Forest Project Validation and Verification Report for the American Carbon Registry

Client Name: **Port Blakely**

Project: **Winston Creek Forest Carbon Project**
                               Project ID: ACR389

Reporting Period: **17 April 2017 through 31 August 2017**

Verification Start Date: **25 September 2017**

Lead Verifier: **Michael Hoe**

Technical Reviewer: **Christie Pollet-Young**

Report Date: **26 April 2018**

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I. Summary

This report presents the findings of the validation and verification assessment of the Winston Creek Forest Carbon Project developed by Port Blakely.

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 4.0, ACR Forest Carbon Project Standard 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 Winston Creek Forest Carbon Project. Activities were focused on the evaluation of the Project Plan and the Monitoring Report against the requirements of the Assessment Criteria (described below). 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 is located near the town of Morton, Washington and is characterized by industrial timber lands dominated by Douglas-fir. In addition, Port Blakely has owned and managed the land for a long period of time and is highly knowledgeable of the area and its resources. The project improves forest management on the Winston Creek project by extending the rotation age relative to industrial private lands in the same geographic region. In general, industrial private lands in the region are characterized by shorter, even-aged rotations (approximately 30-40 years). The project ensures long-term sustainable management of the forests, which could otherwise undergo commercial timber harvesting.

The project is expected to sequester approximately 853,035 Emission Reduction Tons (ERTs) over the first crediting period (20 years).

IV. Validation 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, the ACR Forest Carbon Project 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;
- 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. Assessment Criteria

- American Carbon Registry Standard Version 4.0, January 2015 (ACR Standard)
- ACR Forest Carbon Project Standard Version 2.1, November 2010 (FCPS)
- 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)
- Errata and Clarifications for: IFM Methodology for Quantifying GHG Removals and Emission Reductions through Increased Carbon Sequestration on Non-Federal U.S. Forestlands v1.2
- American Carbon Registry Standard Validation and Verification Guideline Version 1.1, June 2012

E. Process

The scope of the validation and verification encompasses desk and site assessment activities for the Project using the following client-supplied information:

- The GHG Plan - "PB_Winston Creek_GHG Plan_v2.2_09Feb208"

- Supporting documentation provided by the Project Proponent
  - Observations made and interviews conducted during the: 1) opening meeting on 24 October 2017; 2) the site visit of 24 October through 27 October 2017; and 3) the follow up visit for discussions of carbon quantification and modelling on 1 November 2017, in Salem, Oregon.

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 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.

Technical Expert: Dr. Letty Brown, SCS Global Services, Verification Forester
Dr. Brown holds a Ph.D. in Forest Science from the University of California, Berkeley, where she also completed her Master's in Range Ecology. Prior to joining SCS, Dr. Brown worked as a Forest Scientist at URS, where she led forest carbon offset project development and management of forest inventory for various clients. In this role she also worked on methodology development with the Verified Carbon Standard, developing methods for crediting wetland conservation projects in their Technical Working Group. Upon receiving her Ph.D. in 2007, Dr. Brown was a Fulbright Scholar and Postdoctoral Researcher in Brazil, designing and implementing remote-sensing and ground-based research to map and designate conservation targets for a portion of the Brazilian Atlantic Forest. Her background also includes forest restoration and ecological analysis, having created habitat conservation plans in California and managed teams of field researchers throughout her career. She is trained as an Arborist, and has extensive experience using GIS software, database software, and statistical software. Dr. Brown is proficient in Portuguese, French, and Spanish, in addition to her English fluency.

Senior Technical Reviewer: Christie Pollet-Young, Director of SCS' Greenhouse Gas Verification Program
Ms. Pollet-Young is the Director of SCS's Greenhouse Gas Verification Program. Ms. Pollet-Young has over 20 years of experience in forestry, including forest management, forest ecology research, conservation planning, and carbon offset verification in both tropical and temperate climes. Prior to her tenure at SCS, Ms. Pollet-Young worked for the Smithsonian Institution's Center for Tropical Forest Science where she oversaw a network of forest dynamics plots throughout the tropics, and for The Nature Conservancy of Peru where she developed an ecoregional plan for the conservation of Peruvian montane forests and the bi-national Equatorial Pacific ecoregion in Peru and Ecuador. Ms. Pollet-Young completed a Master of Forest Science from Yale University where she was a Doris Duke Scholar and conducted her Master's thesis research in Khao Yai National Park in Thailand. Ms. Pollet-Young also graduated with high honours from the University of California, Berkeley with a Bachelor of Science in Environmental Science, Policy and Management and a minor in forestry. Ms. Pollet-Young is a lead auditor with SCS who has participated in the assessment of over 50 forest carbon offset projects around the globe under the standards of the Climate Action Reserve, the Verified Carbon Standard, the American Carbon Registry, the Climate, Community and Biodiversity Alliance, and the California Air Resources Board' Cap and Trade Program. In addition, Ms. Pollet-Young is a VCS AFOLU expert in Improved Forest Management and Jurisdictional Nested REDD+, as well as a recipient of a CARROT award from the Climate Action Reserve.

