VALIDATION & VERIFICATION REPORT

American Carbon Registry

ACR Project ID #374 –Bluesource – Shafer-Tuuk Improved Forest Management Project

Reporting Period:
29 July 2016 to 29 March 2018

Prepared for:

Bluesource

27 November 2018

AMERICAN CARBON REGISTRY

ANSI ACCREDITED

ISO 14065 Greenhouse Gas
Validation and Verification Body
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I. Summary

This report presents the findings of the validation and verification assessment of the Bluesource – Shafer-Tuuk Improved Forest Management Project (Project) developed by LLC.

The assessment was performed under the validation and verification guidance described in the ACR Validation and Verification Guideline Version 1.1 (June 2012). In the course of the assessment, findings were developed and issued which included New Information Requests (NIRs), Non-Conformity Reports (NCRs) and Opportunities for Improvement (OFIs). All New Information Requests and Non-Conformity Reports have been adequately addressed by the Project Proponent, resulting in their closure.

On the basis of the information provided and the analyses completed, SCS was able to determine that the GHG Project Plan and Monitoring Reports conform to the requirements of the ACR Standard version 5.0 and the ACR-approved methodology, *Improved Forest Management (IFM) Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands* v. 1.2 (the Methodology).

II. Introduction

This document reports on validation and verification activities for the Bluesource – Shafer-Tuuk Improved Forest Management Project. Activities were focused on the evaluation of the Project Plan and the Monitoring Report against the requirements of the ACR Standard v5.0 and the ACR Methodology, *IMF Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands* v. 1.2 (referred to collectively as the ACR Requirements). This report presents the findings of the assessment and provides a description of the steps involved in the validation and verification process.

III. Project Description

The Project improves forest management on Shafer-Tuuk Farm LLC forests, with forest management practices representing an improvement in the carbon storage and conservation value compared to higher return management regimes of industrial private lands in the region, which are characterized by shorter, even-aged rotations. The project describes the project activities as having a focus on sustainable, natural forest growth and maintenance harvests for essential activities and forest health. In addition, the project ensures long-term sustainable management of the forests, which could otherwise undergo commercial timber harvesting.

The project is expected to sequester approximately 320,669 $mtCO_2e$ (without risk buffer deduction) over the first crediting period of 20 years.

IV. Validation and Verification Specifications

A. Objectives

The objectives of this validation and verification assessment are to:

- Assess conformance of the Project Plan and supporting documentation to the requirements of the ACR Standard and the ACR-approved methodology;

- Evaluate the methodologies for determination of the baseline scenario and additionality, for monitoring and quantification of GHG reductions, and for quality assurance and control;

- ACR Validation and Verification Standard Version 1.1, May 2018

Evaluate the quantification of the baseline and ex ante estimate of project GHG removal enhancements, leakage assessment, and procedures followed in determining the non-permanence risk assessment;

- Evaluate reported net GHG emission reductions and removals

B. Level of Assurance

The level of assurance for this assessment is reasonable as opposed to absolute or limited. Reasonable assurance is attained by examining a sufficient amount of information, informed by the verifier's professional judgment.

C. Treatment of Materiality

ACR requires that discrepancies between the emission reductions/removal enhancements claimed by the Project Proponent and estimated by the verifier be less than the materiality threshold of plus or minus 5 percent.

D. Scope

The scope of the validation and verification assessment encompasses desk and site assessment activities for the Project against the following requirements:

- ACR Standard Version 5.0, February 2018 (ACR Standard)

- ACR's IFM Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands Version 1.2, December 2016 (Methodology)

- ACR Validation and Verification Standard Version 1.1, May 2018

The assessment was performed using the following client-supplied information:

- The Bluesource – Shafer-Tuuk Improved Forest management Project files; "ShaferTuuk_GHG Plan_11_27_18.pdf" (Project Plan) and "Tuuk_RP1_MonitoringReport_11_26_18.pdf" (Monitoring Report)

- Supporting documentation provided by the Project Proponent

- Observations made and interviews conducted were completed during the kick off call of 03 April 2018, during the opening meeting of 24 April 2018, and during the site visit of 24 April through 25 April 2018 in White County, Tennessee.

The assessment process included examination of:

- The project area boundaries and procedures for establishing the project area boundaries
- A representative sample of project activity sites
- The temporal boundary
- GHG sinks within the project boundary
- Determination of the baseline scenario and additionality
- Methodologies and calculations used to generate estimates of emissions reductions/removal enhancements
- Project eligibility requirements
- Original data and documentation as relevant and required to evaluate the GHG assertion

V. Validation and Verification Team

Lead Verifier: James Cwiklik, SCS Global Services, Verification Forester
Mr. Cwiklik has an M.F. in Forestry and Ecosystem Management from Michigan Technological University. He completed his undergraduate work at the University of Pittsburgh, receiving a B.A. in Environmental Studies, with a minor in Religious Studies and a certificate in Geographic Information Systems. Previously he has been a Lead Consulting Forester with Davey Tree's Resource Division supervising a team of foresters for Pacific Gas and Electric's (PG&E) Community Pipeline Safety Initiative (CPSI) project. Mr. Cwiklik is a certified Arborist and has contributed to the efforts of eradicating the Asian long horned beetle in southwestern Ohio as an Inventory Arborist and Quality Control Specialist. He has also worked with the Michigan Department of Natural Resources as a Forest Technician Crew Leader to lead forest inventories across northern Michigan with an emphasis on the spread of Emerald Ash Borer and Beech bark disease. Since joining SCS in February 2018, he has conducted multiple site visits under different standards to assist with data collection, analysis, and field training.

Verifier: Francis Eaton, SCS Global Services, Verification Forester
Francis Eaton holds a Masters of Forest Science from the Yale School of Forestry and Environmental Studies and received his B.S. in Forestry from Northern Arizona University, graduating with honors. The focus throughout his studies was forest management with emphases on sampling design and statistical analysis. Mr. Eaton has seven years' experience working as a verification forester and is a lead auditor with SCS Global Services (SCS) in their greenhouse gas verification program. He has experience auditing

AFOLU projects under the Verified Carbon Standard (VCS) and Climate, Community, and Biodiversity Alliance (CCBA) standards, as well as Improved Forest Management projects under the standards of the Climate Action Reserve (CAR), The American Carbon Registry (ACR), and the California Air Resources Board (ARB). Prior to working for SCS, Mr. Eaton worked in the southwestern U.S. performing fire risk assessments and writing management plans for private landowners. Mr. Eaton also spent three years working for the Ecological Restoration Institute focusing on restoration of ponderosa pine and grassland ecosystems.

