientSubmissions/PropertyDocs/Easement]	16
Forestry Certificates	J McCoy letter.pdf McCoy_Deviation_Request_07_18_22 Approved.pdf	17
Contract Carbon Development and Marketing Agreement	CDMA - J McCoy Lumber - Bl So - 2021-7-20_fullyExecuted_Redacted.pdf	18
Stumpage Prices	Ohio Timber Price Report.pdf	19
Addendum: Programmatic Development Approach (PDA)	McCoy_PDA_PDD_08_10_23.pdf	20
Streams Shapefile	McCoy_Rivers_poly_051524.shp	21

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 PD 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**
Merrick McKinley and Mingfei Xiong	Anew – Project Developer	Project leads	Throughout site visit activities
Jack McCoy	Landowner – J. McCoy Lumber Co. LTD	Project Proponent	Throughout site visit activities
Merrick McKinley and Modeling Team	Anew – Project Developer	Project lead and modeling team	Throughout the audit

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**
George Comstock	Consulting Forester	Owner of George Comstock and Associates Consulting Foresters, LLC	7/26/2023, 11/07/2023
Alyxandra Flott	Ohio Department of Natural Resources	Service Forester	8/15/2023

2.4 Site Inspections

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

- Ensure that data collection for sequential sampling purposes was carried out to the highest possible quality standards and that our client was comfortable with the work being performed
- Perform field reconnaissance to independently confirm
    - *That the project area has more than 10% canopy cover
    - Absence of any unreported disturbance or timber harvest

- Ground-truth stratification of project area
- *Independently check 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

In support of the above objectives, the audit team performed an on-site inspection of the project area on the dates 30 August 2022 through 1 September 2022. The main activities undertaken by the audit team were as follows:

- Interviewed project personnel (see Section 2.3.1 of this report) to gather information regarding the 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 area, visually observing and taking averaged GPS coordinates at survey markers and other boundary reference locations.
    - 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, 9 NIRs and 3 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 PP (Ref. 1), MR (Ref. 2), spatial information (Refs. 8-11), and calculation workbooks (Refs. 3-7) to check for project-specific conformance to ACR standard and methodology, appropriateness of methodologies and tools applied, accuracy of GHG information and assertion.
- Assessment of any disturbances or forest management activities, including a discussion with project personnel on any harvest activities.
- Review of sources, sinks and reservoirs of GHG emissions within the project boundary.
- 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 to convert the raw inventory data into emission reduction estimates during the reporting period (Refs. 3-7). This included a re-calculation of project emissions, ERTs, and uncertainty using inventory data as described below in Sections 2.1 and 2.2.
- 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 (Section III.4 of the monitoring report).

3 Validation Findings

3.1 Project Boundary and Activities

3.1.1 Project Boundary and Procedures for Establishment

A description of the physical boundary of the project was provided, which is located on approximately 8,272 acres of hardwood forestland in in Adams, Scioto, Pike, Highland, and Brown counties in southern Ohio. The project land is privately owned and managed by J. McCoy Lumber Company, the project proponent. The audit team reviewed project proponent attestations and an ACR-approved deviation plan (Ref. 17) to attain forestry certification from the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI) outside of the timeline stated in the applicable methodology. 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 (Refs. 8-11) to confirm project boundaries are accurately represented as compared to boundaries mapped during the site visit, maps provided in the PP, and available satellite imagery.

3.1.2 Physical Infrastructure, Activities, Technologies and Processes

The audit team reviewed the PP and project documentation (Refs. 1-2) which indicate potential infrastructure, activities, and technologies used within the project area. The project activity consists of natural forest management focusing on sustainable forest growth and regular, uneven-aged harvests as well as promotion of recreation, wildlife habitat and forest health. The audit team concluded that project activities, infrastructure and technologies will be an improvement in the carbon storage and sustainable forest practices of the area.

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 is the case for both the baseline and project scenarios.

Description	Included/Excluded	Gas	Justification
Above-ground biomass carbon	Included	CO_2	Major carbon pool subjected to the project activity.

Below-ground biomass carbon	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-CO_2 gas emitted from biomass burning. Note that no slash burning is anticipated in the project.

3.1.4 Temporal Boundary

The ACR Standard indicates that the project must have a validated/verified Start Date of 01 January 2000 or after. Also, in accordance with Chapter 3 of the ACR Standard, the start date is defined as the date that the Project Proponent entered a contractual relationship to implement a carbon project. The start date for this project is 20 July 2021. SCS was able to review the PP, MR, and relevant contractual documents (Ref. 18) for authenticity and to confirm that each document consummated "a contractual relationship to implement a carbon project." SCS concluded that the documents provided indicate the project start date is eligible.