Assistant Technical Reviewer: 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.

Witness: 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 California Air Resources Board (ARB), Climate Action Reserve, the Verified Carbon Standard and the Climate, Community and Biodiversity Standards. He is also a California Registered Professional Forester with Technical Expert credentials for ARB forestry projects.

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. The Project Plan for the Project was submitted to ACR for screening and the result of this screening was a GHG Project Plan Screening Report issued by ACR on 6 October 2017, which included requests for corrections and requests for clarifications. The Project Proponent addressed the requests, revising the Project Plan, and resubmitting the Plan to ACR for a second screening on 10 October 2017. The second screening identified an addition to the methodology regarding burned logging slash which required a minor edit. The Project Proponent addressed the request and resubmitted the GHG Project Plan on 11 October 2017. The third screening found that all requests for corrections and clarifications had been adequately addressed and that as a result, the revised Project Plan for the Project was eligible for certification under ACR.

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 and verification of the GHG assertion for the Project. The Project Proponent provided to SCS the Project Plan (dated 10 October 2017) and additional supporting documentation for a desk review on the 11 October 2017, 23 October 2017, and 9 February 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 (see Section D) 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 equations, default factors used, and growth and yield model were appropriate and from published sources or approved by ACR.

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 opening meeting of 24 October, which occurred on the site visit of 24 - 27 October 2017.

C. Site Visit

The Lead Verifier conducted an opening meeting on 24 October 2017, the first day of the site visit. The site visit was conducted near Morton, Washington, from 24 to 27 September 2017. Site visit activities consisted of an office meeting held at Port Blakely's main office and a sampling of plots and conducting boundary work in the Winston Creek Forest Carbon project area.

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

- Teresa Loo, Project Proponent, Port Blakely
- David Ford, Lead contractor – project developer, L&C Carbon
- Greg Latta, Baseline and Project Scenario modeling, Sub-contractor to L&C Carbon

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

- David Shoch, Contractor for Technical Monitoring, TerraCarbon 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 verification opinion. At this time all Findings have been appropriately addressed and subsequently closed by SCS.

The Findings from the validation/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 and verified the Monitoring Report against the assessment criteria. 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 first reporting period of 17 April 2017 through 31 August 2017. The following sections describe the elements of the Project Plan and Monitoring Report that were examined.

A. Eligibility
- The Project is located on non-federal US forestlands; the Project Proponents presented clear land title and offset title.
- 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.
- The Project start date, 17 April 2017, is when the Project Proponent initiated its formal carbon inventory. The project term of 40 years, and the crediting period of 20 years conform to ACR requirements.
- The ACR Forest Carbon Standard includes additional eligibility requirements, including that the offsets generated by the project are 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. 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, active harvests were observed on site and the project proponents GIS information had already mapped the timber boundary delineating the harvest area. This indicates a high level of efficiency in updating inventory information in real time to account for depletion during harvest activities. Therefore, the project is in conformance with the ACR requirements associated with location and boundaries.

C. Land Title and Ownership of Offset Credits

The project encompasses one large and two smaller tracts of forestland, owned by Port Blakely, located southwest of the town of Morton, WA. The project team provided the deeds of the parcels contained within the project area, as well as the Project Proponent's signed attestation of Offset Title.

The validation/verification team performed ownership checks through online databases, and were 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 start date is listed as 17 April, 2017. "Although Port Blakely began evaluating a forest carbon project in the Winston Creek area as early as the fall of 2016, it did not take formal action to commit land management actions to increase carbon stocks within the Winston Creek properties until April 2017, at which time it initiated a forest carbon inventory."

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 ACR Requirements.