Verifier and Cruiser: Michael Hoe, SCS Global Services, Verification Forester

Mr. Hoe has a M.S. in Sustainable Forest Management, with a minor in Forest Biometrics, from Oregon State University, where he also received his B.S. As a Graduate Research Assistant for OSU he organized a field crew and measurement protocol to obtain high quality field data. Previously he served as a Forester with Mason, Bruce, & Girard Inc, assisting with project management, quality control, and timber cruising in the Pacific Northwest and California. Mr. Hoe has also conducted research with the Bureau of Land Management, obtaining data on tree growth and damage through extensive field work. In addition, he has taught Forest Mensuration and plans to publish two papers on quantifying post-fire basal area mortality with multi-temporal LiDAR. Mr. Hoe is a lead verifier with SCS and has conducted several forestry verifications. During his time with SCS, he has proven to be a well-rounded carbon auditor, possessing a full gamut of technical expertise ranging from forest biometrics, growth and yielding modeling, and timber cruising. Mr. Hoe is based in Eugene, Oregon.

Senior Technical Reviewer: Zane Haxtema, SCS Global Services, Senior Verification Forester

Mr. Haxtema holds a M.S. in Forest Resources from Oregon State University (Corvallis, Oregon, USA) and a B.S. from The Evergreen State College (Olympia, Washington, USA). A well-rounded forestry professional, Mr. Haxtema held a wide variety of positions in forest research and management before coming to SCS, ranging from work on logging and tree planting crews to experience as a wildland firefighter and research assistant. A specialist in natural resource inventory, Mr. Haxtema holds significant expertise in sampling design, inventory management and growth modelling. Mr. Haxtema is well versed in a wide variety of methodological approaches for carbon accounting, having served as a lead auditor on a wide variety of projects under the Climate Action Reserve, the Verified Carbon Standard and the Climate, Community and Biodiversity Standards.

VI. Validation/Verification Process

A. ACR Certification

As the first step in the approval process for a GHG Project Plan, ACR screens the Project Plan against the ACR Standard and any relevant sector standard in order to determine whether the Project Plan complies with all applicable requirements. If ACR determines that the requirements are met, it certifies the Project Plan. A listing form was signed on 16 March 2018. A Conflict of Interest Attestation was signed on 3 April 2018.

B. Desk Assessment

Following certification of the Project Plan by ACR, the Project Proponent engaged SCS to provide the required third-party validation of the Project Plan and validation of the GHG assertion for the Project. The Project Proponent provided to SCS the Project Plan (dated 30 March 2018) and

additional supporting documentation for a desk review on the 3 April 2018. SCS reviewed the materials to assess conformance with the ACR requirements. As this review proceeded, SCS identified items of non-conformance as well as a number of items requiring additional information or clarification. These items were recorded as Findings and were delivered to the Project Proponent at the same time as the Findings developed during the site visit. In addition, the Project Proponent's ex-ante GHG assertion was checked to ensure that the carbon stock quantification was conducted properly without material error, and that algorithms, equations, and default factors used were appropriate and from published sources.

In addition to screening the Project Plan, Monitoring Report and other documentation for conformance to the ACR requirements, the audit team also performed a risk-based analysis to identify those areas where errors or omissions pose the greatest risk that the GHG assertion might be overstated. Key factors that impact the reported emission reductions/removal enhancements were identified in a sampling plan that informed the Validation/Verification Plan which was created to focus on the critical elements presenting potential risk for errors and material misstatement. The Validation/Verification Plan was delivered to the Project Proponent prior to the site visit , which occurred on 24 - 25 April 2018.

C. Site Visit

The Lead Verifier conducted an opening meeting on 24 April 2018, the first day of the site visit. The site visit was conducted in White County, Tennessee on the 24 through 25 April 2018. Site visit activities consisted of an opening meeting held at the hotel, meeting with Cakey Worthington from Bluesource LLC. Additional meetings were held during the field visit. Activities conducted in the field included carbon stock re-measurement of a random sample of plots in all project strata, sufficient to provide a reasonable level of assurance that the GHG assertion provided by the Project is without material discrepancy, per ACR's Standard's requirements for inventory sampling. In addition, boundary work was conducted, and inventory techniques were observed to assess that the Project's measurement and monitoring systems met ACR requirements.

Verification Sample

Prior to the site visit, the verification team was provided with a complete list of forest inventory plots tree attributes and plot level carbon values. The verification team used a random sampling strategy to select a 5% sample of inventory plots from the data provided. The resulting verification sample consisted of 5 plots across all strata (1 extra plot was randomly added to the sample to better capture stocking variability). Using the ACR precision target (+ or – 10% of the mean at the 90% confidence level), the verification team compared the verification sample data to the plot level carbon data provided by project personnel using a t-test and confirmed that the project on site carbon stocks data were reported accurately.

During the meetings, the validation/verification team met with the following individuals in person:

- Cakey Worthington, Senior Manager, Bluesource LLC
- Trisha Johnson, Director Forest Conservation, The Nature Conservancy
- Dillion Alley, Forester, American Forest Management

In addition, in the course of the assessment, the team met with the following individuals remotely to discuss modeling and spatial elements of the project:

- Carlos Silva, Forest Carbon Modeling Manager, Bluesource LLC

D. Findings

Throughout the validation/verification, there was an iterative exchange between SCS and the project team to gather additional information for review and examination, and to report instances of non-conformance of the Project to the ACR Requirements. This exchange includes Findings—New Information Requests (NIR) and Non-Conformity Reports (NCR)—that are issued by SCS to the project team. The project team must respond to NIRs and NCRs in order for SCS to render a validation/verification opinion. At this time all Findings have been appropriately addressed by Bluesource and subsequently closed by SCS.

The Findings from the validation and verification of the Project are compiled in a list of findings and included as Appendix A.

VII. Validation/Verification Activities

SCS validated the GHG Project Plan against the validation criteria and the Monitoring Report against the verification criteria contained in the ACR Standard, and the ACR-approved *Improved Forest Management (IFM) Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands* v. 1.2 (the Methodology). Validation under ACR, which occurs once per crediting period, includes an in-depth assessment of the Project Plan and supporting documentation to determine whether the Project is in conformance with the ACR Requirements. Verification occurred for the reporting period of July 29, 2016 through March 29, 2018. The following sections describe the elements of the Project Plan and Monitoring Report that were examined.

A. Eligibility

o The Project is located on private non-federal US forestlands; the Project Proponents presented clear land title and offset title.

o The land can be legally harvested by entities owning or controlling the timber rights, and the project area meets the definition of Forestland, in accordance with the IFM methodology's eligibility requirements.

o The Project start date, 29 July 2016, complies with the ACR Standard 5.0. The tree inventory was conducted in April 2017. The project term of 40 years, and the crediting period of 20 years conform to ACR requirements.

o The ACR Standard includes additional eligibility requirements, including that the offsets generated by the project be real, additional, and permanent. The project meets these requirements.