In ACR the minimum project term is 40 years and the eligible crediting period for this type of project is also listed as 40 years. SCS confirmed that the PP 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 the baseline scenario as an estimation of the GHG emissions or removals that would have occurred if the Project Proponent did not implement the project. The PP states, "The baseline scenario represents a harvest regime, targeted to maximize net present value at a 6% discount rate (for private industrial forestland as outlined by the protocol) typical of practices in the project region." The baseline scenario applies clearcut, shelterwood, single tree selection, and variable retention harvests across the forest, which was non-spatially stratified into a single stratum.

3.3 Project-Specific Conformance to ACR Eligibility Criteria

The audit team reviewed the demonstration of conformance, as set out in the PP, 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 20 July 2021, the start date of the project according to the PP.
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.	The start date is 20, July 2021, the date by which the contractual signing agreement between the Project Proponent (J McCoy Lumber Co.) and the Offset Developer (Anew Climate, LLC) was completed.
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	For other Agricultural Land-based projects, the Start Date is the date by which the Project Proponent began the Project Activity on project	Not applicable; the project is not an other agriculture land-based project.

Land-based Projects	lands, or the start of the cultivation year during which the Project Activity began.	
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 PP 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 PP 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 PP, 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.	Reviewed the supporting documentation, as described in the PP, and a sample of the ownership documentation provided (Ref. 16) to confirm that Project Proponent have control over the GHG sources/sinks from which the emissions reductions or removals originate on their respective properties. Evidence of land title for each parcel in the project area was provided and confirmed (Ref.16).

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.	Confirmed by reviewing attestation that no offsets exist or were sold prior to registration of the project (Refs. 2, 16). Reviewed land title documents (Ref. 16) along with an independent review of ownership using individual county Register of Deeds offices and county treasurer maps which included property data, county assessor data, and up to date maps. Additionally, on site, various property survey markers were confirmed the accuracy of the associated boundary claimed.
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	After performing extensive regulatory compliance checks during this reporting period, the audit team found no violations on file with EPA, ECHO, or OSHA. In addition, a local forester was interviewed about any regulatory compliance issues on the project area, forestry practices, and a discussion of the regional forestry trends and activity. The audit team also reviewed the regulatory

	unrelated to integrity of the GHG emissions 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.	compliance section of the MR submitted (Ref. 2).
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 PP 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. The PP indicates that "Market leakage was determined by quantifying the merchantable carbon removed in both the baseline and with-project cases. Carbon in long-term storage in in-use wood products and landfills, calculated above, was used to assess relative amounts of "total wood products

		produced" in the two scenarios. The decrease in wood production relative to the baseline was then calculated and the applicable market leakage discount factor was determined."
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 PP 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 PP 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 PP and MR (Refs. 1-2) 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. This review was performed by checking the EPA Enforcement Annual Results map for fiscal year 2021 and 2022, searching the OSHA Establishment

Search for names and organizations relevant to the project, and interviews with consulting and state foresters.

3.4.2 Performance Standard Test

Not applicable.

3.4.3 Common Practice Test

The Project showed that similarities exist with the project and nearby private industrial forestland in the region. During the site visit through interviews with local managers and review of published data for the region, the audit team verified that aggressive timber harvesting practices involving the silvicultural prescriptions claimed in the baseline scenario are common practice in the region.

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's findings regarding this assessment are provided below.

The PP indicated that "Carbon funding is reasonably expected to incentivize the project's implementation. The implementation of the carbon project represents an opportunity cost to lost revenue associated with the potential timber harvesting that could legally and feasibly occur on the property in the lifetime of the carbon project. A financial feasibility assessment is provided separately for verification demonstrating the financial barrier carbon funding overcomes in project implementation."

The audit team independently conducted a financial feasibility assessment by using local stumpage prices (Ref. 19) to verify that the baseline scenario could feasibly occur in the project area in the lifetime of the carbon project if the project was 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 3.2 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 PP and inventory methodology (Ref. 12) describe the process including sample size, determination of plot numbers, plot layout, data collected, and measurement techniques. Through site visit and document review (Ref. 12), 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 2.4.3).

3.5.3 Data Management Systems

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

3.5.4 QA/QC Procedures

Section D of the PP 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 PP states that “At least 5% of the plots will be checked by a different forester than cruised the plot, preferably by someone senior to the field crew. This will involve full plot measurement to identify any problems with determining in/out trees, species calls, defect measurements, DBH measurements, and height measurements. Any errors noted during the check cruise will be used to update the master spread sheet file. Any consistent height, species, DBH, or defect errors will be resolved by talking with the foresters and removing crew members if need be.” These field QA/QC procedures were confirmed on-site and during interviews.