E. Project Activities

The Project Plan describes the project activities which consist of extending standard rotation ages (35-45 years), thus, sequestering more carbon on site. More specifically, "The maximum annual volume allowed z is changed to 2,500 mbf/yr reflecting the project scenario reduced harvest level". These parameters and constraints can be found in Section E2 of the Project Plan and coded within the GAMS linear programming files provided by the project proponent.

The validation/verification team assessed the above via independent recalculation of a sample of prescriptions over the lifetime of the project. The results indicated that the quantification of carbon and modeling of trees forward in time were both done correctly.

The project activities are clearly defined and are in conformance with the ACR requirements.

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 provided in Appendix F and 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 18% buffer contribution is documented in workbook "ACR_PB_WC_RiskRecalc_V1-0_031318.xlsx". 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. The pools include above and belowground biomass 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, FVS inputs, and values used in both the ex-ante and ex post baseline and project scenarios. Once the inputs were verified, the FVS models were rerun and the calculation of ERT's checked.

To derive the carbon values for the reporting period of 17 April 2017 through 31 August 2017, the project used live tree carbon stocks from the inventory performed April 2017 - May 2017. To derive the with-project scenario, the inventory was projected to 1 September 2017 (the end date of the monitoring period). Degrowing the treelist was not required as the raw inventory data was gathered as of the start date 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 FVS with no management.

While defect was recorded during the plot establishment, during the quantification, the project team omitted defect for live tree carbon stocks. A finding was issued regarding the above and is documented in SCS' findings workbook.

Carbon was estimated using the FVS FFE with the Jenkins equations. All of the calculation methods are allowed under the Methodology and 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 E6 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 and data management, are detailed in the Project Plan. 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 determined that the project proponent is only using sampled data and omitting the two youngest strata. A finding was issued regarding the above.

Given that the percentage uncertainty is expressed as 90% confidence interval percentage of the mean of the carbon stock in above and below ground live trees (in metric tonsCO2) for the ***last re-measurement of the inventory*** prior to year *t*.", the current reported value of 7.2% (initial inventory uncertainty) conforms with the ACR requirements as currently defined.

SCS' recalculated initial project uncertainty is 7.66% (includes the two youngest strata with zero carbon which were not sampled during the project inventory) and is based on the quantification steps outlined in the current ACR IFM Methodology, Version 1.2.

M. Leakage

The Project Plan describes that leakage analysis was limited to market leakage. While the Project Plan states "there will be more than a 5% decrease in wood product production relative to the baseline", the project proponent maintains a current SFI certificate that covers all lands under Port Blakely's active timber management program. Market leakage was based upon the difference between the project scenario harvested wood products volume and the baseline scenario harvested wood products volume. The Project plan also states that "project activity will decrease total wood products produced by 25% or more over the Crediting Period, hence the assigned market leakage deduction (*LK*) is 40%."

The validation/verification team found the Project's approach to leakage to be reasonable.

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 areas as a community resource for education, research and recreation, 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 April 17, 2017 through 31 August 2017 are referenced in the Monitoring Report and documented in the ERT workbook, "Appendix G_ACR_ERT_worksheet_24Jan2018". 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. All possible prescriptions are run to obtained volume outputs which are then fed into GAMS (https://www.gams.com/), a linear programming tool, to define constraints and maximize net present value for given objectives.

The ERT's associated with the first reporting period are reported in the ERT workbook and are verified by the validation/verification team are as follows:

- 357,071 tCO$_2$e (Emissions reductions at the end of the current reporting period including deductions for uncertainty, risk, and leakage)
- 18% buffer contribution amounting to 78,382 tCO$_2$e (Buffer Contribution at the end of the current reporting period)
- 40% Leakage deduction

The validation/verification team confirmed that the Monitoring Report conforms to the requirements of the Validation/Verification Criteria.
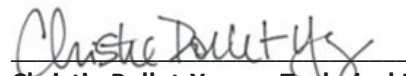
VIII. Validation and Verification Opinion

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 Assessment Criteria.

- 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 SCS assessment team was able to confirm that:

- The Monitoring Report conforms to the requirements of the Assessment Criteria;
- The data and information supporting the GHG assertion were projected correctly;
  - The actual number of ERTs, 357,071 tCO$_2$e, included in Monitoring Report and reported in the ERT workbook is verifiable. The value above excludes the 18% risk buffer deduction which amounts to 78,382 tCO$_2$e.