In summary, the audit team found the Project Plan and Monitoring Report to be in conformance with applicable eligibility conditions.

B. Location and Boundaries

The Project Plan includes GPS coordinates for the project area. The Project Proponent provided GIS files of project area boundaries which the audit team converted to kmz format for display in Google Earth. During the site visit, the audit team maintained a GPS track record and recorded waypoints at strategic locations. The GPS records corroborate the project area boundaries provided by the Proponent. In addition, non-forested acres (e.g. ski runs, larger trails, roads) were removed from the project boundary to a minimum mapping unit of 2.5 acres. These features were appropriately excluded from the project area as tested both in the field and during desk review.

C. Land Title and Ownership of Offset Credits

The Project encompasses one large parcel (3,111 acres) of northern hardwoods/oak-hickory forest in eastern Tennessee. The Shafer-Tuuks manage their property and forests with a long-term sustainability focus. The property entered into a conservation easement shortly after starting this project. The project team provided the deeds and titles contained within the project area, as well as the Project Proponent's signed attestation of Offset Title. The validation/verification team performed ownership checks with County Assessor offices by phone, and through online databases, and was able to confirm the Project Proponent as owner in fee of the project area, therefore meeting ACR Requirements for land title and ownership of offset credits.

D. Start Date

The Project's start date is listed as 29 July 2016, which is the date the forest owner and Bluesource entered in to a contractual agreement to commence the carbon project. As the ACR defines the start date as the date on which the project began to reduce GHG emissions against its baseline, and, for AFOLU activities, that these activities occurred specifically on project lands, the project meets the ACR Requirements. It is worth noting that the inventory data was collected in April of 2017. The process used in calculating emissions included degrow of live tree stocks from the April 2017 inventory to the July 29, 2016 start date.

E. Project Activities

The Project Plan describes the project activities which consist of management decisions focusing on sustainable, nature forest growth and maintenance harvests for essential activities and health. No commercial harvests are planned. In tandem with the project, a conservation easement has been put into place with The Nature Conservancy to ensure permanence. The project will achieve GHG removal goals by sequestering more atmospheric CO_2 than a baseline scenario in live aboveground biomass, belowground biomass, dead wood, and soil.

F. GHG Sources, Sinks, and Reservoirs

The Project Plan identifies the GHG sources and sinks within the project boundaries. Above and below ground live tree biomass are monitored as well as harvested wood products. Dead standing wood and methane due to slash burning has been excluded. While the project proponent does plan on piling and burning slash during future reporting periods, none has occurred during this first reporting period.

These provisions conform to ACR Requirements.

G. Baseline Scenario and Additionality

In accordance with the IFM Methodology, projects must apply a three-prong additionality test to demonstrate that they exceed currently effective and enforced laws and regulations, exceed common practice in the forestry sector and geographic region and face a financial implementation barrier. The validation/verification team was able to confirm these statements and that the project team conducted the proper additionality analysis and conformed to the additionality requirements of the Methodology. In addition, the Project Proponent signed an attestation of full regulatory compliance.

The validation/verification team confirmed that the project baseline as the continuance of an aggressive harvesting regime, is appropriate for the region and is in compliance with the Methodology.

H. Permanence

A non-permanence risk rating analysis is referenced in section B8 of the Project Plan. Under the ACR Standard, the validation/verification body is charged with evaluating whether the risk assessment has been conducted correctly. The project team performed the Risk Rating by applying the ACR Tool for Risk Analysis and Buffer Determination. SCS' evaluation of the use of the tool and acceptance of the proposed 16% buffer contribution is documented in workbook "ShaferTuuk_GHG Plan_11_27_18.pdf". In addition, the Project Proponent committed to a 40-year agreement with ACR.

The validation/verification team reviewed the Risk Rating analysis described in Section B8 of the Project Plan, adequately addressing other potential causes of unintentional reversals including tree death from wildfire, disease, drought, or wind. The information was appropriately incorporated into this Project Plan and supporting documentation was supplied where needed.

The audit team determined that the risk assessment was conducted correctly.

I. Quantification of Carbon Stock Changes

The validation/verification team's quantitative review included an assessment of the primary quantitative data used to assess carbon pools accounted for by the project for both baseline and project scenarios. The Project's carbon pools were evaluated including above and belowground biomass, standing deadwood, and harvested wood products. The team performed a check of all the project quantification worksheets and model inputs including allometric equations for calculating tree biomass, Forest Vegetation Simulation (FVS) inputs, and values used in both ex ante and ex post baseline and project scenarios. Once inputs were verified, the FVS models were rerun and the calculation of ERTs checked.

To derive the carbon values for the reporting period of 29 July 2016 through 29 March 2018, the project used live tree carbon stocks from the inventory performed April 2017. To derive the with-project scenario, the inventory was projected from the April 2017 inventory, and degrown to July 2016 (the start of the monitoring period). The growth projections were developed by deriving individual live tree annual diameter growth rates from one 10 year cycle model run using the FVS-SN variant, with no management. The validation/verification team ran the FVS model to confirm all calculations were conducted appropriately.

Carbon in standing dead wood was estimated using the FVS Fire and Fuels Extension (FFE) with the Jenkins equations, with deductions taken for standing dead per decay classes recorded in the field. Decay classes were translated to the most closely corresponding Methodology-defined class. Additionally, for all standing dead wood with methodology decay class 4 (i.e. 4 or 5 as recorded in the field), only stem wood was included in carbon calculations. The validation/verification team confirms that the calculations were conducted appropriately and free of material error.

In summary, all of the above calculation methods are in conformance with the ACR Requirements.

J.   Ex-Ante Offset Projection

The Project Plan section A7 includes a list of ex-ante offset projections by year for the first crediting period of 20 years (including GHG removal from long-term wood products) based on growth projections generated using the FVS model. Ex-ante estimation methods are described in section E1 (IFM Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on non-Federal U.S. Forestlands v1.2) and are in conformance with the Methodology's ex-ante estimation methods.

K.   Data Management and QA/QC

The project's collection and management of monitoring plot data, check cruises, and maintaining QA/QC procedures for forest inventory SOPs, including field data collection, data management, and recordkeeping are detailed in the Project Plan and referenced in the Monitoring Report. The validation/verification team finds the risk of material misstatement in the area of data management and QA/QC to be low.

L.   Uncertainty

The Project Plan section E4 describes how ex post uncertainty is accounted for and quantified per the Methodology requirements. The validation/verification team checked the calculations, and that uncertainty was used appropriately in the Monitoring Report calculations, and confirms that the uncertainty analysis was conducted in accordance with the ACR requirements.