The PP identifies three stages of desk QA/QC procedures including an independent 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. Section D of the PP also provides in detail a monitoring and data management plan for each parameter throughout the reporting period.

3.5.5 Processes for Uncertainty Assessments

The PP describes how baseline and project uncertainty were calculated. The PP 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 (Ref. 3-5). SCS confirmed that the approaches for assessing uncertainty that are identified in the PP are in conformance with the quantification methods required by the Methodology.

4 Verification Findings

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 4.09% was independently re-quantified by SCS using equation 19 in the methodology. No issues were identified while comparing UNCt values. (see table below).

	SCS Values	Client Values	Difference
Reporting Period	**UNCt**	**UNCt**	
2022	4.09%	4.09%	0%

Materiality

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

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

$$\%\ Error = \frac{(44{,}052 - 44{,}004)}{44{,}004} * 100 = \frac{48}{44{,}0004} * 100 = \ .1082\%$$

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

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

- Calculate the end of reporting period diameter of individual trees.
- Recalculate the live aboveground, live belowground, and standing dead carbon pools using Jenkins equations and decay class information.
- Calculate the change in project carbon stock stored in above and below ground live trees using equation 11 in the methodology
- Calculate the change in project carbon stock stored in above ground dead trees using equation 12 in the methodology
- Calculate any greenhouse gas emission resulting from the implementation of the project in the reporting period using equation 13 in the methodology
- Calculate the change in the project carbon stock and GHG emissions during the reporting period using equation 14 in the methodology.
- Calculate the percentage uncertainty in the combined carbon stocks in the project during the reporting period using equation 18 in the methodology
- Calculate the total project uncertainty (percentage) during the reporting period using equation 19 in the methodology.
- 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.
- Multiple FVS models were ran to assess their silvicultural prescriptions in both the baseline and project scenarios. This included, among other things, a review of site index calculations, harvest parameters, NPV values, interpolation methods, defect calculations, and any assumptions used.
- The resulting differences from the FVS model runs were then aggregated into a correction factor for both live and dead stocks in both the project and baseline scenario.

4.3 Basis of Data and Information Supporting the GHG Assertion

The following table indicates whether the data and information supporting the GHG assertion were based on assumptions and industry defaults, future projections, and/or actual historical records.

Assumptions and Industry Defaults	☒
Future Projections	☒
Actual Historical Records	☒

4.4 Leakage Assessment

The audit team found that all acres enrolled in this project are not under the appropriate certification (FSC, SFI, or ATFS). The project proponent has received two deadline extensions from ACR regarding SFI certification as it pertains to the ACR Project Eligibility requirements. Given that the initial deadline extension extended beyond the dates for RP1, this additional extension shouldn't affect the RP1 review, but should be examined by auditors in subsequent RP verifications.

The audit team confirmed that the market leakage value of 0.4 is appropriate when considering the decrease in wood production relative to the baseline.

4.5 Risk Assessment

The reported value of the total risk score, as determined based on the risk analysis documented in the PP 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, that project is not located on public or tribal lands
B	4%	Confirmation, through site inspections, 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%	The project has not entered a conservation easement
E	2%	Confirmation, through interviews with local personnel and/or foresters and review of fire maps, that the project has a low fire risk

F	4%	Confirmation, through research of local forest health publications and interviews with local personnel and/or foresters, that the project is not affected by diseases and pests
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

5 Conclusion

Anew Carbon Development, LLC, the project developer, is responsible for the preparation and fair presentation of the GHG statement in accordance with the criteria. 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.

Based upon the information made available to SCS and the analyses completed during the verification, SCS was able to reach a positive opinion, with a reasonable level of assurance, that the emission reductions represented by the Project Proponent during the monitoring period of 20 July 2021 to 19 July 2022 are free from material misstatement and in conformance with the assessment criteria.

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

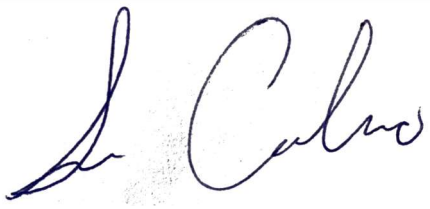
Annual Emission Reductions and Removals in Metric Tons (tCO_2e) during Reporting Period 1				
Vintage	**Start Date**	**End Date**	**Total Emission Removals (tCO_2e)**	**Total Emission Reductions (tCO_2e)**
2021	20 July 2021	31 December 2021	7,520	16,766
2022	1 January 2022	19 July 2022	9,115	20,322
Total for Reporting Period			16,635	37,088

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):

Note: final numbers are rounded for simplicity.