Through the validation and verification assessment, SCS has determined that the Winston Creek Forest Carbon project, developed by Port Blakely is in conformance with the Assessment Criteria. 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. Therefore, SCS is able to issue a positive Validation and Verification Opinion, free of any qualifications or limitations for the project.

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Michael Hoe, Lead Verifier

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Christie Pollet-Young, Technical Reviewer

Appendix A. Findings

NIR 1 Dated 3 Nov 2017
Standard Reference: Template for GHG Project Plans v 1.0
Document Reference: Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal US Forestlands v 1.2 ("Methodology")
Finding: The ACR template for GHG Project Plans for Section A4 Location states "Describe project location, including geographic and physical information allowing for unique identification and delineation of the specific extent of the project. GPS coordinates should be provided. Include information on percentage forestland either in map or in text."
Section A4 of the submitted GHG Project Plan currently does not contain information on percentage of forestland either in map or text, however, the method to meet requirements stated for forest definition on page 5 of the GHG plan states that "All areas qualify as forestland per the methodology". Please clarify or include a statement or reference which explicitly identifies the percentage of forestland in section A4.
Project Personnel Response: The following language was added to Section A4 of the GHG Plan: "100 percent of the project area (10,088 acres) is forestland. There are some stands within the project area that were recently clear-cut and are temporarily un-stocked; however, these areas will be replanted as required by the Washington Forest Practices Rules and are classified as forestland by the county tax assessor."

See the file on shared dropbox -- PB_Winston Creek_GHG Plan_v2.1_07Nov2017_Redline Version

As further evidence that 100 percent of the Project Area is forestland, the Project Area boundary excludes, roads, RMA for stream courses (fish) and waterbodies, and non-forest areas (rock pits and non-commercial forestland).
Auditor Response: Upon issuance of this finding, the client updated the GHG plan to be in conformance, therefore this finding has been resolved.
TEST

NIR 2 Dated 3 Nov 2017
Standard Reference: ACR Standard 4.0 Chapter 2: Accounting and Data Quality Principles
Document Reference: ACR Standard 4.0 and ISO 14064 Part 2 (2006)
Finding: The ACR Standard 4.0, Chapter 2, Table 1 states that one of the core GHG accounting principles regarding accuracy is to "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)."
While defect has been measured for all observations recorded during the forest inventory data collection, the values were not used during the quantification of onsite carbon stocks which will result in an over estimation of tree level carbon and thus an over-estimation of plot level carbon. Please provide clarification as to why defect values were not utilized during the quantification of onsite carbon stocks and baseline carbon calculations.

Project Personnel Response: You are correct that defect was not used to quantify onsite carbon stocks. Defect, as well as heights, are not used by the approved FVS FFE Jenkins carbon reports.

The methodology used for this project - Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal Forestlands, Version 1.2, December 2016, American Carbon Registry, Arlington, VA, USA - does not require (nor even mention) that defect be used to calculate onsite carbon. The ACR methodology used for this project meets the requirements of the ACR Standard 4.0, as determined by a blind peer review process and its approval by ACR.

There were a number of data elements collected by the forestland owner for use in its ongoing data management system that were not used to quantify onsite carbon. Of note, there were only eight of 751 trees in the inventory that had minor amounts of defect (missing biomass) - all in the top 1/3 of the tree.

Auditor Response: Upon review of the Project Response to this finding, the audit team sought guidance from the American Carbon Registry regarding compliance with the core principles of conservativeness in greenhouse gas accounting (ACR Standard 4.0) and best forestry practices with respect to the omission of defect within the carbon calculations for actual and baseline carbon stocks. Guidance was received which states that they will issue an Errata/Clarification note to users of the ACR-approved IFM Non-Federal US Forestlands Methodology. It will state that in accordance with best forestry practices, and the core principle of conservativeness in greenhouse gas accounting (ACR Standard 4.0), information on defect for live and standing dead trees should be included in forest inventories and accounted for in onsite carbon stocks. This will not apply to projects for which inventories have already taken place. However, they have asked that current project teams demonstrate that excluding defect does not violate any material error threshold of 5%.

Project Personnel Response 2: We reran the Winston Creek inventory using the defect values collected during the inventory. We compared the resulting estimate with the current project inventory estimate (in which defect is ignored). The result is a 0.043% difference in stock estimates between the two approaches. Thus, the difference is CO_2 stocking is not material.