M.   Leakage

The Project Plan describes that leakage analysis was limited to market leakage. Market leakage was determined by quantifying merchantable carbon removed in the baseline and project scenarios. All forestlands owned by Shafer-Tuuk Tree farm, LLC are FSC-certified. A decrease in wood products is reported as 94%. The assigned market leakage deduction of 40% is appropriate. The validation/verification team found the Project's approach to leakage to be reasonable and in conformance with ACR's requirements.

N.   Community and Environmental Impacts

The audit team confirms that the Proponent has evaluated community and environmental impacts and found no negative impacts from the improved forest management project. The project helps conserve the project area as habitat for wildlife, plant diversity, and water quality protection. It also helps to protect from soil erosion and degradation as outlined in Section A5 of the Project Plan.

O. Verification Data:

The data and information supporting the GHG assertion for the first reporting period of 29 July 2016 through 29 March 2018 are reported in the Monitoring Report. The ERTs for the reporting period are projected using the FVS growth and yield model for both the baseline and project scenario, as described in Section I Quantification of this report.

The ERT's (as calculated by equation 20 of the methodology) associated with the first reporting period are reported in the Monitoring Report and verified by the validation/verification team are as follows: 85,260 tCO_2e.

The validation/verification team confirmed that the Monitoring Report conforms to the requirements of the ACR Standard, the ACR Validation and Verification Guidelines, and *the Improved Forest Management (IFM) Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands* v. 1.2.

VIII. Validation and Verification Opinion

The SCS validation/verification team performed the assessment according to the validation specifications described in Section IV of this report. The team was able to confirm that:
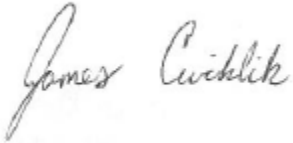
- The Project Plan conforms to the requirements of the ACR Standard, the ACR Validation and Verification Guidelines, and the ACR–approved *Improved Forest Management (IFM) Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands v.* 1.2;

- The procedures followed for determination of the baseline scenario and additionality conform to ACR's standards and the requirements of the methodology;

- The procedures followed to quantify the ex-ante estimate of net GHG removal enhancements and to perform the non-permanence risk assessment conform to ACR's requirements; and

- The procedures and methodologies laid out in the Project Plan with respect to monitoring and quantification of project net GHG removal enhancements conform to ACR's requirements.

For verification, the level of assurance and objectives, scope and criteria of the verification are described in Section IV of this report. Through verification activities, the SCS assessment team was able to confirm that:

- The Monitoring Report conforms to the requirements of the ACR Standard, the ACR Validation and Verification Guidelines, and the *Improved Forest Management (IFM) Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands v.* 1.2;

- The data and information supporting the GHG assertion were projected and/or historical in nature;

- The actual number of ERTs, 85,260.0 tCO_2e associated with the Monitoring Report has been verified.

- The actual number of credits to be deposited in the buffer account is 16,242 tCO2e.

Through the validation and verification assessment, SCS has determined that the Bluesource - Middlebury IFM Project, developed by Bluesource LLC is in conformance with the American Carbon Registry Standard and the ACR Methodology for *Improved Forest Management (IFM) for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands* (Version 1.2). Furthermore, all issues identified during the validation and verification assessment were resolved and found to be in conformance with ACR Requirements. The Project Plan and Monitoring Report are considered accurate, complete, transparent, and free of material misstatements. Whereas, some discrepancies exist between the project reporting and the verification calculations, the verification team does not consider these discrepancies correctable and the discrepancies do not violate the 5.00 percent materiality threshold. The overall aggregation of errors and omissions is 0.02%. Therefore, SCS can issue a qualified positive Validation and Verification Opinion.

_____   **27 November 2018**
James Cwiklik, Lead Verifier   **Date**

_____   **27 November 2018**
Zane Haxtema, Technical Reviewer   **Date**

Appendix A: List of Findings

The following is a complete list of findings issued and resolved during this assessment. All project responses are verbatim and have not been altered for this report.

NCR 1 Dated 3 May 2018
Standard Reference: ACR Standard 5.0
Document Reference: ShaferTuuk_GHG Plan_3_30_18, Tuuk_Start_RP1_CO2_3_28_18,
Finding: Chapter 2 Section A states "Reduce bias and uncertainties as far as is practical. Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with confidence as to the integrity of the reported information (WRI/WBCSD, Corporate Inventory Guidance, 2007)." During the audit it was discovered that the species coding for all calculations, including project scenario, baseline, uncertainty, etc. was inaccurate. The 2-letter acronym is quite consistent (i.e. SM for Sugar Maple), however the FIA codes used are not. Given that the protocol requires data accuracy as stated above, the current finding indicates that the project is not in conformance with the standard.