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	20 July 2021	31 December 2021	24,286	4,372	19,914
1	2022	1 January 2022	19 July 2022	29,437	5,299	24,138
			Total for Reporting Period	53,723	9,671	44,052

Lead Auditor Approval	 Sam Calarco, 16 July 2024
Internal Reviewer Approval	 Alexa Dugan, 16 July 2024

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.

OBS 1 Dated 1 May 2023
Standard Reference: ACR Standard v7.0
Document Reference: McCoy_GHG_Plan_02_03_23.pdf
McCoy_100Yr_calcs_01_31_2023.xlsx
Ohio Timber Price Report - January 22
Finding: GHG Plan Section E1 states ,"To estimate net revenue from timber harvest, stumpage by species was used by taking an average from the Ohio Timber Price Report - January 2022 report. It is assumed that all variable management costs are included in the stumpage estimate."

Additionally, the GHG Plan states, "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 Ohio Timber Price Report - January 2022. Diameter thresholds for sawlogs and pulpwood use the default merchantable diameters in FVS-NE variant."

The audit team sourced the Ohio Timber Price Report - January 22 (OTPR) and used that report to ascertain stumpage values by species in order to make a comparison to client values presented in sheet Stumpage_Prices within workbook McCoy_100Yr_calcs_01_31_2023.xlsx. The prices in the OTPR were presented as either sawlog price ($/thousand board feet) by grade, or as a stumpage price ($/ thousand board feet). The prices presented within the 100yr_calcs workbook were presented as the Sawtimber value ($/thousand board feet). The values in the 100yr calcs from the OTRP were determined to be derived from the mean value stumpage for the Southeast region of Fall 2021.

This column header could be more accurate with respect to the values contained therein.
Project Personnel Response: The project boundary of this project lies within the Southeast timber price reporting region of Ohio (Source: https://woodlandstewards.osu.edu/ohio-timber-price-report). The Stumpage_Prices tab of the 100 yr calcs sheet shows the stumpage price for the Southeast region of Ohio. Instead of naming the column header as "Stumpage($Mbf)", all our calc files for every project have the column header as "Sawtimber ($/Mbf)". The name of tab indicates that these are stumpage values. The main reason for this naming convention is to maintain consistency throughout the calc files and documents across all of our projects. Having said that, we have updated the GHGplan to reflect that the timber price came from Southeast region of Ohio.
Auditor Response: Thank you for this clarification. The client updated the GHG plan to reflect that the timber price came from the Southeast region of Ohio. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 2 Dated 1 May 2023
Standard Reference: ACR IFM Methodology v1.3
Document Reference: McCoy_100Yr_calcs_01_31_2023.xlsx
Ohio Timber Price Report - January 22
Finding: Section C1 of the methodology states, "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, costs of logging, reforestation and related costs, silvicultural treatment costs, and carrying costs."

Section E1 of the GHG Plan stated that the client "projected the revenues from sawlogs and pulp using the average stumpage price for each species, as provided separately. Stumpage prices were sourced from the Ohio Timber Price Report -January 2022."

Two discrepancies were noted during the process of checking stumpage values present in the 100Yr_calcs workbook against the OTPR:
1. The client stumpage value for Silver Maple is reflective of the mean stumpage value of "Other" species for the Southeast region. Silvicultural knowledge suggests that Silver Maple are often considered a Soft Maple, which has a listed value in the OTPR. The client value utilized here is conservative.
2.The client stumpage value for Ash is stated as $350.00, where the OTPR reports a value of $300.

Understanding that these two species represent a small proportion of the total project basal area, and that regional timber markets have often unique ways of dealing with species-specific stumpage, please provide an explanation as to why the above values were selected.
Project Personnel Response: The stumpage value for Silver Maple has been updated to be identical to that of Soft Maple and have changed the stumpage value of Ash from $350 to $300.
Auditor Response: Thank you for updating these values in the 100 Yr calcs workbook. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 3 Dated 1 May 2023
Standard Reference: ACR Standard v7.0
Document Reference: McCoy_GHG_Plan_02_03_23.pdf
McCoy_100Yr_calcs_01_31_2023.xlsx
Finding: Section 4.A.3 of the standard states, "If electing the financial implementation barrier test, Project Proponents shall include solid quantitative evidence such as net present value and internal rate of return calculations."

Section C3. of the GHG Plan indicates that the financial implementation barrier test was selected.