See the "summary stocks" tab in the Excel file named Winston Creek inventory calcs and stats alt w defect Nov2017. The file is located in the shared Dropbox folder within the Inventory Documents folder.

For the estimate containing defect, total aboveground biomass was adjusted to deduct any portion observed missing (referencing defect assessments for the top, middle and bottom thirds of the total aboveground biomass of inventory trees). Deductions for defect were incorporated by multiplying total aboveground biomass by weighted average overall percent sound (1 – recorded percent defect) referencing the proportions of aboveground tree biomass represented in each of three assessed thirds (referenced from Climate Action Reserve 2012. Quantification Guidance for Use with Forest Carbon Projects).

Auditor Response 2: Upon issuance of this finding, the project proponent confirmed that the difference in carbon stocks, when defect values are included, has not resulted in a material error. Thus this finding has been resolved.

NIR 3 Dated 14 Nov 2017
Standard Reference: ACR Standard v4.0, Chap 3
Document Reference:
Finding: The ACR Standard 4.0, Chapter 3 states that "Projects must maintain material regulatory compliance. In order to maintain material regulatory compliance, a project must complete all regulatory requirements at required intervals. Project Proponents are required to provide a regulatory compliance attestation to a verification body at each verification. This attestation must disclose all violations or other instances of noncompliance with laws, regulations, or other legally binding mandates directly related to project activities." Please provide an attestation that no violations have occurred within the project area which are directly related to the project activities associated with the Project Area.
Project Personnel Response: A copy of the Project Proponent's attestation is available on the shared Dropbox folder in the Round 2 Findings subfolder of the Verification Documents folder.
Auditor Response: Upon issuance of this finding, the project proponent provided an attestation that no violations have occurred during the project's current reporting period. Therefore, this finding has been resolved.
TEST

NIR 4 Dated 15 Nov 2017
Standard Reference: ACR IFM Methodology V1.2, December 2016; Section 3.1
Document Reference: FVS_PBWC_CT.OUT, FVS_PBWC_Grow.OUT, FVS_PBWC_Pl.OUT, FVS_PB_WC_PlCT.OUT
Finding: Section 3.1 of the "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, December 2016" states that "Modelling must be completed with a peer reviewed forestry model that has been calibrated for use in the project region. The GHG Plan must detail what model is being used and what variants have been selected. All model inputs and outputs must be available for inspection by the verifier… The output of the models must include either projected total aboveground and below ground carbon per acre, volume in live aboveground tree biomass, or another appropriate unit by strata in the baseline."
During the review of the files used during baseline modelling located in the "FVS Model files" folder, SCS identified a warning statement within the OUT files which indicates that zero tree records were read into the model from the actual inventory and the "notrees option" was automatically invoked along with the "ezcruise option in regeneration establishment model". Given that this will have a direct bearing on the baseline outputs, please provide us with clarification as to how this was accounted for during growth and yield modelling.

Project Personnel Response: The net present value maximization was accomplished using a 100-year linear programming optimization of discounted cash flow from the project area. Using this methodology is common practice as it encompasses a longer time horizon and allows for constraints due to operability limitations. The longer time horizon is necessary as the final harvest decision of current stands (the existing cruise tree records) depends on assumptions regarding future stand silvicultural choices.

In FVS simulation of stands regenerated in the future typically involve running the model with no trees (hence the "notrees option" and ezcruise option in regeneration establishment model") which are then added into the simulation using either a "Plant" or "Natural" keyword. In the baseline modelling exercise the regeneration is accomplished in this manner adding trees to the model at the appropriate density and species mix for this Port Blakely tree farm. The operability constraints used represent the limitations on harvesting all financially mature (at 6% discount rate) stands in one particular year and instead smooth the removals over two years. The accounting for how this was handled in growth and yield modelling can be found in the FVS keyword files for modelling options chosen and FVS output files provided in the verification information packet.

Auditor Response: Upon issuance of this finding, clarification was provided on the methods used during the NPV analysis and subsequent Baseline Scenario which indicates that the error displayed within the FVS "OUT" file is intentional and represents stands which have experienced complete removal of all volume (clear-cut). Upon further review, the audit team determined that this statement is accurate and no further information was required. Therefore, this finding has been resolved.
TEST

NIR 5 Dated 15 Nov 2017
Standard Reference: ACR IFM Methodology V1.2, December 2016; Section 3.1
Document Reference:
Finding: Section 3.1 of the "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, December 2016" states that "Modelling must be completed with a peer reviewed forestry model that has been calibrated for use in the project region. The GHG Plan must detail what model is being used and what variants have been selected. All model inputs and outputs must be available for inspection by the verifier… The output of the models must include either projected total aboveground and below ground carbon per acre, volume in live aboveground tree biomass, or another appropriate unit by strata in the baseline."
During the modelling discussion, it was mentioned that site productivity information was obtained directly from Port Blakely with spatial references included. This information was intersected with the Project Area to obtain representative site index values. Please provide clarification on the data source or a document and/or shapefile with the site index information used during growth and yield modelling as indicated above.