Project Personnel Response: The species crosswalk issue has been corrected and all modeling and subsequent documentation has been updated. Additionally, a "Species Crosswalk" tab has been added to the Tuuk_Start_RP_CO2_5_11_18.xlxs to add greater clarity on how species were crosswalked.
Auditor Response: Upon issuance of this finding the client provided a species crosswalk table and updated all subsequent carbon calculations. The audit team reviewed the species crosswalk table and confirmed that the changes solved the previous errors. In addition, the updated workbooks were consistent with the new species crosswalk. Therefore, this finding has been resolved.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 2 Dated 6 Jun 2018
Standard Reference: ACR Standard 5.0
Document Reference: ShaferTuuk_GHG Plan_3_30_18, Tuuk_100Yr_Calcs_5_17_18
Finding: Chapter 2 Section G states "The Project Proponent shall establish and apply quality assurance and quality control (QA/QC) procedures to manage data and information..." During our qualitative review, it was found that the project title was not consistent between documents. Specifically, within HarvestSchedules tab in the Tuuk-100Yr_Calcs_5_17_18 file, there is a Silvicultural Allocations Table that lists the project as Hawk Mountain. While the GHG plan refers to it as "Blue Source - Shafer-Tuuk Improved Forest Management Project."
Project Personnel Response: The Hawk Mountain reference has been removed from the HarvestSchedules tab in Tuuk-100yr_Calcs_6_13_18.xlsx.
Auditor Response: Upon issuance of this finding the client edited the referenced document to reflect the correct project title.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 3 Dated 6 Jun 2018
Standard Reference: ACR Standard 5.0
Document Reference: ShaferTuuk_GHG Plan_3_30_18
Finding: Chapter 2 Section A states "Select the GHG sources, GHG sinks, GHG reservoirs, data and methodologies appropriate to the needs of the intended user (ISO 14064-2:2006, clause 5.6). The GHG plan states that "no burning of any kind is expected to take place in the project area", however methane (CH4) is listed as "included" in their burning of biomass table in section B4 of the GHG plan. Please clarify if burning of biomass is conducted as part of the project activities. Please clarify if methane is included or excluded.
Project Personnel Response: No burning of any kind is expected to take place in the project area. The methane pool is excluded and the GHG Plan has been updated accordingly: "Shafer-Tuuk_GHGPlan_6_11_18_V3.pdf".
Auditor Response: Upon issuance of this finding the client updated the GHG plan to reflect an accurate account of burning activities.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NIR 4 Dated 6 Jun 2018
Standard Reference: The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: 2016 2017 2 volume, Tuuk_RP_ERT_HWP_5_17_18
Finding: Chapter C, section C3, section 3.2, step 1, part b states "Actual harvested wood volumes and species must be based on verified third party scaling reports, where available. Where not available, documentation must be provided to support the quantity of wood volume harvested." The wood products calculations stem from numbers found in "2016 2017 2" volume file but they do not include units or an explanation of where these values come from. Please provide additional documentation to support the actual quantity of wood volume harvested which is reported in workbook "2016 2017 2 volume".
Project Personnel Response: AFM uses an security and tracking system with all their log jobs on the Shafer-Tuuk property (and in general). They are on site and give a security ticket to every log load that leaves the property. The ticket is duplicated and kept for record in AFM's system. When the log trucks go to the mills, they scale and record the volumes or weights (depending on product type) and match each load with AFM's ticket. They then provide a summary report to AFM of all the loads and the volumes they recorded. AFM then matches each ticket internally to the load scale reports and respective tickets sent in by the mills. These reports, which are provided in hard copy, are processed internally and matched with each of AFM's record tickets. Total volumes are recorded at that time into the volume excel sheets, such as the one provided for this particular harvest. The original slips and tickets are not scanned, and are staples together and saved in boxes in a fire proof safe in the AFM office.
Auditor Response: Client responded to the information request with a detailed account of how AFM tracks and records volume harvested on the property. The initial NIR, providing documentation to support actual harvested wood, remains. The values found in "2016 2017 2" are not easily verifiable because they lack any information regarding area, dates, or quantities (values do not have corresponding units).
Project Personnel Response 2: We received from AFM a much more detailed electronic copy of the harvests for the reporting period with total volumes and weekly load summaries with load/ticket numbers, volume units, commodity volumes and pricings, etc. Please see the attached proprietary harvest volume and financial workbook in the shared folder "Harvest Summary - Shafer-Tuuk T 2016_NEW". We confirmed that the plot that fell in the harvest measured during the verification had been inventoried post-harvest and that the fallen trees were a result of damage/wind-throw after the harvest and inventory. Spatial references to the harvest areas can be found in the already provided "2016_Ash_Sale_Map" and "TS-2016 old sale area" files.
Auditor Response 2: Client responded with documentation to support actual harvested wood. Information such as load summaries, ticket information, volume, and pricing were provided. This NIR is now closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 5 Dated 6 Jun 2018
Standard Reference: ACR Standard 5.0
Document Reference: Tuuk_RP_ERT_HWP_5_17_18
Finding: Chapter 2 Section G states "The Project Proponent shall establish and apply quality assurance and quality control (QA/QC) procedures to manage data and information..." During the review of worksheet "Actual_RP1_HWP_Step_1" in workbook "Tuuk_RP_ERT_HWP_5_17_18", the headers for the main table reported in A2:J23 are inconsistent with the values they reference. For example, column 'fia_code' contains 'HW' which is not an FIA code. Column 'saw (BF-Doyle)' contains FIA codes. Column 'pulp (tons)' appears to contain board foot volume. Column 'HW/SW' contains pulp volume in tons. Please provide clarification on the headers and values referenced above. The values in columns H, 'CF', appear to be calculated correctly which ultimately feed the rest of the calculations for actual wood products, please confirm.
Project Personnel Response: The column labels identified have been corrected in Tuuk_RP_ERT_HWP_6_13_18.xlsx. Because the original cell references were correct, the correction produced no change in the calculations.
Auditor Response: Upon issuance of this finding the client updated the appropriate worksheet to reflect the correct units and values in each column (Step 1 Harvest Wood Products Table). The values did not change as reported.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NCR 6 Dated 6 Jun 2018
Standard Reference: The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_5_17_18
Finding: Chapter C, section C3, Equation 5 defines how to quantify the long-term average baseline stocking level for the Crediting period. Cell H4 in worksheet "ACR_IFM_ERT_Calcs" within workbook "Tuuk_RP_ERT_HWP_5_17_18" reports a value of 234,348. However, the formula: =SUM (D10:W11)/20+Baseline_HWP_Step_4_5!C37, references cell C37 in the baseline wood products worksheet resulting in a value of zero. Thus, the quantification of the long-term average baseline stocking level for the Crediting period is out of conformance with the approved methodology as it does not currently include the twenty-year average value of annual carbon remaining stored in wood products 100 years after harvest (in metric tons of CO2).

Project Personnel Response: In Tuuk_RP_ERT_HWP_6_13_18.xlsx, the cell has been corrected to reference Baseline_HWP_Step_4_5!$B38$, the 20-yr average CO2 in wood products. The correction, however, had no effect on the ERTs calculated because the incorrect cell was not referenced in the subsequent calculations.
Auditor Response: Upon issuance of this finding the client updated the appropriate worksheet to reflect the correct referenced values for the long-term average baseline stocking levels.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NCR 7 Dated 6 Jun 2018
Standard Reference: The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_5_17_18, ShaferTuuk_GHG Plan_5_18_18
Finding: Chapter B, section B5 states "Project Proponents must conduct their risk assessment using the ACR Tool for Risk Analysis and Buffer Determination or, until release of this tool, the VCS Tool for AFOLU Non‑Permanence Risk Analysis and Buffer Determination. The output of either tool is an overall risk category, expressed as a fraction, for the project translating into the buffer deduction that must be applied in the calculation of net ERTs (section G1). This deduction must be applied unless the Project Proponent uses another ACR-approved risk mitigation product."
The buffer deduction is listed as 16% in the GHG plan, however, during the ERT calculations in workbook "Tuuk_RP_ERT_HWP_5_17_18", the Buffer (BUF) is set to 0 (Cell D5, worksheet 'ACR_IFM_ERT_Calcs'). Therefore, the current quantification of ERTs is not in conformance with the methodology.