It was noted in the quantification of baseline scenario financials in the 100Yr_calcs workbook that there is no associated revenue with the harvest of pulpwood products. This is occuring despite statement in the GHG Plan that the region has strong markets for pulpwood and the presence of pulpwood harvest volumes in the baseline scenario . The lack of monetary quantification for pulpwood harvest revenue stems from Stumpage_Prices and can be realized in HarvestRevenue and Baseline_Revenue in the 100Yr_calcs workbook. Please provide an explanation for the above or update with appropriate values if necessary.
Project Personnel Response: Pulp stumpage prices for pine and hardwood species have now been added after consulting with a regional forester and the landowners on local harvest sales. The pine pulpwood stumpage is $8/ton and the hardwood pulp stumpage is $4/ton.
Auditor Response: Thank you for the additional information. This was verified by the audit team by contacting local foresters and arriving at a similar pulp stumpage value. This finding is now closed.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 4 Dated 1 May 2023
Standard Reference: ACR IFM Methodology v1.3
Document Reference: McCoy_GHG_Plan_02_03_23.pdf
Finding: Section C3 of the methodology states, "Change in baseline carbon stock is computed for each time period. The Project Proponent shall provide a graph of the projected baseline stocking levels and the long-term average baseline stocking level for the entire crediting period (see Figure 1). The year that the projected stocking levels reach the long-term average (time t = T) is determined by either Equation 5 or 6, depending on initial stocking levels. Prior to time T, the projected stocking levels are used for the baseline stock change calculation, as determined by Equation 7. In the year that the projected stocking levels reach the long-term average (time t = T), the baseline stock change calculation is determined by Equation 8. Thereafter, the long-term average stocking level is used in the baseline stock change calculation, as determined by Equation 9, and only with-project removals are credited for the remaining years in the crediting period."

It was noted in the GHG Plan Figure E1-1 that rather than providing a graph of the projected baseline stocking levels and the long-term average baseline stocking level over a 20 year period similar to the IFM prodivded figure, the PP has provided a graph showing the 100-year baseline CO2e pools. Text accompanying the figure suggests it is to depict "the projected baseline stocks, average baseline stock for the first crediting period, and projected with-project stocks." This text, while aligning with the requirements of the methodology, does not appear to align with what the graph is displaying. Additionally, it does not appear that project scenario values are presented in the graph, as suggested by the accompanying text.

Please explain how this graph satisfies the requirement of the methodology.
Project Personnel Response: Figure E1-1 has been updated to display the 20-year average baseline carbon stocks per acre. The text accompanying the graph now aligns with the figure to say "The figure below depicts the projected baseline stocks over 100 years and the average baseline stock for the first crediting period."
Auditor Response: Thank you for updating Figure E1-1. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 5 Dated 1 May 2023
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Contents of folder [FVS_Output]
McCoy_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 post-harvest regeneration values are markedly different than model inputs. This was noted across multiple prescription types. Additionally, imputed regeneration species (pitch pine and eastern red cedar) are do not seem realistic for the project forest type. If the 'Natural' keyword in FVS is being applied as intended, please provide information justifying the regeneration values used in modeling.

Please provide information justifying the regeneration species in the McCoy_Regeneration Calcs worksheet, as well as information as to the difference between input and output values used in modeling of regeneration trees.
Project Personnel Response: The input for regeneration was not reading correctly in FVS. The issue has been resolved in the new FVS run. The regeneration input and post-harvest regeneration values are now matching.

We believe that the imputed regeneration species (pitch pine and eastern red cedar) are realistic for the region and the regeneration values for those species are based on the inventory data. Please check the new McCoy_Regeneration_Calcs.xlsx file, which has two new tabs explaining how we got the regen values for these two species.
Auditor Response: Thank you for the additional information. Given the sprouting nature of the NE variant, and the significant amount of hardwoods present in the inventory, having pitch pine and eastern redcedar as the only imputed regen is acceptable. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 6 Dated 1 May 2023
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Contents of folder [FVS_Output]
McCoy_GHG_Plan_02_03_23.pdf
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."

Table E1-7 of ther GHG Plan states that Natural sprouting and regeneration are to be used as model inputs. However, FVS output files from the GROW scenario do not contain references to these keyword inputs. Please provide justification for the lack of these model inputs.
Project Personnel Response: The GROW scenario does not include harvesting, therefore it does not contain references to the Natural or Sprouting keyword inputs. We have removed the statement about the Natural and Sprouting keywords from the GROW Rx in Table E1-7 of the GHGplan document.
Auditor Response: Thank you for clarifying and updating the table in the GHG plan. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 7 Dated 1 May 2023
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Contents of folder [FVS_Output]
McCoy_GHG_Plan_02_03_23.pdf
McCoy_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."

