

VERIFICATION REPORT

American Carbon Registry

ACR 374: Bluesource – Shafer-Tuuk Improved Forest Management Project

Reporting Period:

RP4: 30 March 2020 - 29 March 2021

RP5: 30 March 2021 - 29 March 2022

Prepared for:

Anew Climate, LLC

15 February 2023



AMERICAN CARBON REGISTRY

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Executive Summary

This report describes the verification services provided for the Bluesource – Shafer-Tuuk Improved Forest Management Project (“the project”), located in the Cumberland Plateau of eastern Tennessee, that was conducted by SCS Global Services. The project proponent is Shafer-Tuuk Tree Farm, LLC. The overall goal of the verification engagement was to review impartially and objectively the claimed GHG emission reductions/removal enhancements, claimed by the project proponent, the Shafer-Tuuk Tree Farm LLC, for the reporting periods from 30 March 2020 to 29 March 2022 against relevant ACR standards and the approved methodology. The verification engagement was carried out through a combination of document review, interviews with relevant personnel and on-site inspections. As part of the verification engagement 3 findings were raised: 2 Observations, 1 New Information Request, and 0 Non-Conformity Reports. These findings are described in Appendix A of this report. The project complies with the verification criteria, and SCS holds no restrictions or uncertainties with respect to the compliance of the project with the 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 over 290 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

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

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, 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.

1.4 Verification Criteria

The verification criteria were comprised of the following:

- American Carbon Registry Standard, Version 7.0
- ACR Validation and Verification Standard v1.1
- Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands, Version 1.2 (“the methodology”)

1.5 Level of Assurance

The level of assurance was reasonable.

1.6 Treatment of Materiality

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 $\pm 5\%$, as calculated according to the equation in the ACR Standard.

1.7 Summary Description of the Project

The project consists of 3,093 acres of forestland located in eastern Tennessee and is aimed at maintaining forest carbon stocks and the long-term conservation and sustainable management of the forest which will promote healthy wildlife habitat. To achieve this, the Shafer-Tuuk Tree Farm, LLC has put in place a conservation easement with The Nature Conservancy and plans to continue timber harvests on the property that are below net annual growth.

2 Assessment Process

2.1 Method and Criteria

The verification services were provided through a combination of document review, interviews with relevant personnel, 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 verification plan that took the sampling plan into account.

2.2 Document Review

The monitoring reports (dated 03 August 2022; "MR") were carefully reviewed for conformance to the 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 Verification Activities		
Document	File Name	Ref.
RP4 Monitoring Report	DRAFT_Tuuk_RP4_MonitoringReport_11_17_22.pdf	1
RP5 Monitoring Report	DRAFT_Tuuk_RP5_MonitoringReport_11_17_22.pdf	2
GHG Plan	ShaferTuuk_GHG_Plan_11_27_18.pdf	3
Project boundary	Tuuk_Boundary_11_11_19.shp	4

Harvest shapefile	Rusted_Lantern_RP4_04_28_21.shp	5
Harvest records	Volume Removed During RP4.pdf	6
Calculations workbook	Tuuk_RP4_CO2_06_25_21.xlsx	7
Calculations workbook	Tuuk_RP4_ERT_HWP_11_17_22.xlsx	8
Calculations workbook	Tuuk_RP5_CO2_04_06_22.xlsx	9
Calculations workbook	Tuuk_RP5_ERT_HWP_11_17_22.xlsx	10
GHG Plan Addendum	ShaferTuuk_GHG Plan_Addendum_11_17_22.pdf	11

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 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
Katie Krejsa	Throughout audit	Forest Carbon Analyst	Throughout 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
Shannon Gann	TN Department of Agriculture	County Forester	09/06/2022

2.4 Site Inspections

No on-site inspections were conducted as part of the verification services.