Project Personnel Response: We have edited the Tuuk_RP_ERT_HWP worksheet to show the project ERT calculations both with and without the buffer to show the quantity of credits required to be transferred to the buffer pool. For this project, we are requesting full issuance of the credits to our account and will draw the buffer credits from Bluesource's general account (rather than from this project's credits) to add to the buffer pool.
Auditor Response: Upon issuance of this finding the client updated the project ERT calculations to reflect the correct buffer deductions.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NCR 8 Dated 14 Jun 2018
Standard Reference: ACR Standard 5.0; The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_6_13_18; Tuuk_100Yr_Calcs_6_13_18
Finding: During the review of the calculation workbooks an inconsistency was identified between standing dead carbon stocks in the year 2016 for the project and baseline scenarios. As both scenarios begin in 2016 with the same inventory data, the value should be the same and not include belowground biomass per the ACR requirements. Please update the standing dead calculation for the year 2016 to be consistent between the baseline and project scenario.
Project Personnel Response: The project and baseline standing dead now only include aboveground carbon and match between both scenarios in all three worksheets: Tuuk_Start_RP_CO2_7_9_18, Tuuk_100Yr_Calcs_7_9_18, Tuuk_RP_ERT_HWP_7_9_18.
Auditor Response: Upon issuance of this finding, the client updated their carbon calculation workbooks to be consistent relative to the start date standing dead carbon stocks. The audit team confirmed that the values are now consistent throughout the documentation and quantification, therefore, this finding has been resolved.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NCR 9 Dated 14 Jun 2018
Standard Reference: ACR Standard 5.0; The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_6_13_18
Finding: During the review of the ERT workbook, an error was identified in row 15, Year T, where some values are set to equal 1 resulting in the incorrect quantification of deltaC baseline. Please correct the error and provide an updated workbook.
Project Personnel Response: Year T indicates the year when the projected stocking level reaches the long term average. As required by the protocol, in year T and all subsequent years "the long-term average stocking level is used in the baseline stock change calculation for the entire Project Period." Row 15 in the ERT workbook = 1 if year T has been reached. Whereas this indicator returned to 0 in the previous workbook, the updated workbook now uses the long-term average stocking level in all years after year T (i.e., Row 15 = 1 for entire Project period once year T has been reached).
Auditor Response: Upon issuance of this finding, clarification was provided along with an updated workbook. Therefore, this finding has been resolved.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NCR 10 Dated 14 Jun 2018
Standard Reference: ACR Standard 5.0; The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_6_13_18
Finding: During the review of the ERT workbook, an error was identified in the reported "Uncertainty" value which feeds into the ERT calculations. As this value is not consistent with the reported value of 8.5% within the other workbooks.
Project Personnel Response: The "Uncertainty" value in Tuuk_RP_ERT_HWP_7_9_18 now matches the 8.5% reported in Tuuk_Start_RP_CO2 (Start_Stats tab).
Auditor Response: Upon issuance of this finding, the client updated the value in the ERT workbook to be consistent with that of the one quantified in Tuuk_Start_RP_CO2 (start date data and statistics). Therefore, this finding has been resolved.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NCR 11 Dated 14 Jun 2018
Standard Reference: The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_6_13_18, ShaferTuuk_GHG Plan_6_13_18_V3
Finding: Section 3.1.2 of the approved methodology states that "below-ground dead wood is conservatively neglected" when quantifying carbon in dead wood. As the current workbook still estimates dead carbon stocks, it is not in conformance with the requirements.
Project Personnel Response: This has been corrected such that dead C stocks in all workbooks only include AG stocks. The cells for DEAD carbon in the Stats tabs in Tuuk_Start_RP_CO2_7_9_18 reference only AG carbon. The FVS_Pivot tables that feed the calculations in Tuuk_100Yr_Calcs_7_9_18 included only aboveground dead carbon. The stats tab in Tuuk_100Yr_Calcs_7_9_18 also only references aboveground dead C, which is carried over into the Baseline_Project_40Yr_CO2 tab in Tuuk_RP_ERT_HWP_7_9_18.
Auditor Response: Upon issuance of this finding, the client removed below-ground dead carbon stocks from its estimation of total project carbon stocks. Therefore, the quantification of carbon is in compliance and this finding has been resolved.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NCR 12 Dated 14 Jun 2018
Standard Reference: The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_6_13_18, ShaferTuuk_GHG Plan_6_13_18_V3; Tuuk_Start_RP_CO2_6_13_18
Finding: Section 3.1.2.1 of the approved methodology states that "When the standing dead tree is in decomposition class 4; the biomass estimate must be limited to the main stem of the tree." During the review and discussions with qualified personnel, it was made clear that this was the intention during quantification. However, the quantification of "AGdeadC" only selected decay class 4, whereas, the "DecayClass" column reports values up to 5. Therefore, trees with decay class 5 were not selected appropriately and the quantification of carbon for observations of this type are out of conformance with the requirements.
Project Personnel Response: All decay classes, including Decay Class 5, are used in the updated Tuuk_Start_RP_7_9_18 worksheet. Specifically, column S in Start and RP CO2 tabs contains "IF(I2=6,IF(N2>=4...", with the subsequent formula computing biomass for only the main stem. Column T has a vlookup function referencing all 5 decomposition classes.
Auditor Response: Upon issuance of this finding, clarification was provided which indicated that the function was indeed properly executed. Upon review, it was confirmed that the client's statements are correct. Therefore, this finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NIR 13 Dated 27 Jun 2018
Standard Reference: The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_6_19_18
Finding: During the review of the updated ERT workbook, the audit team found 3 separate worksheets which contain the ERT table. However, worksheet "ACR_IFM_ERT_Reporting" contains a value of 455,746 for live tree CO_2 in the year 2018, whereas, the other two worksheets report a value of 420,267. Please clarify why the values are different and how the 3 worksheets are used.
Project Personnel Response: We present three ACR_IFM_ERT tabs. The first (ACR_IFM_ERT) shows credits generated at annual intervals beginning with the project start date of 7/29/16. The second (ACR_IFM_ERT_Reporting) shows credits generated at annual intervals from the start date 7/29/16, but subsequently from the reporting date 3/18/2018. The third (ACR_IFM_ERT_Vintage) allocates the annual credits from the first tab according to calendar year.
Auditor Response: Upon issuance of this finding, clarification was provided which identified which ERT tab represents. Therefore, this finding has been closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NIR 14 Dated 27 Jun 2018
Standard Reference: ACR Standard 5.0; The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_6_19_18, ShaferTuuk_GHG Plan_6_19_18_V3
Finding: Chapter 5, Section A states that "The Project Proponent shall conduct this risk assessment and propose a corresponding buffer contribution. The risk assessment, overall risk category, and proposed buffer contribution shall be included in the GHG Project Plan. ACR evaluates the proposed overall risk category and corresponding buffer contribution." Reviewing the updated GHG plan reveals an issue in the Buffer Pool Contribution. The "Total ERT's generated for crediting period" is listed as 274,347. Please indicate where this value is taken from as it cannot be verified in the Tuuk_RP_ERT_HWP_6_19_18 file.
Project Personnel Response: This ERT value has been corrected to reflect the cumulative sum of ERTs from Table A7.1 (row 32 of ACR_IFM_ERT_Calcs), which is 320,651.
Auditor Response: Upon issuance of this finding, the ERT values were updated. The finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): M