In this harvest scenario it was noted that while regen values contained in the Regen_Calcs workbook align with the FVS OUT files, the post harvest regeneration values for species RC and PP in the Regeneration Establishment Model are lower than expected given the model inputs. Please provide an explanation for this discrepancy.
Project Personnel Response: Please refer to the answer to our response to finding #5. The regeneration input values are now working as intended.
Auditor Response: Thank you for the explanation. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 8 Dated 1 May 2023
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Contents of folder [FVS_Output]
McCoy_GHG_Plan_02_03_23.pdf
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 reviewing the Summary Statistics of several stands under the SHW50 scenario it was seen that certain stands had achieved necessary basal area/volume constraints as outlined in the GHG Plan, however in some cases shelterwood harvest would be delayed up to 30 years. Please provide as explanation as to the harvest timing under this scenario.
Project Personnel Response: The harvests are working as intended. FVS triggers depend on inputs such as min rotation and min/max DBH. For example, when min/max DBH include a subset of trees on a plot, only the trees between the min/max DBH are used to calculate when a harvest should be triggered. Please check the FVS_Compute table in the FVS output database (.db) files for SHW50 prescription in addition to summary statistics of the .out files. The summary table in the .out file does not truely represent the FVS compute summary as it represents BA of all trees in the plot. The FVS Compute table more clearly shows Basal Area for different diameter ranges (e.g., BA5DBH shows Basal Area for all trees 5+ inches DBH).
Auditor Response: After reviewing the newly supplied outfiles for the SHW50 scenario, it became apparent that the model is not working as intended. McCoy_SHW50_2021.out, stand McCoy_21 is a good example of the model not working as intended when compared to the language in the GHG plan. There is no shelterwood harvest being implemented. Please provide more information about this apparent discrepancy between the FVS outputs and language in the GHG plan.
Project Personnel Response 2: Thank you an 'AND' argument in the logic for implementation of the prescription was inadvertantly entered as a '1'. This mistake has been fixed and the implementation of the shelterwood harvest is now working as intended and follows the language of the GHG plan.
Auditor Response 2: It appears that there is still an issue with the SHW50 scenario. Several instances where only 1 harvest occurs rather than the 2 harvests that constitute a shelterwood prescription. Examples of these instances are plots 1 and 39 in the FVS outfile McCoy_SHW50_2026.out. Please provide more information about the reason behind deviating from language in the GHG plan regarding shelterwoods.

Project Personnel Response 3: Part I: Due to the re-evaluation period for the initial if statement, that was based off the rotation length, which sets the 'Thin1' variable in the key file, occasionally in the further out years the 'Thin1' and 'Thin2' variables were being reset before the second entry could occur. An additional parameter has been added to that if statement to ensure it only occurs in the first cycle. The shelterwood prescription should now be working as expected. Because this only affected the out years of the prescription, this issue had a very minimal impact to crediting, less than 0.004% difference.

Part II: Client response via email thread "McCoy Findings 9/12/23" on 10/4/2023:

“Thank you for bringing this to our attention, after discussion with a consulting forester in the region, we have determined that it is unlikely for a pulpwood only harvest to occur as you have indicated. We have further adjusted the shelterwood prescription by adding a merchantable board foot trigger and it now thins across diameter classes, which ensures saw timber volume is harvested in the initial entry.”

Auditor Response 3: Part I: See NIR 12. Please demonstrate that it is common practice to soley harvest pulpwood under a shelterwood management regime.

Part II: This finding has been addressed and closed outside the cover of this workbook. Refer to email chain "McCoy Findings 9/12/23" for additional information.

Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 9 Dated 1 May 2023
Standard Reference: ACR Validation and Verification Standard, Section 9.B
Document Reference: Contents of folder [FVS_Output]
McCoy_GHG_Plan_02_03_23.pdf
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."