Project Personnel Response: We used the site index values provided by Port Blakely to calculate the weighted average site index for each stratum.

The site index values we used for growth and yield modelling came from Port Blakely's GIS stand attribute tables. Port Blakely collects site index information for stands on an ongoing basis and stores this information in GIS stand attribute tables. Port Blakely relies on this site index information for stand management decision-making.

The GIS shape file layer that contains the site index data is available in our shared Dropbox in the Site Index subfolder of the Round 2 Findings folder within the Verification Documents folder.

An Excel spreadsheet used to calculate the weighted average site indices, with a step-by-step explanation, is also available in the Site Index subfolder.

Auditor Response: Upon issuance of this finding, the client provided a GIS shapefile containing site index values used across the project area. Upon review of the information, the audit team determined that the majority of the project area falls in site class II ground which is consistent with the weighted averages provided in Port Blakely's site index data. Therefore, this finding has been resolved.
TEST

NIR 6 Dated 16 Nov 2017
Standard Reference: ACR Standard v4.0, Chap 2
Document Reference: strata.shp; in folder: GIS files
Finding: Chapter 2, Part B of the American Carbon Registry Standard v4.0 states that "GHG project boundaries include a project's physical boundary or implementation area, the GHG sources, sinks and reservoirs (or pools) considered, and the project duration." In addition, "For Agriculture, Forestry and Other Land Use (AFOLU) projects, the Project Proponent shall provide maps, Geographic Information System (GIS) shapefiles, or other relevant information to delineate the project boundary." Furthermore, Chapter 2, Table 1 states to "Reduce bias and uncertainties as far as is practical".

During the review of the Project Area shapefiles, multiple areas were identified which appear to be tiny slivers of land which were not omitted from the Project Area as originally intended. For example, polygon FID #128 (107 acres) contains a very small polygon outside the south-eastern edge of the main polygon. FID #120 (61 acres) also contains a thin strip outside the northern edge of the main polygon. Please provide clarification as to if this was intentional and its practical use or application. Otherwise, please remove these areas from the Project Area shapefile as they appear to be outside of the Project Area as intended.

Project Personnel Response: The slivers identified in your review are due to the process of getting to the project net acres. We reviewed the extent and total acreage contained in the slivers for the entire Project Area (see process below) and determined that slivers within buffers total 0.0436 acres. Thus, we conclude that this difference in acreage is immaterial and we did not remove the slivers in the GIS layers.

Getting to the stands defined for the project area was a process of identifying productive stands and eliminating buffers of water, roads, and non-productive land. The buffers were either based on recent completed harvests or an estimation of what will be buffered in future harvest. Gaps between using recent buffers after erasing the harvest unit from estimated buffers resulted in slivers. After using multipart to single part, dissolving, and computing acres, the portions of stands less than 0.1 acres were reviewed and determined to be slivers within buffers totalling 0.0436 acres.

A shapefile called Carbon_Stands_SLIVERS_Dissolve_Remove_201071117.shp identifies all the slivers which could be removed is located in the shared Dropbox folder in the Round 2 Findings subfolder of the Verification Documents folder.
Auditor Response: The audit team confirmed that the change in total acres will not result in a material error and thus, this finding has been resolved.
TEST