NCR 15 Dated 12 Sep 2018
Standard Reference: ACR Standard 5.0; The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non Federal US Forestlands V 1.2
Document Reference: Tuuk_RP_ERT_HWP_8_9_18.xls
Tuuk_Start_RP_CO2_7_9_18.xls

Finding: Equation 10 of the ACR methodology defines how the percentage uncertainty in the combined carbon stocks in the baseline (UNCBSL) is estimated. During the review of the uncertainty calculation used within workbook "Tuuk_RP_ERT_HWP_8_9_18.xls" and "Tuuk_Start_RP_CO2_7_9_18.xls", a non-conformity was identified in the estimation of UNCBSL where the client omitted the twenty-year baseline average value of annual carbon remaining stored in wood products for 100 years after harvest ($\bar{C}$BSL,HWP). As the quantification of UNCBSL is defined as the square root of the summed errors in each of the measurement pools, with $\bar{C}$BSL,HWP as one of those pools, it must be included. Please update the quantification of UNCBSL within the above workbooks to comply with the ACR methodology.

Equation 18 of the ACR methodology defines how the percentage uncertainty in the combined carbon stocks in the project year t (UNCP,t) is estimated. During the review of the uncertainty calculation used within workbook "Tuuk_RP_ERT_HWP_8_9_18.xls", the estimation of UNCP,t was not complete. As the quantification of UNCP,t is defined as the square root of the summed errors in each of the measurement pools, with $\bar{C}$BSL,HWP , CP,Tree,t, and CP,Dead,t as those pools, it must be included. Please update the workbook "Tuuk_RP_ERT_HWP_8_9_18.xlss" to include the quantification of UNCP,t to comply with the ACR methodology.

Equation 19 of the ACR methodology defines how the total project uncertainty in year t (UNCt) is estimated. During the review of the uncertainty calculation used within workbook "Tuuk_RP_ERT_HWP_8_9_18.xls", a non-conformity was identified in the estimation of UNCt where the client applied the UNCBSL to the change in the project carbon stocks (ΔCP,t) during quantification. Whereas, equation 19 states that UNCP,t needs to be applied to the ΔCP,t during estimation. Please update the workbook "Tuuk_RP_ERT_HWP_8_9_18.xls" to correctly quantify UNCt to comply with the ACR methodology.

Project Personnel Response: EQUATION 10

The uncertainty equations in Tuuk_RP_ERT_HWP_09_19_18.xlsx have been corrected so that they conform with Equations 10, 18, and 19 of the ACR protocol. Uncertainty in combined baseline CO2e stocks (Equation 10) is calculated in row 25 of the "ACR_IFM_ERT_Calcs" tab. The baseline uncertainty calculation (UNCBSL) now includes all required pools: live CO2e in year 1 (CBSL,TREE,1), dead CO2e in year 1 (CBSL,DEAD,1), 20-yr average CO2e in wood products (CBSL,HWP), and 20-yr average baseline GHG emissions (GHGBSL). The uncertainties in live and dead CO2e (eBSL,TREE and eBSL,DEAD), which are shown in rows 2 and 3, are calculated in the "Stats_StartDate" tab of Tuuk_Start_RP_CO2_09_19_18.xlsx.

EQUATION 18

Uncertainty in combined project CO2e stocks (Equation 18) is calculated in row 26 of the "ACR_IFM_ERT_Calcs" tab. The project uncertainty calculation (UNCP,t) now includes all required pools: live CO2e in year t (CP,TREE,t), dead CO2e in year t (CP,DEAD,t), CO2e in wood products in year t (CP,HWP,t), and project GHG emissions in year t (GHGP,t). The protocol specifies that uncertainties in live and dead CO2e (eP,TREE and eP,DEAD) should be estimated from "the last remeasurement of the inventory prior to year t." As the project is in the first reporting period, the most recent inventory is the start date inventory (year 1). Therefore, eP,TREE and eP,DEAD equal eBSL,TREE and eBSL,DEAD, which are shown in rows 2 and 3 of the "ACR_IFM_ERT_Calcs" tab in Tuuk_RP_ERT_HWP_09_19_18.xlsx .

EQUATION 19

Total project uncertainty (Equation 19) is calculated in row 27 of the "ACR_IFM_ERT_Calcs" tab. The total uncertainty calculation (UNCt) now applies the baseline uncertainty (UNCBSL) to the change in baseline CO2e (ΔCBSL,t) and the project uncertainty (UNCP,t) to the change in project CO2e (ΔCP,t).

Auditor Response: The audit team reviewed the revised calculations worksheets "Tuuk_RP_ERT_HWP_09_19_18.xlsx" and "Tuuk_Start_RP_CO2_09_19_18.xlsx" and confirmed that the project calculations were revised to conform with equations 10, 18 and 19 of the selected ACR methodology as identified within this finding.   The audit team confirmed that the baseline uncertainty calculation now includes all required pools, the audit team confirmed that the project uncertainty calculation now includes all required pools.

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

NCR 16 Dated 21 Sep 2018
Standard Reference: ACR Standard 5.0
Document Reference: Tuuk_RP1_MonitoringReport_7_11_18 ShaferTuuk_GHG Plan_9_19_18_V3
Finding: Chapter 2 Section G states "The Project Proponent shall establish and apply quality assurance and quality control (QA/QC) procedures to manage data and information..." During our qualitative review, after updates to the GHG plan and Monitoring plan, inconsistencies with values reported were discovered between calculation workbooks, the GHG Plan, and Monitoring Plan. For example, Table VI.3.a Baseline Leakage Factors in the monitoring plan - do not match leakage values reported in the GHG plan or Calc workbooks. Please update both documents with the proper numbers for ALL values, including baseline emissions, project emissions, leakage, buffer pool contributions, references to other documents (monitoring plan references old ERT workbooks), and Net GHG Emission Reductions/Removals. Keep in mind that open findings may impact those values, please update accordingly.
Project Personnel Response: Monitoring Report and the GHG Plan have been updated accordingly.
Auditor Response: The audit team reviewed the updates to the monitoring report and GHG plan. Additional errors were discovered in both documents. Specifically in the monitoring plan, section 5, a value is added for "Greenhouse gas emission from logging slash burning". The project does not have any burning on site, nor are there any calculations with burning involved (Tuuk_RP_ERT_HWP_09_21_18). Please update to accurately reflect project activities. An error was identified in the GHG plan table of contents. Please update so errors are not listed in the PDF.
Project Personnel Response 2: The GHG Plan and Monitoring Report have been updated accordingly.
Auditor Response 2: Upon issuance of this finding the GHG Plan and Monitoring Report have been updated. The old files, (ShaferTuuk_GHG Plan_9_27_V3 and Tuuk_RP1_MonitoringReport_9_27_18), are now updated.
Bearing on Material Misstatement or Conformance (M/C/NA): NA