It was noted in reviewing the Summary Statistics under this harvest scenario that in some cases harvest removals do not reduce the residual basal area to the value outlined in the GHG Plan. These residual basal area values are often higher than that stated in the GHG Plan. Please provide an explanation as to why this is occurring. This was noted in the VT20BA, and STS75BA10 scenarios.
Project Personnel Response: Thanks for bringing this up. At first glance the Summary Statistics table appears to not reflect the intended basal area residual (20BA in case of VT20BA Rx). For explanation, McCoy_VT20BA_2026 Rx can be used as an example. Summary statistics for plot 1 (Stand McCoy_1) in the McCoy_VT20BA_2026.out file show that for years 2026, 2076 and 2126, the residual BA for all trees (0+" DBH) after treatment are 21, 38 and 44 - all above a BA of 20. However, the Basal Area in this table includes all trees, not only trees above 5" DBH. As a reminder, the VT20BA Rx has a min diameter trigger of 5" DBH. In order to see the basal area for only trees 5"+ DBH, please check the FVS_Compute table of McCoy_VT20BA_2026.db file and search for plot 1. After that scroll to the right to find columns BA0DBH and BA5DBH (column # 19 and 30, respectively). The BA values for year 2026 in columns BA0DBH and BA5DBH are 121.66 and 120.42, respectively. The VT20BA Rx will only harvest trees in BA5DBH (Basal area for trees 5+" DBH) down to residual 20 BA. That means, the remaining (residual) BA after 2026 treatment will be 20 + (121.66 - 120.42) = 20 + 1.24 = 21.24 or rounded down as 21. We can check this for remaining years 2076 (20 + 18 = 38) and 2126 (20 + 24 = 44). Thus, the prescription works as intended - trees less than 5" DBH are not used toward the Basal Area trigger.
Auditor Response: Thank you for this clarification. This finding is now closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NCR 10 Dated 15 Aug 2023
Standard Reference: ACR IFM Methodology v1.3
Document Reference: McCoy_Regeneration_Calcs.xlsx
Nunery & Keeton 2010
Contents of folder (FVS_Outputs)
Finding: According to the file "McCoy_Regeneration_Calcs.xlsx", it appears that the Nunery and Keeton 2010 approach was used to calculate appropriate post-harvest regeneration values used in the FVS modeling.

The Nunery and Keeton paper states:

"Because NE-FVS includes only a vegetative regeneration sub-model (i.e., limited stump sprouting only), user-defined parameters (including species, spatial distribution, total number per acre, and seedling size) must be defined in order to simulate regeneration."

Table 4 in Nunery and Keeton shows that their "regeneration inputs used in model simulations" include both hardwood and softwood species (sprouting and non-sprouting).

Section E1 of the IFM Methodology v1.3 states:

"Project Proponents shall identify key parameters that would significantly influence the accuracy of estimates. Local values that are specific to the project circumstances must be obtained for these key parameters, whenever possible. These values must be based on:
- Data from well-referenced peer-reviewed literature or other well established published sources;…"

Including natural regeneration calculations into the baseline modeling shows that the client is identifying regeneration as a key parameter. It is apparent after reviewing the FVS keyword files provided that only non-sprouting regen is assumed to regenerate naturally (outside of stump and root sprouting). Only including non-sprouting species into the FVS keyword files for natural regeneration deviates from the "well-referenced peer-reviewed literature" (Nunery and Keeton) that was used to calculate these natural regeneration values. This represents a non-conformity with the IFM Methodology. Please update the regeneration assumptions used in the FVS keyword files to be in conformance with Section E1 of the IFM Methodology v1.3.
Project Personnel Response: Further details on the approach to regeneration in the Nunery and Keeton, 2010 paper can be found in the Nunery, 2009 master's thesis (now found in the supportingDocs folder) starting on page 24. In his thesis Nunery provides further details on how the regeneration calculations he uses were developed and notes how stump sprouts were not included in their simulation, substituteing sprouting regeneration with calculated natural regeneration. Given the uncertainity in the calculations for natural regeneration we have opted to exclude non-sprout regeneration from our natural regeneration calculations, in favor of using the built in stump sprout feature of FVS. This is ultimately a more conservative approach, as implementing both stump sprouts and natural regeneration for stump sprouting species would potentially lead to overstocking of regeneration for those species, which would have an outsized impact on the mortality model in FVS.

Auditor Response: The clients approach continues to deviate from the Nunery and Keeton 2010 approach. It also deviates from the FVS documentation which states "In the partial establishment model the user must schedule natural regeneration." and "In the partial establishment model all trees resulting from the PLANT and NATURAL keyword records are passed as best trees, and trees resulting from root or stump sprouts do not compete in the best tree selection process." This may be why we are seeing unexpected conversion from pure hardwood stands to pure softwood stands over the 100 year modeling period. The FVS documentation advises users to use calculated regeneration values in their keyword files, and addressess the shortcomings of the partial establishment model.

The audit team requests the client to demonstrate that their approach of deviating from the cited literature is in fact conservative in terms of final ERTs. Additionally, please provide additional "well referenced peer reviewed literature or other well established published sources" that back up the approach being taken and shows that the outcome of this approach is realistic in this region.