NIR 7 Dated 3 Jan 2018
Standard Reference: ACR Risk Analysis Buffer Tool
Document Reference: PB_Winston Creek_GHG plan_v2.0_11Oct2017, Appendix F; Wildlife Policy {Forest Management Documents folder}
Finding: The ACR Risk Analysis Buffer Tool states that verifiable evidence must be provided when a fire risk of 2% is selected for the project. Whereas, the "Wildlife Policy" document within the "Forest Management Documents" folder states that "In the past, Port Blakely foresters have used controlled burning on a small scale as a silviculture tool to remove excessive woody debris and to prepare sites for replanting following harvest. However, the risks associated with using fire remain very high due to difficulties in controlling fire behaviour, and because of the severity of liabilities associated with wild fire. Burning also creates air quality hazards when done in close proximity to metropolitan areas. Given the risks and liabilities, Port Blakely Tree Farms does not consider fire to be a viable management tool for our current ownership." Please provide clarification and documented evidence that the Winston Creek Project is in a low fire risk region.
Project Personnel Response: According to the USDA Forest Service's Fire Modelling Institute, the wildlife potential for the area in and around the Project Area is rated low. See the publicly available maps that are a raster geospatial product produced by the USDA Forest Service.
https://www.firelab.org/project/wildfire-hazard-potential and
https://www.firelab.org/document/continuous-2014-whp-gis-data-and-maps and
https://www.firelab.org/sites/default/files/images/downloads/whp_2014_continuous_midsize.jpg
The west side of the Cascade mountain range is considered a wet forest type and has a low risk of wildfire occurrences. Since the early 1900s, there is no record of a wildfire in Lewis county exceeding 5,000 acres (see https://en.wikipedia.org/wiki/List_of_Washington_wildfires). Further, the average rainfall for the area in and around the project area is about 55 inches per year (see https://www.usclimatedata.com/climate/packwood/washington/united-states/uswa0333). The project area has a good road network and is located adjacent to a major water reservoir (Riffe Lake) which can be used for fire suppression purposes. In addition, the Washington DNR provides fire protection services in and around the Project Area. Washington DNR is one of the premiere wildland fire agencies in the country. Thus, if a fire did ignite, resources from Washington DNR can rapidly be deployed to initial attack any occurrence of fire to minimize forest damage. Port Blakely's policies on whether to use controlled burning as a site preparation tool is not relevant for determining the project's fire risk rating. Financial liability and public relations are key factors considered by Port Blakely in determining whether to use fire as a site preparation tool. Its policy is not a statement about the fire risk rating of the Project Area.

Auditor Response: Upon issuance of this finding the project proponent provided sufficient clarification regarding the reported wildfire risk within the GHG plan. Therefore, this finding has been resolved.
TEST

NCR 8 Dated 3 Jan 2018
Standard Reference: ACR 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, December 2016
Document Reference: PB_Winston Creek_GHG plan_v2.0_11Oct2017; Winston Creek inventory calcs and stats; Winston Creek Inventory Results Jun2017; PortBlakely_Carbon_2017 {ArcGIS Map Package}
Finding: Equation 10 of the ACR 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, December 2016 defines how to quantify uncertainty in the baseline scenario.
During the review of section E4. Uncertainty within the GHG plan and their associated calculations within "Winston Creek inventory calcs and stats", worksheet "PIVOT LIVE ABGB", the audit team identified an error in cell K135 (formula: =TINV(0.1,O129-6)*K133), where O129 represents the number of plots in stratum SW20-40. In addition, the mean of 213.1 omits strata HW0-11 and SW0-11, resulting in an incorrect value for the project mean carbon stocks. Project Acres by stratum are also inconsistent with the GIS shapefile provided which represents the physical boundary for the Project Area. Therefore, the reported value for "Uncertainty" is out of conformance. This will affect the total reductions and removal enhancements.

Project Personnel Response: Cell K135 within the "Winston Creek inventory calcs and stats", worksheet "PIVOT LIVE ABGB" has been corrected to reflect the total number of inventory plots (117) and revise the degrees of freedom. This reduced the 90% CI from 15.5 to 15.3 and the 90% CI as a percent of the mean from 7.3 to 7.2. Regarding the mean calculation, since two of the eight strata were not sampled - due to the young age class of the stratum with little or no measurable carbon stems, it is correct to exclude the un-sampled area from calculating the mean of the sample. The HW0-11 and SW0-11 strata were not sampled and have no place in the derivation of the confidence interval. Note that the mean is the mean for the inventoried area, not the mean for the entire project area. We rechecked the Project Acres by stratum contained in the GIS attribute table and found them to be consistent with the acres used in the "Winston Creek inventory calcs and stats" workbook.
Auditor Response: Upon issuance of this finding the project proponent provided updated workbooks which addressed the discrepancy identified. In addition, a new workbook was provided "Appendix G_ACR_ERT_workseet…" which reports the correct uncertainty value for the Winston Creek Carbon Project following the ACR requirements. Therefore, this finding has been closed.
TEST