NCR 17 Dated 21 Sep 2018

Standard Reference: ACR Standard 5.0; The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2

Document Reference: Tuuk_RP_ERT_HWP_09_19_18

Finding: The ACR methodology states "to determine the carbon storage in in-use wood products after 100 years, the first step is to determine what percentage of a Project Area's harvest will end up in each wood product class for each species (where applicable), separated into hardwoods and softwoods. This must be done by either: 1) obtaining a verified report from the mill(s) where the Project Area's logs are sold indicating the product categories the mill(s) sold for the year in question; or 2) lookup up the default wood products classes for the project's Assessment Area, as given in the most current Assessment Area Data File..." During the review of the updated workbook "Tuuk_RP_ERT_HWP_09_19_18.xls", the audit team identified an error in the allocation of default product class values where an incorrect Assessment Area is referenced. Previous versions of the ERT workbook correctly referenced the "Central Interior Broadleaf Forest Eastern Low Plateau" and "Eastern Broadleaf Forest Cumberland Plateau & Valley", whereas, the current version references "Allegheny & North Cumberland Mountains". Please correct the Assessment Area reference and respective default wood product class values to follow the methodology.

Project Personnel Response: The two correct assessment areas have been added to Tuuk_RP_ERT_HWP_09_21_18

Auditor Response: Upon issuance of this finding, the correct region has been referenced for the wood products generated calculations.

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

NCR 18 Dated 21 Sep 2018

Standard Reference: ACR Standard 5.0; The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non Federal US Forestlands V 1.2

Document Reference: Tuuk_RP_ERT_HWP_09_19_18 ShaferTuuk_GHG Plan_9_19_18_V

Finding: Equation 20 of the ACR methodology defines how to quantify the annual net greenhouse gas emissions reductions at time t. During the review of the quantification of said parameter within workbook "Tuuk_RP_ERT_HWP_09_19_18", an error was identified in the formula(s) in row 38, equation 20, of worksheet "ACR_IFM_ERT_Calcs", where the 15.0% risk buffer value (BUF) was not referenced in correctly. Instead, cell D3 is selected which represents the uncertainty in dead CO_2 stocks in year 1. Please update the above quantification to include the BUF value as part of the quantification of CACR,t as required.

Project Personnel Response: The reference to the buffer cell has been corrected to cell D5 in "Tuuk_RP_ERT_HWP_09_21_18"

Auditor Response: Upon issuance of this finding, the ERT values were updated and the correct buffer percetage is referenced. The finding is closed.

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

NCR 19 Dated 21 Sep 2018

Standard Reference: ACR Standard 5.0; The American Carbon Registry Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands V 1.2

Document Reference: Tuuk_RP_ERT_HWP_09_19_18

Finding: Equation 19 of the ACR methodology defines how to quantify the Total Project Uncertainty (UNCt). During the review of the workbook "Tuuk_RP_ERT_HWP_09_19_18" an error was identified in the quantification of UNCt where the absolute value is being taken for the change in the baseline carbon stocks ($\Delta CBSL,t$) and the change in the project carbon stocks ($\Delta CP,t$). While this has no effect in the numerator due to the values being squared, it does have an effect in the denominator resulting in a noticeable difference in the UNCt value. As the defined equation does not take the absolute value on any parameter, the current estimation of UNCt is not in conformance and will need to be updated to comply with the ACR methodology.

Project Personnel Response: The absolute value operators have been removed from the calculation of total project certainty in "Tuuk_RP_ERT_HWP_09_21_18."

Auditor Response: Upon issuance of this finding, the ERT values were updated and the correct value is referenced for UNCt.

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

NCR 20 Dated 17 Oct 2018

Standard Reference: ACR Standard 5.0

Document Reference: ShaferTuuk_GHG_Plan_10_4_18 Tuuk_RP1_MonitoringReport_10_1_18

Finding: The applicability section of the ACR Standard v5.0 states " Any project listed subsequent to March 1, 2018, must follow all requirements of and be validated against the ACR Standard v5.0. New projects listed prior to March 1, 2018, may be validated according to ACR Standard v4.0." Please update the documents to reflect the correct standard.

Project Personnel Response: An updated GHG Plan 'ShaferTuuk_GHG_Plan_10_16_18_V10.pdf' and Monitoring Report 'Tuuk_RP1_MonitoringReport_10_18_18' has been provided, correcting all references to the ACR Standard 5.0.

Auditor Response: Upon issuance of this finding, the client updated the GHG plan and Monitoring Report to correctly reference the Standard version 5.0.

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

NCR 21 Dated 18 Oct 2018
Standard Reference: ACR Standard 5.0
Document Reference: ShaferTuuk_GHG_Plan_10_4_18
Finding: Standard v5.0 states "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 conservation easement that is referenced was put into place 5 months after the reported start date. Please provide evidence that the project meets one of these criteria. Without evidence, it is not in conformance with the standard.

Project Personnel Response: The conservation easement is not the basis for the project start date. As stated in the GHG Plan section H.1., the project start date is in conjuction with the contractual signing of the carbon project with Bluesource, meeting the 3rd requirement. A redacted version of the Carbon Market and Development Agreement (CDMA) has been provided (STHK Law Fi16072915370-signed_Redacted.pdf) to provide evidence of the contractual agreement date.
Auditor Response: Upon issuance of this finding, the client provided documentation that fulfils the 3rd requirement of the project start date. This finding is closed.
Bearing on Material Misstatement or Conformance (M/C/NA): C

NCR 22 Dated 18 Oct 2018
Standard Reference: ACR Standard 5.0
Document Reference: Tuuk_RP1_MonitoringReport_10_1_18
Finding: Section 6.E Project Monitoring Reports of the ACR Standard 5.0 states "The report shall describe the status of project operation, and include the data monitored and monitoring plan, and the calculated emission reductions for the reporting period." Reviewing the most recent monitoring plan reveals inaccurate ERT values reported at time t, as well as subsequent tradable balances. Please update these values to be in conformance with the standard.
Project Personnel Response: ERT values in the Monitoring Report have been corrected.
Auditor Response: The verification team received an updated version of the monitoring report titled "Tuuk_RP1_MonitoringReport_10_24_18" via email From Cakey Worthington on 25 October 2018. The ERT data in the updated report is now in agreement with the results from SCS data checks. The information provided is sufficient for resolving this issue.
Bearing on Material Misstatement or Conformance (M/C/NA): C, M