Project Personnel Response 2: Our preferred method for regeneration in FVS is to utilize the existing peer-reviewed partial establishment model built into FVS. Since this only includes stump sprouts for sprouting species, additional calculations for non-sprout species are needed, so we supplement this method for non-sprout species only utilizing the Nunery and Keeton (2010) methods. The only 'deviations' from the exact methods used in Nunery and Keeton (2010), are that we do not apply these calculations to species that FVS already provides regeneration establishment for in the partial establishment model (sprouting species). The reason this method is preferred is that following the Nunery and Keeton methods for sprouting species would be calculated using average regeneration rates across the entire project for each plot, rather than at a more detailed plot level approach as the partial establishment model provides for.

If applying the Nunery and Keeton (2010) approach exactly, stump sprouting would also need to be turned off as indicated in Nunery's 2009 master's thesis. This would make the regeneration establishment for individual plots less customized to the existing species mix of each plot since FVS stump sprouting is based off the harvested trees found in the plot. Additionally, by applying the Nunery and Keeton approach to all species, all plots will converge to a homogenous species mix since regeneration for all plots will be the same following harvest. This in turn will cause plots to be more likely to transition between softwood/hardwood dominance. If stand transitions between softwood/hardwood dominance are being seen at a high rate, using our methods there are alternative parameter adjustments that can be made in the regeneration calculations, such as limiting the diameter range of saplings used to calculate regeneration rates or adjusting the regeneration survival rates. As was noted while discussing this issue with SCS, there were a number of stand transitions occurring. Regeneration calculations were since adjusted to use the 3-5 inch DBH range from the inventory instead of using the 1-5 inch range that was used previously. Following this adjustment while stand transitions sometimes still occur they are now less extreme with stands mostly retaining their hardwood or softwood dominance.

In further support of our methods compared to the exact Nunery & Keeton (2010) methods and to demonstrate the difference in parameterization, we have provided the RegenComparison.xlsx workbook in the shared verification folder. In this workbook the different approaches to regeneration establishment are summarized to show the percent difference in stand softwood TPA and BA between the initial species mix in 2021 and the final mix in 2121 for the various prescriptions. We also show in this workbook boxplots showing species composition changes between the start and end of the FVS projections. The issue with using the exact methods found in Nunery and Keeton (2010) are illustrated here and derive from the fact that McCoy is a hardwood dominated project. Because of this we see that the few existing softwood dominated plots will drastically transition to hardwood dominance as the species mix for all plots converge to the same mix of regeneration used in the Nunery and Keeton methods.

Furthermore, the issue of 'best trees' was brought up, and quotes from the Essential FVS user guide documentation were referenced, while best trees is a concept utilized within FVS, the implications for this are only seen in the full establishment model. Email correspondence with FVS staff confirming this is now provided in the shared verification folder.

Lastly, while conservatism of the approach was also brought up, it is subjective to determine conservatism based on crediting outcomes, and those outcomes would be marginal with a crediting difference of 1-3%. The best approach is that which has the most accurate outcome in species regeneration mix and limits the transition between differing forest types.

Auditor Response 2: Thank you for this explaination. This finding is now closed.

Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 11 Dated 12 Sep 2023
Standard Reference: ACR IFM Methodology v1.3
Document Reference: McCoy_GHGPlan_08_17_23.pdf, Contents of the ClientSubmissions
Finding: Section C1. of the ACR IFM Methodology states "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."

The client has not provided documentation that supports the baseline scenario using published state or federal agency documents.

Please provide the required documentation supporting the baseline scenario.
Project Personnel Response: The baseline follows silvicultural prescriptions outlined in "Ecology and Management of Central Hardwood Forests" by Ray R. Hicks 1998. Chapter 5 of this textbook has been photocopied and placed in to the supporting docs folder.
Auditor Response: Thank you for providing this literature, this finding is now closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

OBS 12 Dated 10 Dec 2023
Standard Reference: ACR IFM Methodology v1.3
Document Reference: Contents of clients FVS folder,
McCoy_100Yr_calcs_10_03_2023.xlsx,
McCoy_RP_ERT_HWP_10_03_2023.xlsx

Finding: The IFM Section 3.2 Step 1 states "Determine the amount of wood harvested (actual or baseline) that will be delivered to mills, by volume (cubic feet) or by green weight (lbs.),..." In reviewing the client's inventory list, many species are included that the audit team believe are not merchantable (e.g. pawpaw, eastern redbud, flowering dogwood). When cross-referencing the USDA PLANTS database, these species are described as not suitable for lumber or pulpwood products. Given these species are a small component of the inventory tree list, and an even smaller component of the HWP, the effect this has on ERTs will be non-material. Therefore, this issue is being issued as an observation.
Project Personnel Response:
Auditor Response:
Bearing on Material Misstatement or Conformance (M/C/NA): C