NIR 9 Dated 3 Jan 2018

Standard Reference: ACR 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, December 2016

Document Reference: PB_Winston Creek_GHG plan_v2.0_11Oct2017; Winston Creek inventory calcs and stats

Finding: Upon review of the GHG plan, the audit team identified an inconsistency between the reported initial carbon stocks in Section E1.1 of the GHG plan (1782368) and that of the value stored in "Winston Creek inventory calcs and stats" (1777536.67). We believe this to be an erroneous reference to older information. Please clarify which value is being used during the reporting of the "initial carbon stocks" for the purposes of quantifying the actual baseline periodic tree carbon flux as stated within the GHG plan.

Project Personnel Response: The inconsistency of the reported initial carbon stocks in Section E1.1 of the GHG plan was corrected to match the "Winston Creek inventory calcs and stats" (1777536.67).

Auditor Response: Upon issuance of this finding, the workbook "Winston Creek inventory calcs and stats" was updated to match the current, correct values. Therefore, this finding has been resolved.
TEST

NCR 10 Dated
Standard Reference: ACR 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, December 2016; ACR Forest Carbon Project Standard 2.1
Document Reference: PB_Winston Creek_GHG Plan_v2.2_09Feb2018; Winston Creek inventory calcs and stats; Appendix G_ACR_ERT worksheet_24Jan2018
Finding: Sections C3 and 3.2 of the current approved IFM methodology, "Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands Version 1.2", defines how to quantify carbon in wood products. In addition, the "ACR Forest Carbon Standard 2.1" states "Project Proponents and other interested parties should refer to www.americancarbonregistry.org for the latest version of this standard, the ACR Standard, methodologies, tools, document templates, and other guidance".
Upon review of the current quantification methods used for Winston Creek, the audit team identified that an older version of the methodology was being applied which neglects the steps required and outlined in the current methodology. Specifically, accounting for mill efficiencies, carbon remaining stored in-use (100 years), and carbon remaining in landfills (100 years) were not included or cannot be located in the current modelling files, GHG plan, and supplementary documents. Therefore, the current GHG plan is out of conformance with ACR requirements. Please update the current calculations of wood products using the methods defined in the current IFM methodology, version 2.1.

Project Personnel Response:
Auditor Response: Upon issuance of this finding the project proponent requested a modification to the updated methodology which stated:
 "Our request sent to you on February 20 stated:
Request for modification – we request a modification from using Version 1.2 – Section 3.2 (Wood Products
Calculations) procedures, due to required information not being available on the ACR website as specified in the
methodology. We request approval to use the procedures in Version 1.1 – Section 3.2 to determine the amount of
carbon in harvested wood, as the approach provides a credible and scientifically valid way to determine the
amount of carbon in harvested wood."
On 27 February 2018, SCS was notified that David Ford received a ruling from ACR on the Harvested Wood Products calculations implemented on the project which did not require adjustments to the current quantification utilized on the Winston Creek Carbon Project. The statements above have been memorialized within email correspondence and saved in SCS' records. Therefore, this finding has been resolved.

TEST

NCR 11 Dated
Standard Reference: ACR 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, December 2016; ACR Forest Carbon Project Standard 2.1
Document Reference: PB_Winston Creek_GHG Plan_v2.2_09Feb2018; Winston Creek inventory calcs and stats; Appendix G_ACR_ERT worksheet_24Jan2018
Finding: Section C5 of the current approved IFM methodology, "Improved Forest Management Methodology for Quantifying GHG Removals and Emission Reductions through Increased Forest Carbon Sequestration on Non-Federal U.S. Forestlands Version 1.2", defines how uncertainty in the baseline scenario should be quantified. In addition, the "ACR Forest Carbon Project Standard 2.1", states "The Project Proponent should reduce, as far as is practical, uncertainties related to the quantification of GHG emission reductions or removal enhancements… The precision target is applied across the project, not within particular carbon pools or strata."
Upon review of the current uncertainty calculations, the audit team identified that the average carbon stored in wood products was not included. Therefore, the current calculation for uncertainty in the baseline scenario is not in conformance with the requirements.

Project Personnel Response:
Auditor Response: Upon issuance of this finding the project proponent requested a modification to the updated methodology which stated:
 "Our request sent to you on February 20 stated:
Request for modification – we request a modification from using Version 1.2 – Section 3.2 (Wood Products
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