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 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 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 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, 0 NCR, 1 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

The audit team applied various techniques and processes to test the GHG information and the GHG assertion over the course of the audit, listed below:

- Review of project documentation including the GHG Plan (Ref. 3), MR (Ref. 1-2), spatial information (Refs. 4-5), and calculation workbooks (Refs. 7-10) 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 review of timber harvests and harvest removal records, that took place in the project area during the reporting period (Refs. 5-6).
- A review project scenarios.
- Review of the 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. 7-10). This included a re-calculation of project emissions, ERTs, and uncertainty using inventory data as described below in section 3.1 and 3.2.
- 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 (Ref. 1-2).

3 Verification Findings

3.1 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.

3.1.1 Project Uncertainty

The reported total Project Uncertainty (UNC_t) value of 7.23% value reported by the client for 2019 was independently re-quantified by SCS using equation 19 in the methodology. The audit team found this difference reasonable and immaterial.

		SCS Values	Client Values	Difference
Year	RP	UNC _t	UNC _t	
2021	4	6.540%	6.514%	0.025%
2022	5	8.427%	8.196%	0.232%

Note: final numbers are rounded for simplicity.

3.1.2 Materiality

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

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

$$\text{RP4 \% Error} = \frac{(30,094 - 30,118)}{30,094} * 100 = \frac{-24}{30,094} * 100 = -0.08\%$$

$$\text{RP5 \% Error} = \frac{(7,001 - 7,002)}{7,002} * 100 = \frac{-1}{7,002} * 100 = -0.014\%$$

3.2 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 from the raw inventory by adding annual diameter and height growth increments.
- 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.

3.3 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	<input type="checkbox"/>
Future Projections	<input checked="" type="checkbox"/>
Actual Historical Records	<input checked="" type="checkbox"/>

3.4 Leakage Assessment

Section E3 of the GHG Plan states: “All forestlands owned by Shafer-Tuuk Tree Farm, LLC have been certified by the Forest Stewardship Council (FSC). To prevent activity-shifting leakage, Shafer-Tuuk Tree Farm, LLC will not conduct harvests on other lands under its ownership that would offset the harvest reductions attributable to the project. Therefore, leakage is limited to market leakage. We conservatively assume market leakage of 40%.” The audit team has also confirmed that the Shafer-Tuuk Tree Farm, LLC holds FSC certification.

SCS confirmed that the applicable market leakage factor of 0.4 was applied.

3.5 Risk Assessment

The reported value of the total risk score, as determined based on the risk analysis documented in the PP and MR, was 16%. 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 independent review of documentation, that project is not located on public or tribal lands
B	4%	Confirmation, through independent review of documentation, that project is not located on public or tribal lands
C	2%	Confirmation, through independent review of documentation, that the project is not located outside the United States

D	-2%	Confirmation, through independent review of documentation, that the project area is covered under a conservation easement
E	2%	Confirmation, through independent review of documentation, that project is located in low fire risk region.
F	4%	Confirmation, through independent review of documentation, that epidemic disease or infestation is not present within the project areas, or within a 30 mile radius of the project area.
G	0%	Confirmation, through independent review of documentation, 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.

4 Conclusion

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

On the basis of the information made available 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 reporting periods from 30 March 2020 to 29 March 2022 are free from material misstatement and in conformance with the assessment criteria.



The following provides a summary of the ERT issuance for the current Reporting Period with the Leakage deduction included and the Buffer deductions excluded (Gross ERTs):

Annual Emission Reductions and Removals in Metric Tons (tCO ₂ e)					
Reporting Period	Vintage	Start Date	End Date	Gross GHG Emission Removals (tCO ₂ e)	Gross GHG Emission Reductions (tCO ₂ e)
4	2020	30 March 2020	31 December 2020	6,377	20,811
4	2021	1 January 2021	29 March 2021	2,026	6,612
5	2021	30 March 2021	31 December 2021	6,348	0
5	2022	1 January 2022	29 March 2022	1,986	0
RP4 TOTAL				8,403	27,423
RP5 TOTAL				8,334	0

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 ₂ e)					
Reporting Period	Vintage	Start Date	End Date	Net GHG Emission Reductions/Removals (tCO ₂ e)	Quantity of Buffer Credits (tCO ₂ e)
4	2020	30 March 2020	31 December 2020	22,838	4,350
4	2021	1 January 2021	29 March 2021	7,256	1,382
5	2021	30 March 2021	31 December 2021	5,332	1,015
5	2022	1 January 2022	29 March 2022	1,669	318
RP4 TOTAL				30,094	5,732
RP5 TOTAL				7,001	1,333

Note: final numbers are rounded for simplicity.

Lead Auditor Approval	 Alexander Pancoast, 15 February 2023
Internal Reviewer Approval	 Michael Hoe, 15 February 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.

OBS 1 Dated 26 Aug 2022

Standard Reference: - ACR Standard v7.0 Chapter 6.E

- ACR IFM Methodology v1.2 Section C3

Document Reference: - DRAFT_Tuuk_RP4_MonitoringReport_8_3_22.docx,

- DRAFT_Tuuk_RP5_MonitoringReport_8_3_22.docx,

- Tuuk_RP4_ERT_HWP_07_15_22.xlsx,

- Tuuk_RP5_ERT_HWP_07_15_22.xlsx

Finding: The reported average 20-year baseline has changed from 240,147 in RP3 to 219,673 in RP4 Monitoring Report. This is due to shift in the 20-year window range (i.e., Year 1= 2016 vs Year 1=2017), not a difference in the actual baseline values. This change reflects guidance given to the Client by ACR regarding the correct implementation of Equation 5 in section C3 of the ACR IFM Methodology v1.2.

Project Personnel Response: Confirmed - the equation was updated to reflect guidance.

Auditor Response: Accepted

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

OBS 2 Dated 26 Aug 2022

Standard Reference: ACR Standard 7.0 Chapter A.7.2

Document Reference: - DRAFT_Tuuk_RP4_MonitoringReport_8_3_22.docx

- DRAFT_Tuuk_RP5_MonitoringReport_8_3_22.docx

Finding: Please sign the Monitoring Report / Annual Attestation Statement in accordance with chapter A.7.3 in the ACR Standard v7.0

Project Personnel Response: The monitoring report will be signed when all findings are closed.

Auditor Response: Accepted

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

NIR 3 Dated 26 Aug 2022**Standard Reference:** ACR Standard 7.0 Chapter 2.A**Document Reference:** - Volume Removed During RP4.pdf

- Tuuk_RP4_ERT_HWP_07_15_22.xlsx

Finding: The “Volume Removed During RP4.pdf” document reports that 62.9 total acres have been harvested in the Rusted Lantern sale. The “HWP Market Sale” tab in

“Tuuk_RP4_ERT_HWP_07_15_22.xlsx” also indicates that 62.9 acres were harvested and that 5.9 acres were harvested in RP3, resulting in 57.0 acres being harvested in RP4. The shapefile provided “Rusted_Lantern_RP4_04_28_21.shp” indicates the RP4 harvest area is 56.7 acres. Chapter 2.A in the ACR Standard v7.0 identifies “consistency” as a core GHG Accounting Principle: “Enable meaningful comparisons in GHG-related information. Use consistent methodologies for meaningful comparisons of emissions over time. Transparently document any changes to the data, boundary, methods, or any other relevant factors.” Please provide additional information on source of these harvest boundaries and area calculations.

Project Personnel Response: The harvest boundary shapefiles were provided to us by the landowner and include the correct acreage. All files which reference the harvest boundary area have been updated with the correct harvest areas, as provided in the harvest boundary shapefile. Because this update altered the harvested wood product (HWP) value slightly, the Monitoring Report was updated to reflect this adjustment in HWP.

Auditor Response: Accepted**Bearing on Material Misstatement or Conformance (M/C/NA):** C